CHAPTER - I

INTRODUCTION

Physical Fitness

Fitness is the ability to live a full and balanced life. The totally fit person has a healthy and happy outlook towards life. Fitness is the young man’s absolute necessity. It breeds self-reliance and keeps man mentally alert. Physical fitness is essential for human beings to adjust well with his environment as his mind and body are in complete harmony.¹

It is generally agreed that physical fitness is an important part of the normal growth and development of a child, a generic definition regarding the precise nature of physical fitness has not been universally accepted. Through research and scholarly inquiry, it is clear that the multi-dimensional characteristics of physical fitness can be divided into two areas: health related physical fitness and skill related physical fitness.²

Clarke and Clarke (1989) found that physical fitness is not a static factor and it varies from individual to individual and in the same person from time to time depending on factors. Physical fitness is probably the most popular and frequently used term in physical education. The most important objective of physical educators is to develop physical fitness. According to Nixon and cozens (1964), it was the desire to establish a scientific approach to the development of physical fitness which formed the basis of the first meeting of physical educators in 1885 when the profession of physical education originated.

The United States president’s Council on physical fitness and sports defined the terms “physical fitness as the ability to carry out daily task with vigor and alertness, without undue fatigue, with ample energy to enjoy leisure time pursuits and to meet unforeseen emergencies” (Clarke, 1971).

General fitness implies the ability of a person to live most effectively with his and her potentials, which depend upon the physical, mental, emotional, social and spiritual components of fitness which are highly interrelated. The primary components of physical fitness identified by the president’s council on physical fitness and sports were muscular strength, muscular endurance and cardio respiratory
endurance. However, later on the president council also included some other motor performance components namely agility, speed, flexibility and balance in physical fitness. But keeping in view the general opinion of the majority of the researchers, the author has not included the components such as speed, agility, power and balance (which are more important for success in specified sports) as essential components of basic physical fitness. However, the author defines physical fitness by group of five components, namely muscular strength, muscular endurance and cardio respiratory endurance, flexibility and body composition. It is important to mention here that some experts (e.g. Clarke and Clarke, 1987; AAHPERD, 1980, 1984) call such fitness tests which include the measurement of percentage body fat, as health related physical fitness tests.\(^3\)

The wise men of all ages and races, white, brown, yellow, and black, civilized or barbarians, savages, back to the cave men, made use of the power of mind over body. As you advance with your training you will find that mind is the most important part of training.

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Fitness: - Exercise scientists have identified nine elements that comprise the definition of fitness, the following list each of the nine elements and an example of how they are used:

- **Endurance** - A muscles ability to perform a maximum contracture time after time. (Continuous explosive rebounding through an entire Basketball game.)

- **Strength** – The extent to which muscles can exert force by contracting against resistance.(holding or restraining an object or person.)

- **Power** – The ability to exert maximum muscular contraction instantly in an explosive burst of movements.(Jumping, sprint/starting.)

- **Agility** - The ability to perform a series of explosive power movements in rapid succession in opposing directions.

- **Balance** – The ability to control the body position, either stationery or while moving.

- **Flexibility** – The ability to achieve an extended range of motion without being impeded by excess tissue, i.e. fat or muscle. (Executing a leg split.)
• Local muscle endurance – A single muscle's ability to perform sustain work.

• Cardiovascular Endurance – The heart's ability to deliver blood to working muscle and their ability to use it.

• Coordination – The ability to integrate the above listed components, so that effective.

Exercise describes as planned structured and repetitive bodily movement done to improve or maintain one or more components of physical fitness and is a subset of physical activity. Exercise is usually goal related and designed to endurance, strength, flexibility and aerobic capacity as components of physical fitness.

Physical fitness for youth is usually defined as an outcome measured with a fitness test, most commonly the fitness gram or the president’s challenge. Therefore, a physically fit youth is defined as one who meets criteria measured by one of these two tests.

Products refers to an expected outcome, specifically, a fitness outcome. As described in the physical fitness definition, it is measured by fitness test and the sole objective is to measure physical performance in a single frame of time.
Process is defined as ongoing and continuous participation in physical activity. The process of activity can be measured, but the focus of attention is given to regular (daily) participation in some type of physical activity. Often, emphasis is placed on life style activities that will carry over into adulthood.

