CHAPTER II

REVIEW OF LITERATURE
A study of relevant literature is an essential step to get a full knowledge of what has been done in the past with regard to the problem under investigation. Such a review brings about a deep and clear perspective of the subject matter.

Aggarwal\(^1\) is of the opinion that "the literature in any field forms the foundation upon which all future work will be built."

In order to support the presentation and analysis of the study the research scholar collected research reference materials from various books and journals and has presented in this chapter. The literature which is presented in the following is grouped into:

(A) PHYSICAL FITNESS

Strong\(^2\) has conducted a research under the direction of Louis Alley and James Strad. The purpose of the study was to determine the effect of six motivating conditions on the performance of sixth grade children on seven physical fitness tests. Data were obtained from three administers of

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fitness tests. Data were obtained on seven tests the final two of which were conducted with the subjects of the experimental groups performing under one of six motivational conditions which were found to be effect than the other and motivation improved boys. The validity of the measures of physical fitness tests depended upon the motivating conditions under which the test were administered.

Shukla and Sharma\(^3\) have carried a study on the relationship of physical fitness measures with socio economic status and age of sports men. The study has been undertaken on 138 sports men who are represented the state of Uttar Pradesh in different sports events. Their age ranged from fourteen to twenty two years. For the purpose of physical characteristics height and weight were also taken into consideration. AAHPERD test studied to find out physical fitness. For the purpose of analysis the group was further divided into three age groups. “A” Fourteen to sixteen years, “B” seventeen to nineteen years and “C " over nineteen years. “t” test applied to find out differences in each category. The results were related that the advancement of physical characters such as height, weight also improve, socio-economic

difference did have an effect on physical fitness of sportsman, the athletics belonging to higher socio economic status group were significantly higher on different. Physical fitness components as compared to lower the socio-economic status group.

Fabricius\(^4\) investigated a study on physical fitness development on fourth grade boys and girls (\(N = 162\)) who participated in a regular elementary school physical education curriculum elected Calisthenic physical fitness. In each class period 3 minutes 9 seconds were spent on Calisthenics. The classes were arranged four times per week. The results showed that both groups improved significantly in physical fitness in the six month period. The experimental group having the added Calisthenics improved significantly more than one control group.

Lane\(^5\) conducted a study using the AAHPERD youth physical fitness test and the Hamilton motor ability test on sixty nine girls aged fourteen years. Before and after a planned physical fitness programme, the group improved on both tests and the correlation between physical fitness and motor ability was higher after the planning fitness programme.


\(^5\) Lane George, *The Relationship between Physical Fitness and Motor Ability Before and After a Physical Fitness Programme for Girls*, (Completed Research, 1968), P. 67.
Bucher and West\textsuperscript{6} conducted study of the physical fitness status of boys and girls of 17 to 19 years age. A study was conducted by the University of Michigan for the United States Office of Education to determine the physical characteristics of children and youth from 1965 to 1975 utilizing the AAHPERD youth fitness test. These test result were compared with a similar study for the period between 1958 and 1965.

Tillman\textsuperscript{7} in his study selected 386 high school Junior and senior boys and administered a physical fitness test. The boys who finished in the upper fifteen percent on the test were compared with the boys who were in the lower fifteen percent, significant personality difference was found in the second phase of his study. The low physical fitness group was divided into a control group and an experimental group. A nine month physical fitness programmes for the experimental group resulted in a significant gain in physical fitness.

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\textsuperscript{6} Bucher Charles A. and West A., \textit{Fitness College and Life},
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\textsuperscript{7} Tillman Kenneth, \textit{Relationship Between Physical Fitness and Selected Personality Traits}, (Research Quarterly, 36 : 6, 1965), P. 70.
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According to Jackson, physical educators have strong belief that exercise is important to maintain good health. Today degenerative diseases (Cancer, heart disease, strokes) have replaced communicable disease (Tuberculosis, pneumonia) as the leading cause of death in America. The cardiovascular disease number one in the United States and other highly industrialized countries.

Shey compared the physical fitness index of spring field college USA male freshman with the academic success of these students for the first term of their freshman year. This comparison showed a consistent and positive relationship.

