CHAPTER – II
REVIEW
CHAPTER-II

REVIEW OF RELATED LITERATURE

A sincere honest and scholarly attempt was made by the investigator to study the relevant literature and research work pertaining to the present study.

The review of the literatures has been classified under the following headings.

- Studies related to Fitness (Physical Fitness/ Motor Fitness/ Health-Related Fitness).
- Studies related to Socio-economic Status, Urban and Rural etc.
- Studies related to Poverty/Cast System.

STUDIES RELATED TO FITNESS (PHYSICAL FITNESS/)

Zhao et al (2005) conducted a study to analyze the motor performance status of the students of Han nationality in fifteen provinces in China. Totally, 161,804 students of Han nationality aged from 7 to 18 years old were involved in the Chinese Surveillance on Students' Physical Fitness and Health in 2004. Motor abilities were accessed with the aid of gripping power, 50 m dash, standing long jump and 1-min sit-ups. Based on general statistical description, principal component analysis and linear regression,
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The development characters of students' motor performance were explored. This results showed some characters similar to those of last ones: motor capability was improved in correlation with age; boys did better than girls, the difference between 18 year-old rural boys and rural girls was 15.3 kg, 2.0 s, 58.6 cm, 8.7/min; the urban students performed better than the rural ones, the difference between 15 year-old urban boys and rural boys was 0.9 kg, -0.2 s, 3.5 cm, 3.5/min. The first principal component might represent the 4 tests greatly. Regression analysis on principal component quantitatively interpreted the influence of factors such as age, sex and area. It may be concluded that the general principles of exercise quality development of students are still in work. Principal component analysis should be adequate and convenient in motor performance analysis.

Upadhyay (1985) conducted a study on 105 subjects aged between 6 to 12 years. The Kirchmars Motor Fitness Test was applied to collect data from the above mentioned age groups after which seven tests were applied to find out the differences in various age groups for the boys in above mentioned motor fitness test. A post-hoc Scheffes test was applied for the significant seven values to find out that which of the paired means was most significant. All the groups indicated significant difference in power and speed. The higher age groups were found comparatively superior than those
of lower age groups. In most of the variables, it was found that the difference was significant.

**Brar and Shrivastav (1985)** conducted a cross-sectional study of motor fitness components of 100 school children (grade V to VIII) of Gwalior whose average age was 10 to 12 years. They administered the AAHPER Youth Fitness Tests and concluded from the study that the students studying in grades VI and VIII did vary in their motor fitness due to different physical education programme and different evaluation program.

**Nelson (1983)** conducted a study to determine the physical fitness as a function of gender differences explained by age and body size characteristics. The sample consisted of 12,362 boys and girls, ages 6 to 17, from throughout the United States. The performance of boys was superior in compare to the girls by age. The performance of boys was superior to girls on the mile-run and sit-up tests while girls out performed boys on the sit-and-reach test. For all three tests, an age by gender performance interaction existed, which demonstrated that the cross-sectional performance curves for boys and girls were not parallel over the ages studied. Boys continued to improve through 17 while girls leveled off and decreased in performance after age 15.
Yadav (1982) conducted a study on 270 male students with all age groups having an equal representation of 45 students each ranging in ages between six to eleven years. The subjects were tested within two months of their birthdays in flexed arm hang, push-ups, bent knee sit-ups (one minute), power, co-ordination, speed, agility, 600 meter run/walk, sit-and-reach test and shoulder rotation test. To determine the difference between means of different motor fitness components of various age groups, the level of significance chosen was 0.05. Since the F-value obtained for all the tests were significant, to find which of the differences among the paired means on various tests, Scheffes test was applied. The performance of boys ranging in age between six and eleven years, in motor fitness components increased as the age advances, except in the case of sit-and-reach test item.

Robson et. al. (1981) conducted a study to determine the selected physical fitness component of boys and girls at different stages of elementary school level, twenty boys and 20 girls were selected at random from five to eleven years. The components tested were speed, shoulder strength, explosive power and agility. It was found from the analysis of the data that boys had more shoulder strength than girls in all grades. In standing broad jump there was no significant difference in performance between boys and girls of grades one and two. Boys of grades three and four were
significantly superior to the girls of the same grade in 50 meter run and shuttle run.

**Odgers (1979)** studied the relationship between flexibility measures, skill performances and chronological age of six to thirteen year old boys. Subjects were tested on 19 flexibility measures and four measures of motor skill. According to his findings means for age groups showed significant differences in the following five measures: Arm flexion, extension, trunk lateral flexion, trunk rotation, thigh rotation, wrist flexion extension. No significant differences were found between boys of different ages in the following measures: Neck flexion extension, neck rotation, neck lateral flexion, hand supination-pronation, leg adduction, abduction, knee flexion, extension, trunk extension flexion, hip extension flexion, ankle flexion, extension foot supination-pronation, elbow flexion-extension. While comparing the flexibility measurement of more skilled performers with less skilled performers he found that the more skilled were more flexible in the following five instances: neck rotation, trunk flexion and trunk lateral flexion in the soft ball throw. Trunk extension-flexion in the standing broad jump and trunk extension-flexion in the 30 years run.