Based on the definitions, it is clear that the authors view physical activity and physical fitness as different concepts. Although they are often used interchangeably, they need to be viewed separately. There are a number of misconceptions about fitness and activity that prevent adults from assessing the needs of youth correctly. Below we address some key issues that affect prescription of activity for youth and offer a better understanding of their fitness status.4

Fitness tests are best used when the educate youngsters about the status of their physical fitness. Since fitness tests have limitations, care should be used in recommending fitness testing for remedial problems. Before fitness tests are prescribed, a clear understanding of the purpose for testing should be defined. The three major uses of fitness testing are (1) to learn the process of evaluating one’s personal fitness level, (2) to

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discover one’s personal best physical performance, and (3) to evaluate the goals of the institution.

The most useful approach for use with most youth is the process of personal fitness evaluation. This approach is student-centered, concerned with the process of fitness testing, and places less emphasis on performance scores. With this technique, students are asked to find a friend with whom they feel comfortable. They work with the friend to help each other develop a fitness profile. The fitness gram test is best used for personal fitness evaluation because it utilizes criterion-referenced health standards. Each student strives to reach personal health standards rather than an arbitrary standard that is unrelated to health. The goal is to teach students the process of fitness testing so they can evaluate their health status during adulthood without a supervisor. The results are the property of the student and are not posted or shared with other students. The self testing program is an educational endeavor, it allows for more frequent evaluation because it can be done quickly and informally.

The personal best approach may appeal to gifted performers and to students who want to measure their maximum performance. The objective is to achieve a maximum score in each of the test items that
are normative-based. This type of program has been in place for years for most fitness tests, with a number of awards offered to high level performers. This is a formal testing program as compared to the self testing approach discussed above. It mandates that test items be performed correctly, following test protocol exactly. Since this program requires maximum performance, it may not be motivating to less capable students and requires a considerable amount of time to complete. Some students are threatened and fear embarrassment of failing to perform well in front of peers. Students can feel less threatened if they can choose to participate in a personal best testing session or decide to avoid such testing. Testing opportunities can be offered after or before school and on weekend when school is not session.

The third approach, institutional evaluation, entails evaluating the fitness level of students to see if the school is reaching its desired objectives. Institutional objectives are closely tied to the physical education curriculum. If the curriculum being taught to students is adequate and the goals are reasonable, students should be able to reach in situational goals. A common approach is to establish a percentage of the student body that must meet or exceed criterion referenced health
standards for a fitness test. If the percentage is below established institutional objective standards, the curriculum should be modified to increase the percentage of students meeting the health standards.

When the three different approaches for testing are reviewed, the personal fitness evaluation is most likely the most meaningful to students. It focuses on the process of evaluation rather than a product expressing a one time performance. It can be done in the least amount of time, is educational, and can be done frequently. In addition, little instructional time is lost, and youth learn to evaluate their personal fitness, a skill that will serve them for a lifetime.\(^5\)

**Obesity**

Obesity is becoming one of the burning problems all over the world. Obesity can occur at any age. It is one of the most deterrent health hazards in the world, affecting more than 30\% of the global population. Not only has it sparked a lot of talk, but it has also begun to be ranked as a serious risk comparable to certain diseases. Obesity is a serious risk to our health. In fact, some doctors even call obesity itself a disease.

\(^5\) Ibid, 452-453
Obesity and overweight constitute two of the most significant medical and health problems in the world today. The effects appear to be as much psychological as physiological. It has been estimated that as ten million teenagers are overweight, representing approximately 20 percent of total teenage population in the United States. It has also been estimated that the average individual in the country who is 25 years of age or older will gain approximately one pound of additional weight per year. At the same time bone the muscle mass is decreasing by approximately 0.025 to 0.50 pounds per year. This yields a net gain in fat of 1.25 to 1.50 pounds per year, 12.5 to 10 pounds in 10 year.\footnote{Michael L. Pollock and Jack M. Wilmor, “Health and Fitness through Physical Activities Physiology”, (Library of Congress Cataloging in Publication Data, Canada, 1978): 45.}

We live in an automated world where most of the activities that used to require strenuous physical exertion, can be accomplished by machines with the simple pull of a handle or push of a button. Automobiles, elevators, escalators, telephone, intercoms, remote controls, electrical garage, door openers, etc. are all modern-day commodities that minimize the amount of movement and efforts required by the human body. The lack of activity and improper diet
which has influenced the lifestyle of modern day people is the contributing factors for developing obesity.

