INTRODUCTION

In this modern world physical fitness became a necessity of every one's lifestyle. With the rapid development of sports to a highly organized and immensely competitive social phenomenon, there has emerged a clear-cut classification of sports on the basis of goal and intensity of participation namely recreation sports, health conditioning and competitive sports.¹

The strength of a nation mainly depends upon the health of the people. As Swami Vivekananda said that prosperity of the nation depends on steel nerves, iron muscles and diamond mind citizens. A healthy child is a brick in the wall of the nation. Generally speaking, performance in games and sports depends on speed, strength, power, agility, cardiovascular-respiratory endurance and neuromuscular co-ordination. During play, the large muscles contract and relax to the maximum extent by which the internal organs results in developing agility, speed, cardiovascular endurance, vital capacity and strength. So, exercise is the basic necessity for all individuals to build the physical fitness.

Now a days more individuals, particularly boys and girls are attracted by sports activities and increasing the number of nations that are represented in the sports arena are increasing. The prevention and curative health measures have become more successful throughout the third world-war, and millions of teenagers should have a chance to enjoy sports.\(^2\) In the last few decades sports have gained tremendous popularity all over the globe. The popularity of sports is still increasing as a pace, and one sees that the number of sports held in Olympic games have been steadily increasing. In addition to Olympic games indigenous sports have also became popular in each country. Thus, sports have become an important social and cultural activity of the modern world which is being given the right place it deserves by the nations and societies.

Sports serve vital, social and cultural functions, the importance of which can hardly be exaggerated. Sports helps in the all round development of human personality.

**FITNESS**

Ability to function normally without undue fatigue enables to enjoy leisure time activities without debilitation physical stress Carl Gabbard.\(^3\)

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The physical fitness of human being is a must for his existence. In other words, physical strength is needed to perform many tasks. So, fitness is a prime requisite to get an optimum healthy in life. A sound mind and a sound body are man's most precious possessions.

**Fitness in Past**

From time immemorial, human ability to perform any physical test was different from man to man. Fitness was a natural talent present in olden days with every man as a matter of existence. If he was not fit, he faced dangers of extermination from his environment of wild life. Self-defense was the primitive factor which forced man to be fit, when he lived free from the threats in his life, he needed food for life. He had to earn his food which warranted his fitness. If he was not fit, he couldn't hunt and eat. To avoid depending on another, for food, man learnt to be fit for his necessity existence and survival.

**Fitness in Present**

Today man is indulging in activities to keep him fit, because his nature of work does not give him much scope for physical exertion. Most of his works are done by a machine but he has to simply sit in just, to co-ordinate with the work done by it.
Fitness in Future

Through the invention, advent and use of robots, man's part in work would be completely brought to nothing. He is going to sit in his chair for a longer time, and the danger of inactivity is definite to affect him. Before he is crippled due to inactivity, the whole system of physical education throughout the country must be revised, redesigned and reintroduced to suit every one in the society.

Hook states\(^4\) that "The good bigman will always beat the good little man". The statement would be even more true if it reads. "The good strong man will always beat the good weak man".

PHYSICAL FITNESS

According to Bucher\(^5\) Physical fitness is the ability of an individual to live a full and balanced life. It involves physical, mental, emotional, social and spiritual factors; and the capacity for their whole some expression.

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In other words of willgoose⁶, Physical fitness is the capacity for an activity, which must be enough to perform the given task.

NEED OF PHYSICAL FITNESS

The human body was created for movement to walk, dance, jump and play. With proper fitness, one can relieve much of this unnecessary pain and unpleasant complications. It is almost impossible to go through an entire day without being exposed to something that involved physical fitness. A nation crich pre-occupation with fitness has affected every segment of our society.

COMPONENTS OF PHYSICAL FITNESS

The purpose of physical fitness is to create a consciousness and enthusiasm amongst people; and to stimulate their interest for physical welfare which helps them to have better and more healthful living.⁷


These are the components of physical fitness are expressed as:

- Speed
- Strength
- Explosive Power
- Cardio Vascular Endurance
- Muscular Endurance
- Agility

**METHODS OF DEVELOPING FITNESS**

To develop fitness there are so many training methods adopted in the sports and games. They are circuit training, fartlek training, interval training, pressure training, weight training and plyometric training.

The circuit training is a method of fitness training that aims to increase muscular strength and endurance and respiratory endurance. In this circuit training, there are usually 5 to 15 exercises. These exercises are carefully selected according to their effect on the performance capacity. Normally, the sequence of exercises is such that different muscle groups are exercised in rotation. The place or station at which the exercises to be done are arranged in circle.  