**Dinucci and Shows (1977)** determined possible age and race differences between black and Caucasian girls ages 6, 7 and 8 years. Ninety
female subjects were administrated 28 test items measuring speed, muscular power, agility, flexibility, balance, muscular endurance and cardio-respiratory endurance. Few significant differences were observed between adjacent ages but 8 years old females were significantly superior to the 6 year old subject on most motor performance variables utilized. For race comparisons, no significant differences were noted for measures of flexibility, muscular endurance, cardio-respiratory endurance, speed, balance of muscular power. The black subjects were significantly superior on two measures of agility while the Caucasian subjects performed significantly better on the time-limit shuttle run and grip strength.

**Hatey (1972)** conducted a study to investigate the effect of age on physical performance of elementary school boys in grades one through six by administering twelve motor performance tests to measure sprint speed, power, agility, reaction time, static balance, hip flexibility and elbow flexion, strength. He found a significant difference between grades levels on all twelve variables. The Scheffe’s test indicated that the largest performance increase was between grad one and two between grades five and six within middle grades providing plateau effect. The performance scores formed a curve linear relationship for all variables.
Loyd (1971) made a study to determine the differences between Negro and white boy’s measures on physical fitness. Physical fitness was measured by administering the three sub-tests of AAHPER Youth Fitness tests (sit-ups, standing broad jump and soft ball throw). He concluded that Negro boys co-ordination (softball throw) at both ninth and sixth grade levels and at the ninth and tenth grade levels. The difference was significant at .05 levels. Negro boys were significantly higher than white boys on standing broad jump at both fifth and sixth and ninth and tenth level at .01 level of significance. Negro boys scored significantly higher than white boys on over all physical fitness levels.

Milne (1971) conducted a longitudinal study of 110 children belonging to 5 through 11 years and data expressed in cross sectional form, of performance changes in motor items. The test items were bent arm hang, speed, sit-and-reach, jump and reach, agility, power. Longitudinal performance curves, based upon the mean score for each age group were plotted for each motor performance item semiannually from through eleven years. Motor performance scores generally indicated an improvement with successive years for both sexes in all items with the exception of sit-and-reach.
Ritcheson (1968) studied the relationship of several physical fitness variables in elementary school (100 fourth grades) boys and girls. Data on the following variables were collected and correlated with age, height, weight, I.Q., leg strength, body movement, time, 50 yard dash, shuttle run and standing broad jump. The mean scores on AAHPER Test items were compared on national norms. Several significant correlations were found, the highest being weight with leg strength (.48), leg strength with shuttle run (.35) and leg strength with 50 yard dash (-.86).

Geraldine (1968) conducted a study on the motor performance of primary grade Negro and White 6-7 and 8 years old children and concluded that static balance, dynamic balance, broad jump and jumps and reaches measures significantly from 6 to 8 years. Flexibility means decreased with ages but age differences were not significant. Six comparisons showed that boys were consistently superior in jumping and girls were superior in static balance and flexibility, but few of the differences were significant. Racial comparisons indicated that Negro children were significantly better in jump and reach and three of the six broad jumping groups.

Morehouse and Miller (1968) have stated that the ability of boys to perform athletic activities requiring strength, speed endurance and skill increased steadily between the age of five and twenty with adolescence
regarding but not interrupting the process. He continued to say that athletic ability in girls reached a maximum at the age of 13 or 14 years than tended to decline so that a six year old girl usually had a better performance than a girl of 18 years of age.

**Jordon (1967)** studied the strength and motor development of boys aged seven through twelve years. A moderate degree of inter-age consistency was found over the six years period for bar pushups, strength index, standing broad jump, 60 yard shuttle run, cable tension strength average the highest for these were for bar pushups .886 between ages 11 and 12 years, .876 between ages 8 and 9 years, the comparison of strength and motor ability means for advanced and retarded maturity groups revealed continuous significant differences for the two gross strength patterns, cable-tension strength average index. When the growth patterns of high and low PFI groups were compared continuous significant differences were obtained for bar pushups and strength index over the four years period.

**Haley (1967)** investigated the effect of age on physical performance of elementary school boys in grade one to six. 30 boys were randomly selected from each grade between the age group five to twelve years. Twelve motor performance tests were administered to measure sprint speed, power, agility, reaction time, static balance and dynamic balance, hip flexibility and
elbow flexion, strength. The result of the analysis of variance revealed a significant difference between the grade levels on all 12 variables.

**Drowtzkey and Madary (1966)** studied to evaluate physical and motor fitness of approximately 3,400 boys and girls in grades four through twelve and to evaluate the effectiveness of the current physical education programme in the development of fitness. The study discovered a progressive decline in the girl’s fitness scores means through the junior and senior high school grades. The result indicated that the fitness levels of physical activity outside the regular physical education classes were significantly more fit than those who did not participate in such activities. Tenth grade boys and girls demonstrated higher levels of motor fitness than 11th and 12th grades that were exempted from physical education.

**Robert (1963)** in his study on eight year old Caucasian boys found that boys of different physique type were significantly different in skeletal age. Strength index (Rogers) and standing broad jump, mature boys by skeletal age were larger in body weight, height, lung capacity, upper arm girth and stronger in gross strength than immature boys and boys who had greater gross strength as measured by strength index and average of eleven able tension tests were more mature and had better motor ability scores than weaker boys.
Ikeda (1962) compared the physical fitness of children in Lowa and Tokyo, Japan. The lowa test of Motor Fitness was given in 365 Tokyo children and 355 Lowa children, 9 to 12 years of age. The test battery included sit ups, standing broad jump, shuttle run, forward bend, grasshopper pull-ups for boys, bent arm hang for girls and dash. Anthropometric measurements were taken in height, weight, knee flexion length and leg length. The results indicated that lowa children were heavier, taller and had longer legs than Tokyo children scored better in all motor performance tests except one, sit-ups. A comparison of the physical education programme in these schools was also made and showed that Tokyo children had more chances for activity through physical education classes than the lowa group.