However, there is nothing stopping us from changing the habits we have now into better ones that prolongs our life. Even those who are not obese should be aware of how they treat their bodies. Even they aren't obese now, bad eating and poor exercise habits can have negative effects later on in life, even if there aren't any signs now.

The history of human being is a witness to the fact that as long as man was busy in his day to day routine work in the absence of modern means of life, he did not have the problems being graced by today’s man. The development in the field of technology has provided numerous comforts to the modern man as completed to the ancient one. There is an increased efficiency in the work and also increase in the leisure hours, remarkable increase in the production, in the industrial as well as forming output, drastic changes in the communication system is available, unbelievable progress and development in the war gadgets, much improved transport system is available.

The advancement in the field of medicine and surgery have made possible for the nations to fight with dangerous disease causing prolongivity in the life and reducing the death rates etc. on the other
hand in this advancement have made the man muscles inactive and lethargic, creating problems of obesity and overweight, decrease in immunity, life relying on drugs and so on. The problem of obesity and overweight alone in the root cause of many physical problems of human beings. However, the problem of obesity over weight is not the product/result of only one specific factor; there are many contributing factors, for example physical inactivity comfortable life style, dietary habits, genetics, social and psychological attitude towards life and so on. In a nutshell all these factors have contributed a lot to make man physically weak and responsible to diseases.  

The convenience culture also is the cause of obesity. In office buildings we ride elevators rather than walk up one or two flights of stairs, parents drive their kids to the neighbor’s instead of telling them to ride bikes or walk; home gardeners use power mowers rather than old fashion blade movers. Alas, Indians have become less and less active, and they have become more and more reliant on machines specially the automobiles to do the work, their ancestors had to do with their own muscles. As if this profusion of conveniences were not enough problems, Indians now eat foods high in calories. They are

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eating fewer of the foods called complex carbohydrate whole grains, fruits and vegetables that have fewer calories and greater nutritional value. This combination of less physical exertion and more empty calories has left many Indians “over weight and out of shape.”

Overweight refers to an excess of body weight compared to set standards. The excess weight may come from muscle, bone, fat, and/or body water. Obesity refers specifically to having an abnormally high proportion of body fat. A person can be overweight without being obese, as in the example of a bodybuilder or other athlete who has a lot of muscle. However, many people who are overweight are also obese. People who are considered overweight have not attained excess weight to qualify as being obese.

Obesity can be defined as the condition of an excessively high amount of body fat or adipose tissue in relation to lean body mass. A more commonly-known definition of obesity is that of an individual's weight being 20% or more above what is considered normal as defined by a standard-accepted height/weight chart.

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Obesity is not necessary due to overeating. Until recently, the major cause of obesity was believed to be overeating. If obesity they were truly a unitary disorder and gluttony and over indulgence were the only factors associated with an increase in body fat, the easiest way to permanently reduce would surely be to cut back on food. Of course, if it were that simple, obesity would soon be eliminated as a major health problem. There are obviously other factors operating such as genetic, environmental, social and perhaps racial influences. Research also suggests that differences in specific factors may predispose a person to excessive weight gain. These include eating patterns, environment, food packaging and body image and biochemical differences related to resting metabolic rate.

Being over fat indicates an excess accumulation of body fat, thus the prediction of body fat from body composition analysis is required before this term can be used. Body composition is often expressed as the relative amounts of fat mass to fat free mass. Fat mass includes both essential and storage fat. Essential fat is found in bone marrow, brain, spinal cord, muscles, and other internal organs, and is “essential” to normal physiological and biological functioning. The minimum level below which, the essential fat should never weight for man and 12% of
total body weight for women. Women have a higher essential of fat storage requirement because of sex-specific fat drops below these critical values, normal physiological and biological functioning may be impaired. Store fat is comprised of two types of fat, yellow fat and brown fat which is rich in mitochondria and can increase production because of a slightly lowered biochemical efficiency of ATP (adenosine tri phosphate) synthesis, yellow fat is found in adipose tissue and serves three basic functions:(1) as a insulator to retain body heat (2) as an energy substrate, and (3) as padding against trauma. The majority of adipose tissue is found directly beneath the skin, subcutaneous fat distribution can vary between sexes and with age. Men tend to store more fat around the waist (android obesity), whereas women tend store more fat around their hip and thighs.²

With the recent interest in personal health, nutritional status and fitness several methods of estimating body fat have been developed and used in clinical settings.