He further conducted study on physical fitness. The research councils of AAHPERD conducted study on health related physical fitness of children in America. The test manual included the test item norms and general principles of exercise participation. This allowed the teacher to diagnose the student weakness and to provide a scientifically sound and individualized physical fitness programme. A major advantage of the AAPHERD health related fitness is that it could be used with children in grade one through twelve where the range for the AAPHERD youth fitness test is only for grade five to twelve years.


(B) HEALTH RELATED PHYSICAL FITNESS

A study on construction of norm for agility co-ordination test for Tamilnadu college men players was done by Baskaran\textsuperscript{10}. Subjects were selected for the study at random from sixty three colleges in various districts of Tamilnadu in basketball, football, hockey and volleyball.

In AGCO test (agility co-ordination test) as per the qualitative grading for the constructed norms, it was evident that 140 players out of 1085 (12.9\%) were poor, 259 players (24.60\%) good, 140 players (12.9\%) very good, and none to them were in the excellent group.

Kesavan\textsuperscript{11} has undertaken a study on construction of norms for health related physical fitness test for high school boys in Dharmapuri, Salem, Perior and Nilgiris Districts. Two thousand and thirty eight students were selected as subjects for this study. In sit – ups as per the qualitative grading for constructed norms, 298 students were poor, 345 students were fair, 585 students were average, 499 students were good, 265 students were very good and 51 students were excellent.


A physical fitness norms for school boys of eleven through sixteen years of age of South Arcot and Trichy District, and critical analysis of the selected physical variables 7300 boys was carried by Dhandapani. He selected arm / shoulder muscular endurance, Abdominal / hip muscular endurance, agility, explosive power of legs, speed and circulatory / respiratory endurance variables. The Percentile scale was used to construct norms. He could find poor performance in school boys in the above variables.

In this study Muthusamy selected the school girls between the age of 13 and 15 years in the Union Territory of Pondichery. AAHPERD youth fitness tests were applied. Mean, and standard deviation and hull scale were computed for the construction of norms. He found that, out of hundred girls of 13 years of age, 64 were poor, 10 were good, and 3 were excellent. In 14 years of age as per the qualitative grading for the constructed norms, 25 were poor, 34 were good, and 7 were excellent. In 15 years of age as per the qualitative grading for the constructed norms, 27 were poor, 28 were good, and 4 were excellent.


School girls of the age ranging from 12 to 15 years the physical fitness norms were studied by Rajasree\textsuperscript{14}. The selected variables were shuttle run, sit-ups, standing broad jump, sit and reach and vertical jump. Mean, standard deviation and hull scale were employed for statistical analysis. In shuttle run as per the qualitative grading for the constructed norms, 71 were excellent. In sit-ups 7 were excellent, in standing broad jump 3 were excellent, in sit and reach 5 were excellent and in vertical jump 19 were excellent.

Three hundred players were selected as subjects at random from 3 districts in Tamil Nadu for the study by Inbaraj\textsuperscript{15}. Data were statistically analysed with the help of mean and standard deviation and converted into the hull scale norms score. As per the qualitative grading for the constructed norms in agility co-ordination test 35 subjects were poor 68 fair, 100 average, 66 good, 23 very good, and 8 excellent.

\textsuperscript{14} Raja Sree, \textit{Construction of norms for Physical Fitness Among School Girls Age Ranging from 12 to 15 years}, (Unpublished Master of Philosophy Thesis, Alagappa University, Karaikudi, 1995), P. 50.

On construction of norms for health related physical fitness tests for high school boys in Pasumpon Muthuramalingam and Pudukkottai Districts, an investigation was undertaken by Murugapparajaa. The influence of selected Calisthenic exercise from 2000 subjects with the help of mean and standard deviation disclosed that in sit-ups tests, 172 subjects average, 324 fair, 948 average, 260 good, 220 very good and 76 excellent as per the qualitative grading for constructed norms. In nine minute run and walk, 253 subjects were poor, 492 fair, 569 average, 342 good, 256 very good and 88 excellent. In body composition, 328 subjects were poor, 500 fair, 491 average, 370 good 196 very good and 115 excellent.

Surjit Singhb conducted a study on establishing norms for physical fitness of primary school children of Punjab and Haryana. Data was collected on school children in Punjab and Haryana of age group 6 – 11 years using Glover (1962) physical test battery. To assess physical


fitness of elementary school children of age groups (6 – 11 years), mean, standard deviation was calculated and to determine the difference in selected variables among five levels one – way of analysis ‘t’ ratio. Further, scheffe test of post hoc mean Pair Difference was applied to see significance of difference in pairs. Finally, the percentile scale, T-scale and Hull-scale were computed for norms for various age groups and in different variable of physical fitness. The following conclusions were inferred. They are:

Varied performance in standing Broad jump, shuttle run, sit - ups and seal crawl.