Borley et. al (1961) conducted a study to determine the differences among the 7th, 8th and 9th grade girls in power speed and flexibility and to determine the relationship between power and flexibility, speed and flexibility and certain anthropometric measures. They found that 7th grade girls were faster than 8th grade girls in the 50-yard dash, with 9th grade girls. No significant was found in other items studied.

Seils (1951) analyzed the data in terms of each grade level. He found that the mean performance of boys and girls becomes higher at each grade
level. Analysis of mean running performance of boys and girls classified into three months interests of age showed a rather constant increase of mean performance from the youngest age interval to the oldest age interval. Agility the mean performance of the boys and girls showed an increase at successive grade level the boys increase I mean performance at successive and intervals while the mean performance of girls did not. Jumping as measured by standing broad jump, the mean performance of boys showed an increase at successive grade levels. Mean throwing performance of boys and girls showed a very definite increase at each successive grade level. Mean performance of boys classified into three month age groups showed little evidence of consistent increase.
STUDIES RELATED TO SOCIO-ECONOMIC STATUS, URBAN AND RURAL ETC.:  

Kodli (2016) conducted a study to find out the effect of socio-economic status on the physical fitness of sports persons of bidar taluka. In this study to measure the socio-economic status of the sports person, Bharadwaj’s (1971) socio-economic status scale was used. As subject 50 sports persons of high socio-economic status and 50 sports persons of low socio-economic status ranging age group of 18 to 25 were selected randomly from bidar taluka. To analyze the physical fitness of selected sports persons, the motor fitness test was conducted. To find out the significant effect of socioeconomic status on physical fitness of sports persons belonging to bidar taluka, means, standard deviations and t-values were computed. The result of the study indicated that there was a positive effect of socio-economic status on physical fitness of sports persons of bidar taluka. In this study significant difference between high socio-economic status and low socio-economic status was observed.

Pena et. al. (2015) compared the physical fitness of school children resident in an urban colonia and in a rural indigenous community in Oaxaca, southern Mexico, was. Two measures of performance-related fitness (standing long jump, 35yard dash [32 m])
and four measures of health-related fitness (grip strength, sit and reach, timed sit-ups, distance run) were taken on 355 rural (175 boys, 184 girls) and 324 urban (163 boys, 161 girls) school children, 613 years of age. Urban children were significantly taller and heavier than rural children. Absolute grip strength did not consistently differ between rural and urban children, but when adjusted for age and body size, strength was greater in rural children. Explosive power (standing long jump) and abdominal strength and endurance (timed sit-ups) were better in urban than in rural children without and with adjustment for age and body size. Urban-rural differences in running speed (dash) and flexibility (sit and reach) varied by age group and sex. Younger rural children and older urban girls performed better in the distance run, whereas older rural and urban boys did not differ in endurance. The size advantage of urban children does not necessarily translate into better levels of performance and health-related physical fitness. The observed differences may be related to activity habits associated with school physical education and lifestyle in the respective communities.

**Sharma (2015)** conducted a study to find out the effect of socio-economic status on sport performance of junior national level
weightlifters belong to rural and urban area of India. Two hundred (Rural =100, Urban =100) junior national level male weightlifters were taken from Junior National weightlifting competition held at Manipur (Imphal). The Socioeconomic status questionnaire prepared and validated by Aghase and Helode (2002) was used for the purpose of data collection. To find out the significant effect of socioeconomic status on sport performance of national level junior male weightlifters belong to rural and urban area, means, standard deviations and t-ratios were computed. Results of the study indicated the positive effect of socioeconomic status on the sport performance of junior national level male weightlifters. Significance of difference was also observed in sport performance between rural and urban junior national level male weightlifters of high, mediocre and low socioeconomic status.

**Kuriakose & Abraham (2015)** conducted an investigation to compare the motor fitness abilities of rural and urban school students. Thirty school going boys students were \((n = 30)\) randomly selected as subjects and their age were ranged between 14 and 18 years. Among these thirty subjects fifteen \((n = 15)\) were rural area and the remaining fifteen \((n = 15)\) were from urban area school going students. For the purpose of the study motor fitness variables were considered for this
study as flexibility and speed. It was measured by using the standard test items of sit-and reach test and 50m run test. The collected data were analyzed by using the statistical tool of independent ‘t’ test. The result of the study revealed that, there was a significant difference on selected motor fitness variables of flexibility and the seed between the rural and urban area high school students of Wayanad district in Kerala state. Moreover, we can say that the basic motor fitness level of rural area high school students were better than the urban area school students. The level of confidence was fixed as 0.05 in all cases.

Faldu (2014) conducted a study to compare the Physical Fitness of Schedule Tribe and Non-Schedule Tribe students. With the assistance and help of the experts of the field of Physical Fitness, Physical Education, Sports and previous researches on these areas a comprehensive and suitable AAHPERED Youth Fitness Test was select for Physical Fitness score. 480 male college students were randomly selected from twenty one academic colleges of Hemchandracharya North Gujarat University. For this research, AAHPERED Youth Fitness Test was organized for the purpose of to find out the Physical Fitness of Schedule Tribe and Non-Schedule Tribe students. The obtained Physical Fitness score of Schedule Tribe
and Non-Schedule Tribe students were analyzed by using group statistic and independent samples test. The Physical Fitness Components score compared among Schedule Tribe and Non-Schedule Tribe students and results found that there is significant mean difference in 50 yard dash run, Standing Broad Jump and Pull-ups. Whereas there is no significant difference in Shuttle Run, Sit-ups and Distance Run.