The various ways to assess obesity are:

- Height/Weight Tables

- Body Mass Index
- Pondera Index
- Waist-Hip Ratio
- Hydrostatic Weighing
- Skin Fold Measurements
- Anthropometric Measurements
- Bio-impedance Assessment (BIA)

Most commonly used and easiest and inexpensive method of assessing the body fat or obesity is Body Mass Index. BMI can be used to screen for both overweight and obesity in adults. Body Mass Index (BMI), is the formula we use to find out the ratio between weight and height. BMI is dividing the weight in kilograms by the square of the person's height in meters.
BMI = \frac{\text{Weight (Kg)}}{\text{Height}^2 (\text{Mt.})}

TABLE 1.1

RATING OF BODY MASS INDEX

<table>
<thead>
<tr>
<th>Rating</th>
<th>% Fat</th>
</tr>
</thead>
<tbody>
<tr>
<td>Malnutrition 2</td>
<td>&lt; 18.0</td>
</tr>
<tr>
<td>Malnutrition 1</td>
<td>18.1 - 20.0</td>
</tr>
<tr>
<td>Normal</td>
<td>20.1 - 23.0</td>
</tr>
<tr>
<td>Over Wight</td>
<td>23.1 – 25.0</td>
</tr>
<tr>
<td>Obesity Type I</td>
<td>25.1 – 28.0</td>
</tr>
<tr>
<td>Obesity Type II</td>
<td>28.1 – 30.0</td>
</tr>
<tr>
<td>Obesity Type III</td>
<td>&gt;30.0</td>
</tr>
</tbody>
</table>

Above shown rating of Fat percentage are as per medical science and modified norms accepted for the Indian.

Obesity occurs when there is an excess amount of fat in one's body. Person is classified as obese if he has a BMI of 25 or higher. Many classify obesity as a disease that affects the rest of one's body in negative ways, leading to increased stress on the heart and other organs. People with a BMI of 23- 24.9 are typically classified as
overweight, however they also take the risk of becoming obese if they do not change their lifestyle or seek medical treatment.

Morbid obesity means that the individual weighs anywhere from 50 to 100% more than normal weight or they are more than 50 kilogram over normal weight. Morbid obesity literally means that the amount of overweight a person is carrying is life-threatening, due to its related health risks. Morbid obesity also often significantly hinders or prevents an individual from accomplishing many day-to-day functions.

The Facts about Overweight and Obesity:-

- Obesity research shows that the condition of obese increase with age.
- Around 28% of men and 27% of women aged 16-24 are obese in the world. But, about 76% of men and 68% of women between 55 and 64 of ages are obese.
- Top five countries facing the Obesity are United Sates (30.6%), Mexico (24.2%), United Kingdom (23%), Greece (21.9%) and Australia (21.7%).
- 300,000 deaths each year in the United States are associated with obesity.
• 43% of adolescents watch more than 2 hours of television each day which can directly lead to inactivity and indirectly to obesity.

• Even moderate weight excess (5 to 10 Kilogram for a person of average height) increases the risk of death, particularly among adults aged 30 to 64 years.

Types of Obesity:-

1. Simple Obesity and Secondary Obesity

   a. Simple Obesity. Simple Obesity is caused by ingesting too much heat energy that leads to excess storage of fat and not by endocarditic or metabolic disease. Most Obese people belong to this type. Simple Obesity has below two types:

      i. Constitutional Obesity or From Infancy type Obesity.