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The pressure training is a device for intensifying the training of a particular skill by rapid sequence of skill. The player is put under extreme pressure and work is concentrated solely on the skill under review. This training is an excellent method of stimulating a player's weakness or developing his abilities.9

If a player put under pressure while he is training, it gives him confidence so that in a match somewhat similar situations arises, he can tackle it and face it creditably. The player develop strength, stamina and quick reactions.10

The term 'Plyometric' first appeared in the literature of sport methodology in 1966, in Zaciorskij's work 'Fiziceske Kacestava Sportsmena'. It is derived from two etymons 'π λ ε τ ρ υ ν' 'and 'μ ε τ ρ ο ν' meaning 'greater, longer, wider' and 'to measure, to appraise, to compare' respectively, Zaciorskij used this term plyometric to indicate the greater tension expressed by a group of muscles when the working programme involves a quick stretching phase followed by an equally quick contraction.11

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10. Ibid., P. 204.
According to wilt\textsuperscript{12} the word plyometric is derived from the Greek word ‘Plethyein’ which means ‘to increase’ and isometric means ‘same length’.

Fartlek\textsuperscript{13} is Swedish word meaning “Speed play”. In stricter sense it is a variation of variable pace method. In Fartlek the change of pace or speed is not pre-planned. The sportsman changes the speed on his own during the activity according to the terrain, surrounding and his feelings. Therefore, this method requires more self discipline in order to be effective. In Fartlek training the heart rate fluctuates between 140-180 beats/minute. The total duration of volume ranges from about 15 minutes to 1 hour.

Interval method\textsuperscript{14} is perhaps the most versatile method for improving endurance of various types. In interval method, the exercise is done at relatively higher intensity with intervals of complete recovery. In interval training the heart rate goes up to 180 beats/minute after this there should be a recovery period and when the heart rate comes down to 120-130 beats/minute.

\begin{flushright}
12. Fred Wilt, Plyometrics What it is – How it works.
(The Athletic Journal May, 1975), P. 76.
14. Ibid.,
\end{flushright}
Weight training\textsuperscript{15} is concerned with improving condition of the body in terms of strength, power and endurance, through the use of repetitive movements against a resisting load of same kind.

Weight training is not only a fitness activity, but builds resistance to injury. This training is also used to help an injured sports person to recover from injury more quickly. Weight training strengthens the weakened injured muscle to their former state.

Development and maintaining physical fitness requires a vigorous effort, by the total body. The strength muscular endurance, flexibility and cardio respiratory endurance are the basic components of fitness. These four characteristics are all equated with a healthy functioning of human body.

NORMS

Phillips and Harnak\textsuperscript{16} define norms as the achievement level of a particular group to which obtained scores can be compared.

\begin{itemize}
  \item \textsuperscript{15} Yograj Thani: Weight Training in Sports
  \hspace{1cm} (Sports publication, Delhi, 1996), P.10
  \item \textsuperscript{16} Philips Allan and Harnax James, Measurement of Evaluation in Physical Education, (New York: John wily and Gong, Inc.,1979) P. 70.
\end{itemize}
According to Barrow Mc Gee\textsuperscript{17} a norm is a standard point of reference that can provide a basis for judgment. Norms are used to interpret relative standing to compare scores or groups and either to combine or average the scores.

Norm is a scale that permits conversion from a raw score to a capable of comparison and interpretation. If a test is accompanied by norms, its usefulness is enhanced. It's characteristic of average and range are known. The prepared norms we prepare should not be accepted at face value. A raw score is needed to the point of comparison and interpretation. Norms are representative of some large population sufficient cases alone do not make good norms but coupled with proper sampling which provides a symmetric distribution. If the performance of a group is not similar in large and average to the normative group, then the norms are not appropriate and should not be used for interpretive purpose.\textsuperscript{18}

The norm scale should be sufficiently sensitive to make a discrimination, between the scores of different subjects. The final choice of the norm scale constructed in the present investigation has been based on hull scale.

\textsuperscript{17} Barrow Herold M. and McGee Rosemary, \textit{A Practical Approach to Measurement in Physical Education}, (1971), P. 45.

The hull scale has been preferred over the sigma because this scoring scale is more applicable to realistic testing situation, where great variations are present.

The norm is a standard point of reference that provides a basis to judgment. It is derived score that is determined from raw scores obtained by a specific group on specific test. A norm is standard, against which students to be judged. Whenever norms are determined for a given groups of people, half of the people will fall above the middle of the distribution and half of the people will fall below.

There is no inherent value attached to any given norm sample, whose norm has been determined. Any judgment made about the norm is by the person using the norm.¹⁹

**USE OF NORMS**

The norms are developed by transforming the raw scores of a given norm group into some type of desired scores, so that they may be interpreted more easily. Raw scores can be converted into percentage correct scores in which the score actually obtained on the test is divided by the highest possible test scores. This type of conversion is useful for tests of another skill and abilities but cannot be used for comparison among the tests.

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CONSTRUCTION OF NORMS

The norm scales to be accepted as valid and practical criteria for evaluating the individual physical fitness tests must be accompanied by the norms. When the norm scales are being constructed one must consider the following principles of practical and education.

- Sampling Technique
- Equivalency
- Progressiveness
- Sensitiveness

CRITERIA FOR SELECTING NORMS

Though, there are many tests to measure the ability of individual, attempt should be made to construct built in norms. They are very useful in classifying the students in particular activity according to their ability. They are also useful to find the needs weaknesses of the student further, they are and also used to grade the students.