*Kuriakose & Abraham (2014)* conducted a study to compare the motor fitness variables among the Attappady and Wayanad tribal students. To analyze the critical study, selected twenty each school going students at random in two different tribal areas in Kerala. The groups were named Attapapady tribes and the Wayanad tribes \((n = 40)\). The age of the selected students were ranged between 14 to 18 years \((16 \pm 2)\). The criterion variables were selected for the study was agility and leg explosive strength. The sergeant jump test was used for leg explosive strength and shuttle run for agility for this study. The independent ‘\(t\)’ test was used as a statistical technique for the current investigation. The result of the study points that the leg explosive strength of the Attappady tribe students were better than \((p \leq 0.05)\) the
Wayanad tribe students. However, there is no significant ($p \geq 0.05$) difference in agility between the two groups.

**Kumar Amit (2014)** conducted a study to compare the endurance and agility between rural and urban male basketball players. To fulfill the objective of the study 40 Basketball player (20 each) players of Rohtak was selected. The age of the selected subjects ranged from 15 to 19 years. Only (Endurance and Agility tests) were used to measures the selected physical fitness variables of the players. The study was delimited to Aahper youth fitness test. In order to analyze the data t-test was used to analyze the data and investigator observed the significant different between Rural and Urban basketball players of Rohtak.

**Kaur & Deol (2014)** conducted a study to find out the difference of health related fitness of rural, urban and slum boys. The samples were selected randomly from district Patiala and Punjab. Total one hundred fifty (n=150) subjects were selected, 50 from rural area, 50 from urban area and 50 from slum area. The age of subjects ranged between 12 to 17 years. The study aimed at studying speed, agility, flexibility and explosive strength of rural, urban and slum boys.
Podstawski et. al. (2014) conducted a study to determine differences in the level of motor abilities of 7-9-year-old girls and boys in relation to the socio-economic status of their families. The research was conducted in 12 primary schools in two regions of Poland namely of Warmia & Mazury and Pomorskie voivodeship, on the total of 1205 pupils (584 boys and 621 girls) aged 7-9. Selected economic factors such as the type of school (public or private), monthly income per household member and the number of children in a given family were accepted as the independent variables. The factors behind social status included the place of residence and parents' educational background. In order to determine the level of motor abilities, 13 motor tests were applied. The research revealed that motor tests such as 1 and 3 min. Burpee test and medicine ball throws (forward and backward) appeared to show the biggest differences in the level of motor abilities of the children whose social and economic status varied. The results of these tests as well as those of the shuttle run were significantly higher for the girls from the families of high social status than for the boys of low social status. Social status to a greater extent than economic one differentiated the tested motor abilities, especially in the case of the girls from families
marked by high social status, who scored better than boys. The exception is the skipping with clapping of hands - 8 s trial, which differentiated only the tested categories of economic status, especially when referred to the girls. Owing to the small number of significant differences between high and low social and economic status in both sex groups in the motor tests applied, it was assumed that in the less developed, agriculture and tourism-oriented areas there has occurred blurring of the differences in the level of children's motor abilities depending on their social and economic status.

**Yesupadam (2014)** conducted a study to compare the rural and urban high school boys of Medak district. A total of 120 boys were selected, among these 60 from rural high schools and 60 from urban high schools. The selected four motor fitness variables were i) speed, ii) shoulder strength iii) abdominal strength and iv) explosive power. To measure speed 50mtrs dash, shoulder strength flexed arm hang, abdominal strength bent knee sit-ups, explosive power standing broad jump were used. The statistical techniques like mean, S.D. and t-test were used to analyse the data. From the results it was concluded that rural boys are significantly differ from urban boys in shoulder girdle strength, abdominal strength, and explosive power. And in
speed urban high school boys are significantly differ from rural high school boys. This is because of their life style they have adopted themselves might be the reason.

Bohr et. al. (2013) in their study investigated the impact of SES (Socio-economic status) on physical fitness of both males and females. For the study the sample consisted of 954 from 6th, 7th and 8th graders of different public, urban and Illinois middle school. The students participated in the FITNESSGRAM battery of fitness assessments. Descriptive statistics were calculated for height, weight, age, and sex. Students were grouped as high or low SES depending on whether they qualified for the federal free lunch program. A multivariate analysis of variance controlled for age and stratified by sex compared the raw scores from the fitness test for low and high SES students. Odds ratios stratified by sex were calculated for the likelihood of not achieving the FITNESSGRAM Healthy Fitness Zone standards among SES groups. Girls of the low SES group had significantly lower scores on the FITNESSGRAM assessments and were significantly less likely to achieve Healthy Fitness Zone status than the girls from the high SES groups. For boys, SES was a
significant main effect for body composition but not for the other fitness tests conducted.

**Nezhad et. al. (2012)** conducted a study to determine Relationship between Social – Economic Status of family and adolescent students sport participation in Rasht-Iran. The analyses were based on data that collected from third grade high school students in three fields, (n= 415) adolescent (159 male, 255 female), in 10 high schools that use random from 2 area of Rasht city. We find that the families that have higher level of social -Economic Status, their children were more active and participate in sport more than others. By rising education of parents, higher level of Economic Status (income of family) and what the parents does (parents level of job) are important factors that amount of adolescent sport participation increased by themselves.