      Obesity starts from infancy to adult. Usually they have family history of Obesity. They have very good appetite from half a year after birth and body fat cell number begins to increase. Their metabolism is slow and synthesis exceeds catabolism. There will be poor
cure effect by limiting diet and strengthening exercise. They are not sensitive to insulin.

ii. Acquired Obesity or From Adult type Obesity, and Diet-induced Obesity. This is caused by intentionally or unintentionally eating too much, called surfeit Obesity. They usually begin to gain weight from early adult times and gain weight mainly on limbs. There'll be good cure effect by limiting diet and strengthening exercise. Their sensitivity to insulin treatment will recover.

b. Secondary Obesity: Taking some disease as primary disease, occupying fewer than 5% of total obesity. The primary diseases are Cushing's syndrome, metabolic obesity, hypothalamic obesity, polycystic ovary syndrome, insulin tumor, etc. The primary disease must be cured; otherwise it's impossible to lose weight.

2. According to fat distribution

a. Belted Shape Obesity: Fat is mainly accumulated in back, lower abdomen, hip, and thighs. Their body shapes are
similar as those who get Obesity Reproductive Functional Syndrome.

b. Great Trochanter Shape Obesity: Fat is mainly accumulated around trochanter area, breast, abdomen and pubes. Most obesity after menopause belongs to this type.

c. Lower Limbs Obesity. Fat is distributed from hackle to ankle, sometimes limited to leg and ankle. This type is like Fatty Dystrophy, forming extremely fat at lower body while extremely thin at upper body.

d. Upper Limbs Obesity. Fat is mainly stored at back, hip, breast, neck and face area. Obesity caused by Adriano cortical growth, tumor and pituitary basophilic tumor belongs to this type.

e. Hip Obesity. Fat is mainly accumulated in hip, so make hip fat and big. It's one of features of some nations, belonging to genetic disease.

3. According to body shape

a. Pear Shape. Most are female. They have narrow shoulders, small breast, slim waist, but fat is mainly
accumulated in hip, middle abdomen and thigh surroundings. To improve shape of this type, besides removing fat accumulated in hip, abdomen and thigh, you must strengthen muscle power of breast and abdomen.

b. Apple Shape. Most are male. Fat is mainly stored in abdomen.

4. According to body's tissue nutrition

a. Fat hoarding type. There are thick layers of fat; Body fat rate exceeds 35% for female while exceeding 30% for male.

b. Muscle Shape. One of the special features is that their legs look as strong as a radish. The whole body also looks strong and has the same level fat.

c. Edema Shape. The water inside the body is over 60% of the weight. It's easy to become edema by drinking water.

d. Mixed Shape possesses the above three tissue nutrition types.
Health Risks Associated with Obesity:-

- High Blood Pressure and Heart Disease

One of the most common complications that arise from being obese is high blood pressure. As excess weight is put on, one also gains mostly fatty tissue. This places more pressure on your artery walls, thereby increasing heart rate and reducing the capacity of blood vessels to carry blood. Strain on the heart, leading to high blood pressure, can also cause strokes as well as heart and kidney damage.

- Diabetes

Another risk that comes with being obese is that of diabetes. Obesity is a leading cause of type 2 diabetes. Excess fat makes body resistant to insulin. Insulin maintains sugar in blood, so if body becomes resistant to insulin, blood sugar can increase, leading to negative health effects.

- Sleep Apnea and Respiratory Problems

Due to the fact that many obese individuals have a large neck and restricted airways in which to breathe, sleep apnea and other respiratory problems are common.
• Depression and Social Anxiety

Not only is obesity linked with depression, but often scientists don't know if depression or weight gain came first. This is why it is so common that individuals who are overweight experience depression and social anxiety. Often unsatisfied with their condition and the symptoms they experience, individuals who are obese tend not to see the world out of the same rose-colored glasses as their thinner friends. Also, they are often discriminated against and treated unfairly in social situations, thereby promoting social anxiety in obese individuals.

• Arthritis

Excess weight puts more stress on joints, gradually wearing away the cartilage that protects them. Joint pain and stiffness occurs, especially on the knees, hips, and lower back.

• Physical Discomfort

Physical discomfort can occur when a person is severely obese. Excess fat around the abdomen and breathing areas can make it difficult to sit up and do many normal, every-day activities.
• Gallbladder Disease

Heavier people tend to produce more cholesterol in their body. Cholesterol can be deposited in the gallbladder, thereby increasing your risks of gallstones.

• Fatty Liver Disease

Fats can also build up in the liver, sometimes leading to the scarring and inflammation commonly associated with this disease.