Varied performance in standing broad jump, shuttle race, situps and seal crawl.

Varied performance in standing broad jump, shuttle race, sit—ups and seal crawl.

(C) NORMS FOR ATHLETIC EVENTS

Gurusamy Inbarajan\(^\text{18}\) in his study on construction of norms in selected athletic events of 100 mts, 1500 mts, long jump and shotput for under - Graduate physical education men students of 381 in Tamilnadu.

In 100 mts as per the qualitative grading for the constructed norms, 53 subject were poor, 78 good, 54 very good and 1 excellent; in 1500 mts as per the qualitative grading for the construction of norms, 58 subjects were very poor, 72 fair, 117 average, 71 good, 58 very good, and 5 excellent; in long jump 45 subjects were poor, 113 fair, 103 average 50 good 46 very good and 16 excellent; in shot put, out of 381 subjects 62 were poor, 112 fair, 95 average 35 good, 50 very good and 27 excellent.

Ranjit\textsuperscript{19} selected 115 physical education students and selected 100 mts, 1500 mts, long jump and shot put as variables through mean, standard deviation and hull scale statistical techniques, he found that in 100 mts as per the qualitative grading for the constructed norms, no student was poor, 30 good; in 1500 mts there were students with and 32 good; in long jump 27 subjects were poor and 13 good; in shot put 15 subject were poor and 17 good.

The AAHPERD youth fitness test variables for physical education professional college selecting 1064 and 460 men and women students

respectively in Tamilnadu was conducted by Helina\textsuperscript{20} variables selected were shoulder – strength, abdominal strength, agility, power, speed and endurance.

For finding the shoulder strength the abdominal strength and the agility, the pull ups, sit ups and shuttle run his were studied respectively.

For measuring speed 50 yards test and for finding endurance 600 yards run / walk tests were applied.

Amusa and Udon\textsuperscript{21} conducted a study to find out physical fitness status of the university of Badan female members of staff especially as it relates to the level of participation awareness of the health problem due to in activity, early exposure to the influence of physical exercise, economic status and the influence of education. The result indicated that half of the respondents were not engaged in any form of physical exercise since after leaving school. However, 75.50 per cent indicated that they had early exposure to physical exercise. The level of education as well as economic factor contributed to some of the samples continued participation in physical exercise.


\textsuperscript{21} Amusa L. U. and Udon L.U., \textit{Physical Fitness among University of Ibadon Female Member of Staff}, (SNIPES, 8 : 3, 1985), P. 37.
Daniel\textsuperscript{22} conducted a study selecting 500 students an construction of norms for selected athletic events namely 100 mts, long jump and shotput for high school boys in Tiruvananthapuram revenue district in Kerala. Data collected were statistically analysed with the help of mean and standard deviation. The raw scores were converted into hull scale norm score. In 100 mts as per the qualitative grading for the constructed norms 34 sample students were poor, 40 fair, 157 average, 205 good, 63 very good and 1 excellent. In long jump as per the qualitative grading for the constructed norms 7 sample students were poor, 83 fair, 162 average 165 good, 73 very good and 10 excellent. In shotput as per the qualitative grading 18 subjects were poor, 75 fair, 136 average, 205 good, 52 very good and 14 excellent.

Zuti and Corbin\textsuperscript{23} conducted a research on physical fitness norms for college freshman. They took 3000 freshman a Kansas status university with in the age from 17.6 to 19.5 years. The test were conducted for strength tests, flexibility, body composition, cardiovascular


fitness. The results appear to indicate that the college freshman at Kansas state university were above average and the standards were appropriate for their use at national level.

Jackson\textsuperscript{24} conducted a study on 8 to 25 years females with AAHPERD health related fitness test to measure back and hamstring flexibility. The measurement included the sit and reach test and passive hamstring flexibility. The correlations between the sit and reach test and total back flexibility were low. These findings indicate that the sit and reach test has moderate criterion related validity when used as an assessment of hamstring flexibility in the health related fitness.