**Gill et. al. (2010)** conducted a study to compare physical fitness components namely speed, strength, endurance, agility and flexibility between female students belonging to rural and urban set-ups. The study was carried out on 100 female students, 50 rural and 50 urban of Punjabi University, Patiala. The data was collected by use of measurements of height and weight as well as by application of tests like jumping, stepping, running, flexibility test, etc. The data was
analyzed and compared with the help of statistical procedures in which arithmetic mean, standard deviation (S.D.), standard error of mean (SEM), t-test were employed. Rural female students were found to be superior in strength, endurance, speed and agility. Urban female students on the other hand, were found to be heavier and superior in tasks like flexibility.

Tinazci and Emiroglu, (2009) conducted a study to investigate the effects of environmental factors on physical fitness of rural and urban children. The study reveals the differences between physical fitness of children living in urban and rural districts of the Turkish Cypriot population. Total 3939 students of 9 to 11 year-old male primary school children from 90 schools of North Cyprus were tested. Testing procedures were similar to the Eurofit tests. The results showed that body mass index and skinfold thickness were higher in the urban children (P < .05). Differences in cardiopulmonary and motor fitness were also found between groups. In addition, flexibility and muscle endurance were significantly higher in the rural children. The significantly lower flexibility, muscle endurance, and strength of urban children might indicate a lower habitual physical activity level.
Eiben et al. (2005) conducted a study in Hungary to compare the growth and development pattern of urban and rural boys and girls. A sample of 40 school age boys and girls from selected schools were included in the study. Internationally standardized tools were used to compare the anthropometric measurements of urban and rural children. Study analysis identified that the urban boys and girls were taller and heavier compared with the rural boys and girls.

Zdirenc et al. (2005) conducted a study to investigate the effects of environmental factors, lifestyle and leisure time activities on physical fitness in rural and urban children. A cross-sectional observational study of 98 rural and 74 urban healthy children (aged 9-11 years) was conducted in Turkey. A questionnaire was used in collecting information about the children's physical activity habits and their school's facilities. The physical fitness of children was evaluated with EUROFIT test battery. The rural children preferred to play football and volleyball while the urban children had a tendency to prefer indoor sports. The percent of urban children not involved in any sports activity was 35%, while this rate was 30.6% for rural children. It was also found that the urban children watched TV more than the rural children (13.4 ± 2.7 h/week, 10.9 ± 2.7 h/week, respectively). The
results showed that body mass index and skin folds thickness were higher in the urban children (P < 0.05). There were no significant differences in the hip-waist ratio or the hip and waist circumference between the two groups. In cardiopulmonary and motor fitness, no difference was found between the two groups. In contrast, flexibility and muscle endurance were significantly higher in the rural children. The children living in the urban areas were more inactive and obese, which resulted in a decrease in their flexibility and muscle endurance fitness.

**Pena et al. (2003)** conducted a comparative study on the physical fitness of school children having resident in an urban colonia and in a rural indigenous community in Oaxaca, southern Mexico. Two measures of performance-related fitness power, speed and four measures of health-related fitness grip strength, sit and reach, timed sit-ups, distance run were taken on 355 rural (175 boys, 184 girls) and 324 urban (163 boys, 161 girls) school children of 6-13 years of age. Urban children were taller and heavier than rural children. Absolute grip strength did not consistently differ between rural and urban children, but when adjusted for age and body size, strength was greater in rural children. Explosive power and abdominal strength and
endurance were better in urban than in rural children without and with adjustment for age and body size. Urban-rural differences in speed and flexibility varied by age group and also sex. Younger rural children and older urban girls performed better in the distance run, whereas older rural and urban boys did not differ in endurance. The size advantage of urban children does not necessarily translate into better levels of performance- and health-related physical fitness. The observed differences were related to activity habits associated with school physical education and lifestyle in the respective communities.

Dollman et. al. (2002) the aim of this study was to compare urban and rural South Australian primary school children on measures of anthropometry, fitness, and environmental mediators of physical activity. The sample was comprised of 445 urban and 205 rural boys and 423 urban and 158 rural girls, all age 10-11 yrs at the time of testing. After controlling for socioeconomic status and ethnicity, rural girls and boys were faster over 1.6 k than their urban counterparts while rural girls were also faster over 50 m. Rural residence independently predicted participation in organized activity, increasing involvement in club sport, and decreasing involvement in school sport. Rural children reported a greater likelihood of participating in
two or more physical education classes per week. It is evident that urban and rural South Australia differs in ways which impact on fitness and physical activity patterns of upper primary age children.

Boot et al (1999) examined the fundamental motor skills among children and adolescents. It was potentially important contribution to satisfying participation in sports, games and other physical activities which leads to the development of an active lifestyle. However, few attempts have been made to determine the prevalence of fundamental motor skill mastery among young Australians. Total 5518 number of students was randomly selected from all three education sectors with the student’s age of 4, 6, 8 and 10 yrs. Performance on six fundamental motor skills (run, vertical jump, catch, overhand throw, forehand strike and kick) was assessed qualitatively. The prevalence of mastery and near mastery of each skill and mastery of each skill component is reported for boys and girls in each school year. The findings indicate that the prevalence of mastery and near mastery of each of the fundamental motor skills was generally low. There were no differences between students from urban or rural schools and the prevalence of skill mastery was directly associated with socioeconomic status more consistently among girls than among boys.
Greater curriculum time and resourcing and training of teachers is required to increase the proportion of students who have mastered the skills fundamental to common sports, games and other physical activities.