Body composition is defined as a relative percentage of fat and fat free body mass. Exercise body fat is hazard and has been implicated as contributing to a variety of conditioning including hypertension, hyper lipoproteinemia and accident proneness. While all the mechanism of how excess fat causes these problems have not completely explained few health authorities would argue with the statement “It is better to be lean than to be fat.”

Body composition is the function of caloric balance, and although the emphasis has traditionally been on the caloric input side of the equation, we are now increasingly aware of the importance of energy output in regulation of body weight. Short-term experimental
trials and large-scale community studies show that vigorous physical activity helps to reduce body fat.

Body composition is not only important to health and influenced by exercise, but it is also a massive public health problem, and thus deserves increased attention in fitness test.

During muscular exercise, plasma level of poorly diffusible molecules increases about ten percent as a result of fall in plasma water content. This effect must be taken into account in evaluating effects of exercise on lipoprotein level as well as on molecules which are protein bound such as FFA. As a result of exercise, the level of plasma triglycerides and very low density lipoproteins remain steady or fall only slightly in fasting subject during exercise for two hours at load up to 400 kg. m/minute.  

Physical training or conditioning is the process used in order to develop the components of physical fitness. Conditioning induces physiological changes in almost every system of the body. The changes resulting from training are influenced by the frequency, duration and particularly, by the intensity of the training programme, and by the

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heredity. The effects of training are specific to the type of exercise performed the muscle groups involved and to the type of training programme used.\textsuperscript{11}

The scientific study of exercise and its beneficial effects on the body is becoming increasingly important with the growing realization of relationship of exercise with health. Field and laboratory observation on exercising human subjects are being supplemented with physiological and bio-chemical studies on laboratory animals, with acute and chronic exercise can now be explained at basis cellular and molecular levels.\textsuperscript{12}

\textbf{Yogasana}

As per Indian tradition Yoga, especially Hathayoga, comprises of different yogic exercises viz., Asana (body postures), Pranayama (controlled regulation of breath), Bandha (physiological locks or hold of the semi-voluntary muscles), Kriyas (cleansing process) and Mudras (attitude which spontaneously arouses meditation ) Swami Kuvalayananda, the father of scientific research in Yoga and founder of

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\textsuperscript{11} Rexhazldine, “Fitness or Sports”, (Marlborough: The Crowoo Press, 1985):
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Kaivalyadham (India) has constructed the curriculum of yogic exercises to maintain health and fitness of the people.

Yoga is a systematic discipline, originated in India for the self-realization. However, now a day, scientific researchers find its utility for all round development of personality along with innumerable spiritual as well as therapeutically applications. Yogic exercises are also becoming popular in the area of games and sports and also in the curriculum of Indian schools, college and universities.

Yoga is a Physical, Mental, and Spiritual discipline, originating in Modern India, whose goal is the attainment of a state of perfect spiritual insight and tranquility. The word is associated with meditative practices in Hinduism, Buddhism and Jainism.

The Sanskrit word yoga has the literal meaning of "yoke", from a root yuj. As a term for a system of abstract meditation or mental abstraction it was introduced by Patanjali in the 2nd century BC. The goals of yoga are varied and range from improving health to achieving Moksha. Within the Hindu Monist schools of Advaita Vedanta, Shaivism and Jainism, the goal of yoga takes the form of Moksha, which is liberation from all worldly suffering and the cycle of birth and
death (Samsara), at which point there is a realization of identity with the Supreme Brahman.

The Sanskrit word yoga has the literal meaning of "yoke", or "the act of yoking or harnessing", from a root. In Vedic Sanskrit, the term "yoga" besides its literal meaning, the yoking or harnessing of oxen or horses, already has a figurative sense, where it takes the general meaning of "employment, use, application and performance". A sense of "exertion, Endeavour, zeal, diligence" is found in Epic Sanskrit.

Long-term yoga practitioners in the United States have reported musculoskeletal and mental health improvements, as well reduced symptoms of asthma in asthmatics. Regular yoga practice increases brain GABA levels and is shown to improve mood and anxiety more than other metabolically matched exercises, such as jogging or walking.

When we speak of health, we normally think of only the body, but the health of one mentor-emotional, social along with spiritual aspects is important too. What we need is “Total” health. To achieve the above goal one should practice some sort of physical exercises, or yoga or any sports; of course it may vary from person to person,
depend upon one choice. Having spent few hours in the early morning doing yoga is the best prescription for a sound mind in a sound body. Thus the scope of this piece of research is large.