Educationists are interested in the function of developing the norms and their measurement. One way of knowing how much a student has achieved is to examine, his score in relation to the scores of others in the same test. In essence, a student's score is compared to other student
scores. Here, some students are expected to perform better than others. This function identifies the test as norm reference.20

The purpose of this study is the construction of norm for performance related physical fitness for College women students in Kadapa District. Very little research has been done in this area which motivated the investigator to pursue the present study.

OBJECTIVES OF THE STUDY

To help girls move in skillful and effective manner in all the selected activities in which they engage in the physical education programmes.

To develop an understanding and appreciation of movement in girls and youth so that their lives will become more meaningful purposive and productive.

To develop an understanding and appreciation of certain scientific principles concerned with movements.

To develop better inter personal relationship through the medium of games of sports.

To develop various organic systems of the body so that they will respond in a healthful way.

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STATEMENT OF THE PROBLEM

The purpose of the study was to construct the norms for youth physical fitness among the college women students in Kadapa District.

SIGNIFICANCE OF THE STUDY

➢ This study would help to estimate the youth Physical fitness of college women students and their age was 17 years.

➢ The computed youth physical fitness norms serve as a guide for the other college to assess their physical fitness status.

➢ On the basis of the result of this study, proper physical education programme can be planned effectively for college women.

➢ It will provide physical education teacher and coaches the norms to grade their women students on the basis of their performance in the skill related physical fitness test.

➢ This will help us to compare our grading with other district woman fitness grading.

DELIMITATION

➢ The study was covered only 360 college women students at the age of 17 years in Kadapa District.

➢ The study measured the youth physical fitness test.
LIMITATION

The study has the following limitations:

> The study was conducted only on college women students; and the motivation level of the subjects at the time of testing was not controlled.

> Certain factors like habits, daily routine work, atmosphere, temperature, diet etc, might have influenced the result which were not considered in this study.

> The subjects for the study do not come from the same social, economic and cultural background.

DEFINITION OF THE TERMS

Physical Fitness

According to Kennedy, Physical fitness is the utilization of excessive calories by a cardiovascular and muscular process bringing the body to optimum efficiency.

Clarke\textsuperscript{22} defined the term physical fitness as: "Physical fitness is the ability to carry out daily tasks with vigor and alertness, without undue fatigue and with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies".

\textbf{Speed}

Speed is defined as the capacity of the individual to perform successive movement of the same patterns at the faster rate.\textsuperscript{23}

Carl Gabbard\textsuperscript{24} quotes speed as: It is the ability to move from one place to another in the shortest possible time. It is primarily innate yet it can be improved through practice for technique and movement efficiency.

\textbf{Muscular Strength}

The maximum force for tension that can be produced by the muscle group.\textsuperscript{25}

\begin{footnotesize}
\begin{itemize}
\item Carl Gabbard, Elizabeth Leblane, susan lowy \textit{Physical Education for Children}, (Englewood cliffs, N.J. Prentice - Hall inc., 1987),
\end{itemize}
\end{footnotesize}
Strength is defined as the force that a muscle group or a muscle can exert against a resistance in a single maximum contraction.\textsuperscript{26}

**Explosive Power**

The ability of neuromuscular system to overcome resistance with a high speed of contraction is defined as explosive power.\textsuperscript{27}

It is defined by Donal K. Mathews as: The capacity of the individual to release maximum force in the shortest period of time.\textsuperscript{28}

**Cardiovascular Endurance**

Cardiovascular Endurance is the ability of the heart, lungs and circulatory system to supply. Oxygen and nutrients to work muscles efficiently.\textsuperscript{29}

"The capacity to persist in strenuous tasks for same length of time."\textsuperscript{30} is expression of Robert V. Hocky.

\begin{itemize}
\item \textsuperscript{26} Donald Mathews, *Measurement in Physical Education*, PP. 5-6.
\item \textsuperscript{27} Frank W. Dick *Sports Training Principles* (London: Henry Kimpton Publishers; 1980), P. 176.
\item \textsuperscript{28} Donal K. Mathews, *Test and Measurement to health and Physical Education*, (New York: Prentice-Hall inc., 1959), P. 162.
\item \textsuperscript{29} ibid P. 12.
\end{itemize}
Muscular Endurance

Muscular Endurance is the ability of a muscle to maintain sub maximum force levels for extended periods.\textsuperscript{31}

Ability to continue muscular exertion of sub maximal magnitude.\textsuperscript{32}

Agility

Agility is often represented by the term "maneuver ability" mobility and swiftness.\textsuperscript{33}

Agility refers to the controller ability to change position and direction rapidly and accurately.\textsuperscript{34}

\begin{itemize}
\item \textsuperscript{32} Ibid., P. 100.
\item \textsuperscript{33} Clayne R. Johnson and A. Grath Fisher, \textit{Scientific basis of athletic conditioning}, (Philadelphia : Lea and Febiger; 1972), P. 199.
\end{itemize}
Norms

Norms are derived scores determined from the raw scores obtained by a specific group on a specific test.\textsuperscript{35}

According to Barrow and McGee\textsuperscript{36}, Norms are often assumed to be representative of score for larger population.