Cameron (1992) conducted a study to compare the growth of urban and rural school children of high (n=307) and average (n=867) socioeconomic status and two groups of rural children in South Africa. The rural children came from farm laborer’s families (n=392) and traditional subsistence farming environments (n=420). They revealed that urban children were taller than all other groups and 'average' urban children were consistently and at times significantly smaller and lighter. The rural children were significantly smaller and lighter.

Wolanski et al (1992) a total of 65487 girls and 62002 boys aged from 7 to 19 years were examined in towns and villages all over Poland. Co-efficient of multiple regression and percentage of explained variation in body build and motor fitness (somatic-fitness traits) of youth were calculated in relation to the variation in economic activity (as measured by electric energy use) and in demographic properties of 98 regions of Poland (urban and rural areas of 49
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provinces separately). Calculations were made separately for girls 7-8, 9-10, 14-15 and 18-19 years old and for boys 7-8, 11-12, 16-17 and 18-19 years old for boys also for increases between these age classes in towns and villages separately. This is an extension of the analysis based on the correlation of these traits in 9.5-year-old girls and 11.5-year-old boys (Wolanski et al. 1990). The regression of somatic-fitness traits on some demographic and economic properties of regions (regional factors) is most significant for rural boys, a little less significant for rural girls, and it is weakest for urban boys. The largest differences in the regression of somatic-fitness traits on regional factors between age classes were noted for rural girls, moderate for urban youth, and the smallest for rural boys. Dependence of somatic-fitness traits on regional factors increased with age. It was most clearly expressed in urban boys and least clear in rural girls. But the strongest relationships at an age of 18 years occurred only in towns (for both sexes), whereas at an age of 9 years for rural girls and at an age of 16 years for rural boys. The analyzed traits of body build and physical fitness in youth were most strongly related to the percentage of urban population in a region, especially for urban and rural boys and rural girls. In urban girls, the most important factor was migration
rate. Generally, the second most important factor influencing somatic-motor traits was electric energy use per 100 km². The strongest effect of regional factors on motor-fitness traits was recorded for runs, standing long jump and sit-ups, whereas running broad jump (normalized on stature) and trunk flexibility were least affected. Among body build traits, Kaup index and chest circumference were most affected, whereas arm circumference (normalized on stature twice stronger), and chest flexibility were least influenced. For example, the strongest relationship was noted between Kaup index (35.1%) in 9.5-year-old girls and regional infant death rate.

**Cauley et al (1991)** conducted a study on physical activity by socio-economic status in two population based cohorts, his findings show that in both high and low socio-economic status individuals activity was inversely associated with age and was higher in males than females. The relationship of physical activity to socio-economic status differed depending on the dimension of activity assessed participation in sports was reported more frequently in high status in females and males. Socio-economic status was a significant predictor of walking activity in females with low status females reported more walking. The number at hours spent in moderate activities was
greater, but the number of hours spent in light activity was lower, in low status makes. There was little difference by socio-economic status in the complete activity score average annual kilocalories per week.

Shukla (1991) the present study 120 sports women, 60 urban, 60 rural were included. They hailed from the state of Uttar Pradesh and Punjab. They participated in Hockey, Basketball, Cricket, Kho-Kho, volley ball and athletics. Urban boys participated in mini national, State and National games while rural boys at the inter-collegiate rural tournament and National games. Their age group varied between 13-22 years. For comparison, they have been divided into three groups. a) 13-16 years b) 17-19 years c) Above 19 years. The height and weight recorded and AAHPERD Test were conducted which consist of following: Short ball throw, sit-ups, pull-ups, shuttle run, 50 yard dash, standing broad jump and 600 yard dash. The result revealed that in standing broad jump the sportsman at very poor result indicating very low explosive capacity to the upper limb muscles. The rural sports women were poor in shuttle run indicating the minimum agility in them. The rural girls of A and B groups were observed possesses poor aerobic muscular power. As revealed by 50 yard dash run the overall performance of urban sportswomen were higher than the rural
counterpart and further analysis as observed with C group on urban sportswomen were comparatively higher than 50 yard dash. Standing broad jump, shuttle run and sit-ups with this lower age groups. Further in Uttar Pradesh, both rural and urban were very efficient. The overall competency of urban sportswomen than the rural counterpart might be attributed by better coaching and other facilities.

**Girish (1989)** tested hundred high school students (boys) from the rural area and hundred from the urban area. To compare the Physical fitness, AAHPERD youth fitness test and NPED test were administered. After the analysis of the data he concluded that there was no significant difference in physical fitness level obtained from AAHPERD youth fitness test between rural and urban high school boys.

**Bhatnagar, et. al. (1988)** undertook a study to examine the role of socio-economic status in the growth and development of 155 female children, subjects ranging in age from 6 to 16 years; 80 from the higher socioeconomic group, and 75 from the lower socio-economic group. Each subject was measured for 10 tomato type variables. The results showed that upper socio-economic conditions had a better physical development and better nutritional and hygienic status.
Mathew (1988) conducted a study on 3000 boys from three distinct ethnic groups found in Uttar Pradesh and Bihar with age ranging from 12 - 16 years, the subjects were tested to determine growth in standing height, sitting height, weight, upper arm girth, chest girth, thigh girth and calf girth and motor fitness was measured by AAHPER youth Fitness Test. To determine the differences between the means of different ethnic groups the two-way analysis of variance was applied and to find out the correlation between the motor fitness and selected growth variables, co-efficient of correlation was employed. The significant difference obtained in upper arm girth, calf girth, chest girth and weight and no difference (significant) observed in standing height, thigh girth and sitting height; however, no relationship was found between any growth and motor fitness variables.