**LITERATURE ON NORMS FOR GAMES**

Gupta\textsuperscript{25} has conducted study to compute norms and validation of Mc Donald soccer test on 250 male soccer player’s playing ability in Tripura. First division soccer league was measured on 250 male soccer players who played in the first division tournaments registered in Tripura State football association using the Mc Donald test scores, mean and

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standard deviation were calculated. The computed mean and standard deviation were 16.25 and 2.01 respectively. Based on this mean and standard deviation, “t” scale was computed and norms were constructed.

Aging 18 years and 25 years from the District Head Quarters in Tamilnadu 60 Goal keepers were selected to study physical, physiological and Anthropometrical variables by Jason\textsuperscript{26}. In agility (4 x 10 yards shuttle run) as per the qualitative grading for the constructed norms, 7 were poor, 15 good and one was excellent.

Toni Paterson\textsuperscript{27} conducted a study to establish the prediction of basketball performance using psychomotor cognitive and anthropometric measures. Female members (43) of the top 4 teams in 1979 Missouri small college basketball tournament served as the subjects. The contributions of GPA anaerobic leg power, fifteen yard dash, thirty yard dash, total body R.T.,TRT, LT and WT to basketball performance was determined by a specially designed formula by H.K. Key (r = .388) was the only sig (P.05) predictor. The 15 yards dash total body RT and power were next. The R for the top variables was .56 (PL .05).


\textsuperscript{27} Toni Paterson, \textit{The Prediction of Basketball Performance using Psychomotor Cognitive and Anthropometric measure}, (Completed Research in Health Physical Education and Recreation, 1980), P. 100.
Alex\textsuperscript{28} conducted a study on computation of norms for the playing ability among college football players. He had computed the norms for kicking skill test based on the hull scale for 150 players. It was found that 43 players were below average and 107 players were above the average level. Thus it was proved that the performance of the warmer soccer kicking skill test for college players was good.

Espenschade\textsuperscript{29} tested 1600 California school children of 10 to 18 years, to determine the relationship between performance, age, height and weight. In this study she found change in performance with age was seen both in boys and girls pull-ups and sit-ups had correlation co-efficient of 0.31 and 0.19 with age respectively mean score of boys at each succeeding age was significantly superior to the proceeding ages 10 to 17 in dash broad jump and throw 10 to 13 years in sit-ups and 12 to 27 years in pull ups when the researcher repeated this study for different sample. She found increased mean scores in broad jump, throw and pull-ups with age up to 18 years.

\textsuperscript{28} Alex V., Computation of norms for the playing ability among College Football Players, (Unpublished Master’s Thesis, Alagappa University, Karaikudi, 1990), P. 50.

\textsuperscript{29} Espenschade, Relationship between Physical performance of School Children and Age, Weight and Height, (Research Quarterly, 34, 1963), P. 144-153
Frank\textsuperscript{30} conducted a research study on some physical fitness component and sports skills of rural, urban and parochial school experiences upon achievement in certain aspects of physical fitness and sports skills. He tested 85, 9th grade boys (27 with rural background and 20 with parochial school background) for speed, power, muscular endurance and skills in different games. The study of the total score showed that boys with rural, parochial and urban experiences did not differ in physical fitness but boys from urban and parochial schools were superior in sports skills.

The norm scales should be sufficiently sensitive to make a discrimination between the scores of the different subjects. The final choice of the norm scales constructed in the present investigation has been trifold.

The hull - scale (based on a ± 3.5 sigma distribution)

The percentile scale

A progressive index scale

\textsuperscript{30} Frank Siwert, \textit{A comparison of some components of Physical Fitness and Sports Skills of 9\textsuperscript{th} Grade Boys of Rural, Urban and Parochial School Background}, (Completed research in Health Physical Education and Recreation, 5, 1963), P. 15.
According to Borms, the hull scale has been preferred over the other sigma because this scoring scale is more applicable to realistic testing situations, where great variations are present.

SUMMARY OF THE LITERATURE

A substantial change in secondary programme is necessary. The programmes must provide information about exercise and wellness. They must foster a positive attitude towards active lifestyle. The secondary physical education must take the students to a physical oriented programme and continue to foster knowledge and appreciation of the role of exercise and activity in health.

In this study, 30 studies were collected 9 literatures for performance related physical fitness and 8 health related physical fitness; 7 for the norms for athletic events and 6 for construction of norms for various sports and games.