Greendorfer (1977) investigated the socio-economic variables that influence female participation in various types of teams, individual land mixed sports she hypothesized that sport type would be a function of socio-economic status. The analysis of the social class data which included two measures education and occupation revealed
that team sports participants were identified with lowed socio-economic identified with higher socio-economic status.

**Rita (1973)** studied physical activity and its possible link with progress among the children. She brought out a clear-cut relationship with physical activity and progress of children. Developmental norms project sponsored by the NCBRT represents a nationwide attempt of child development. The study attempted to make fairly representative of entire population belonging from rural and urban area. The researcher faces various challenges to grow the interest among the children. The challenges will be more felt in the area of guidance, needs, appropriate curriculum, effective methods of teaching, and developmental pattern etc. The motor developments of pre-school children had been effected as per the focus of the study from the wide range of the problems of child development.

**Pramlla (1970)** conducted an intensive study of the mental and motor growth of Indian babies. It aimed to gather normative data on the development of Indian babies. Under this project, a testing program of six years duration was launched. A batch of associate investigators was trained for test administration and data collection. The data collection involved both longitudinal and cross-sectional
testing of babies from one month to thirty months in urban and rural areas. The utilized data was collected from 5,884 children. For measuring mental and motor growth, scales were specially constructed for the use of this study. In the study, attempt has been made to link mental and motor growth with the degree of urbanization and socio-economic status of the students. This is one of the important studies conducted on the mental and motor growth of Indian babies utilizing longitudinal and cross sectional sampling designs.

**STUDIES RELATED TO POVERTY/CASTE SYSTEM**

*Sahu (2016)* conducted a study to investigate the difference of general Physical Fitness components and Anthropometric variables between B.P.L and A.P.L level physical education students. In 60 male B.P.Ed students from P.G.G.I.P.E Banipur North 24 pgs, West Bengal was selected as the subjects for this study. The age of the subjects range between 22-25 years. Height, Body Weight, B.M.I for anthropometry and AAHPERD physical fitness test (Components are- Pull Ups, 50 Yards Dash, Shuttle run, Standing Broad Jump, Bent Knee Sit Ups, 600 Yards run and Walk tests) were considered as the variables of the study. ‘t’ test was applied to calculate the collected data at 0.05 level of significance. The result showed that there was no significant difference between the
two categories of physical education students in Anthropometric variables but significant difference found in Physical Fitness components between A.P.L and B.P.L category.

Faldu (2016) conducted a study to compare the Physical Fitness of below and above poverty line family’s school male students. With the assistance and help of the experts from the field of Physical Education, Sports and on basis of previous researches in this area, a comprehensive and suitable AAHPERED Youth Physical Fitness Test was selected for Physical Fitness assessment. 403 from below and 217 from above poverty line family’s school male students were randomly selected from twenty one schools. The average age of the subjects were eighteen years, ranging from 17-20 years. The obtained Physical Fitness score of below and above poverty line family’s school male students were analyzed by using group statistic and independent samples test with the help of SPSS-11 software. The Physical Fitness Components score compared among below and above poverty line family’s school male students and results found that there is significant mean difference in Standing Broad Jump and Sit-ups, where as there is no significant difference in 50 yard dash run, Pull-ups, Shuttle Run and Distance run.
Ferguson et. al. (2015) conducted a study to evaluate the outcomes of a nine week health promotion program (HPP) on the motor performance and fitness levels of children (6 to 10 years) with and without DCD attending a low-income primary school. The HPP was designed and implemented by undergraduate physiotherapy students using guidelines from the World Health Organization School Health Initiative and their physiotherapy curriculum. Children with DCD (n = 22) and a control group without DCD (n = 19) participated in the evaluation. Motor skill, functional strength, aerobic capacity, and anaerobic power were measured at baseline and after nine weeks. Both groups of children improved on all measures at the conclusion of the HPP. Children with DCD showed greater improvement than the control group in motor performance and the control group showed greater improvement on one of the anaerobic fitness outcomes. Study concluded that school based HPP focuses on increasing opportunities for physical activity may be effective in improving motor performance in children with DCD and can increase fitness levels in general.

Jin & Jones-Smith (2015) conducted a study to assess the association between family income and children’s physical fitness level and obesity prevalence for 8 racial/ethnic groups. Total 1,617,400 data was collected
from 5th, 7th, and 9th grade children who took physical fitness programme from the year 2010 to 2012 in California. Multiple linear and log-binomial regressions were used to test whether physical fitness level or obesity (as indicated by eligibility for National School Lunch Program) was associated with low family income prevalence. Differences were tested by race/ethnicity while adjusting for age and sex. Fitness score was measured on a scale from 0 (least healthy) to 6 (most healthy). Average fitness score was 4.45 (standard deviation, 1.47). Prevalence of obesity was 20.3%, and 56% of children were classified as having lower family income. Lower family income (vs higher) was associated with lower fitness score (coefficient = −0.57; 95% confidence interval [CI], −0.62 to −0.53). Lower-income children had higher prevalence of obesity (relative risk = 1.81; 95% CI, 1.72–1.89) compared with higher-income children. These inverse associations were seen among American, Indian, Asian, Pacific Islander, Filipino, Hispanic/Latino, African American and white children and among children who were identified as being of 2 or more races/ethnicities. Children with lower family incomes tend to have less healthy physical fitness status and have higher risk of obesity than children with higher family incomes. This information can be used to
help set policies and provide programs aimed at improving fitness and decreasing obesity risk among low-income children.

**Cohen et. al. (2014)** conducted a study to examine the associations between fundamental movement skill competency and objectively measured moderate to vigorous physical activity (MVPA) throughout the school day among children attending primary schools of low-income communities. Eight primary schools from low-income communities and 460 children (8.5 ± 0.6 years, 54% girls) were involved in the study. Children’s fundamental movement skill competency (TGMD2;6 locomotors and 6 object control skills), objectively measured physical activity (ActiGraph GT3X and GT3X + accelerometers), height, weight and demographics were assessed. Multilevel linear mixed models were used to assess the cross sectional associations between fundamental movement skills and MVPA. After adjusting for age, sex, BMI and socioeconomic status, locomotor skill competency was positively associated with total ($P = 0.002$, $r = 0.15$) and afterschool ($P = 0.014$, $r = 0.13$) MVPA. Object control skill competency was positively associated with total ($P < 0.001$, $r = 0.20$), lunchtime ($P = 0.03$, $r = 0.10$), Fundamental movement skills and physical activity among children living in low-income communities: a cross sectional study recess ($P = 0.006$, $r = 0.11$) and afterschool ($P = 0.022$, $r = 0.13$) MVPA. It has been
concluded that Object control skill competency appears to be a better predictor of children’s MVPA during school based physical activity opportunities than locomotor skill competency. Improving fundamental movement skill competency, particularly object control skills, may contribute to increased levels of children’s MVPA throughout the day.

_**Upasanaba (2013)**_ conducted a study to compare newborn health outcome between below poverty line (B.P.L.) and above poverty line (A.P.L.) families. History and physical examination of total 60 newborns were done thoroughly and they were divided in two groups, B.P.L. and A.P.L. groups. Data was analyzed statistically. Number of low birth weight (L.B.W) babies is significantly higher in B.P.L. group as compared to A.P.L. group. B.P.L. mothers visited hospital during their antenatal period lesser number of times than A.P.L. mothers and this difference was statistically significant. Present study shows that 37% newborns of B.P.L. group and 10% newborns in A.P.L. group are L.B.W. It is concluded from the present study that poverty increases the incidence of low birth weight in newborns. Also poverty negatively influences antenatal care practices. It’s evident that by controlling poverty we can control adverse newborn health outcomes and thus we can improve maternal as well as newborn health.
Nicholas et. al. (2011) conducted a study with two purpose. The first purpose of this study was to examine low-income parents and their children's perceptions about the benefits associated with participation in youth sport. The second purpose was to examine parents perceptions of the challenges associated with providing their children sporting opportunities. Interpretive description qualitative approach was designed. Thirty five individual interviews were conducted with parents and children from 17 low-income families. Data were transcribed and subjected to interpretive description analytic techniques. Analysis produced three main findings: (1) Parents and children reported that sport participation was associated with a range of personal and social developmental benefits; (2) Parents reported that several remaining barriers and constraints restricted the extent to which their children could engage in sport and gain sustained developmental benefits; and (3) Parents offered several possible solutions to the problem of engaging their children in sport. Findings demonstrate the value and importance of providing sport to children from low-income families, but highlight that increased efforts are needed to overcome remaining barriers and sustain long term participation and benefits.
Gupta et al. (2007) stated in his study, Child poverty in Canada is a significant public health concern. Because child development during the early years lays the foundation for later health and development, children must be given the best possible start in life. Family income is a key determinant of healthy child development. Children in families with greater material resources enjoy more secure living conditions and greater access to a range of opportunities that are often unavailable to children from low-income families. On average, children living in low-income families or neighborhoods have poorer health outcomes. Furthermore, poverty affects children’s health not only when they are young, but also later in their lives as adults. The health sector should provide services to mitigate the health effects of poverty, and articulate the health-related significance of child poverty, in collaboration with other sectors to advance healthy public policy.

Sullivan & Carter (1985) conducted a study where in intervention 8 week program taught nutrition and aerobic exercise to obese, low-income black mothers of children under 3 years. A reduction in risk factors for cardiovascular disease in the mothers was anticipated. Culturally adapted aerobic dancing was well suited for exercise. It was assumed that children would ultimately adopt their parents' changed life style. The program
demonstrated a significant reduction in heart rates at rest, but no significant change in heart rates with stress. A significant reduction in body fat percentage was measured, whereas overall weight reduction was not significant. The consumption of vitamin C, protein, fat, and sodium was reduced. Intake of calcium, iron, carbohydrates and vitamin arise significantly. The results indicate the potential effectiveness of such dual intervention programs.

**SUMMARY OF THE LITERATURES**

The review of the literature helped the investigator to spot out relevant problems and parameters. Further the literature helped the investigator to form the suitable hypothesis leading to the problems. The latest literature also helped the investigator to support his findings with regard to the problem. Further the literature collected in the study has also help the research scholar understanding in the similar areas. The collected reviews were presented under the three headings such as studies related to fitness (22). Studies related to Socio-economic Status, Urban and Rural etc. (29). Studies related to Poverty/Cast System (11).