Yoga means union of individual self with the universal Self. This is an applied science and a systematic lifestyle for human. Its aim is to develop whole some personality. According to Maharshi Patanjali, yoga has eight limbs viz., Yama, Niyama, Asana, Pranayama, Pratyahara, Dharana, Dhyana and Samadhi. However, Hatha yoga defines yoga with Asana, Pranayama, Kriya and Mudra.

Various training programmes have developed strengthening the part of body. Most of these programmes consist of vigorous and resistance exercise which emphasized more on cultivation of Flexibility, strength and endurance. Every individual differ in their capacity and level of physical fitness.

Yogic practices getting popular are looks upon it systematic for improvement of physical fitness of an individual. Yet we lack in the experiment evidence about the utility of physical and exercises for promoting physical fitness.
It can be said that exercises are believed to contribute physical fitness; therefore it is necessary to consider the concept of yoga of exercise, in relation to the physical fitness. Yoga is recognized as one of the most important and valuable heritage of India. Today the whole world is looking to yoga for the answer to various problems that modern man is facing which was designed and practiced by our ancient sages for the all round development of personality. Now a day’s yoga is getting famous and support for use figure and fitness. Few minutes of daily yoga provide well result in all round development.

In order to bring yoga to life and to really profit by it, one must take it to heart in every sense of the word, and live it as an essential part of one’s daily life.

Yogic exercises recharge the body with cosmic energy. This facilitates

- Attainment of perfect equilibrium and harmony
- Promotes self- healing.
- Removes negative blocks from the mind and toxins from the body.
- Enhances Personal power.
• Increases self-awareness.
• Helps in attention focus and concentration, especially important for children.
• Reduces stress and tension in the physical body by activating the parasympathetic nervous system.

**Relevance with Research Study**

Creating awareness about fitness in the community is very important for people need to realize the value of fitness. Real fitness comprises of various factors like endurance, body composition, flexibility, muscle fitness and the ability to achieve mental relaxation. Real fitness deals with the ability of a fit body to create a calm and happy mind. If your body is a temple and soul the deity real fitness beauties the temple and pleases the deity. Fitness is the mother of sports. More fit the sportsman better the performance.

The first step of an exercise prescription is a complete evaluation, while it is advisable for anyone who plans participate in regular physical exercise programme to have a medical examination. The best way to find out any problem of the body is by analyzing the
blood urine. Through the blood test we can find out most of the
diseases and problem of the body.

Yoga is not a religion; it is a way of living whose aim is ‘a
healthy mind in a healthy body’. Man is a physical, mental and spiritual
being; yoga helps promote a balanced development of all the three.
Other forms of physical exercises, like aerobics, assure only physical
well-being. They have little to do with the development of the spiritual
or astral body.

Nationally representative surveys have shown rising trend of
overweight and obesity in developing countries. Economic
development, increased availability and consumption of food, changes
in lifestyle and increased urbanization are contributing further to
increase the burden of obesity in India. The burden of obesity is more
in urban areas and affecting young adults and children. Especially
college students are highly vulnerable to obesity as living away from
home, transitioning to independent living and are thus making their
own food choices, irregular routines and attracted to new lifestyle,
which often results in imbalanced diet.

In the name of adopting healthy eating habits, teens prefer eating
fad foods that virtually have no nutritional value. They always get lured
into trying unhealthy foodstuff, ignoring the fact that they are harmful for their body. Even in case of drinking, adolescents are trying liquor, instead of going in for healthy drinks. In fact, their eating and drinking habits are taking the shape of binge eating and drinking disorder. Read further to know as to how to lead teenager healthy lifestyle.

Some lifestyle tips for good health:

Food:

- You should eat plenty of fresh fruits and vegetables, as they are important sources of vitamins and minerals.

- Milk and other dairy products like meat, fish, eggs etc should be consumed only in moderate quantities.

- Fats should not be taken in large quantities, but then that does not mean, you don’t need to eat fats, but what is required is to restrict your consumption to smaller quantities.

- Sugary foodstuff like cakes, biscuits, sweets, soft drinks, and ice cream can become a cause of tooth decay; so restrict your consumption to smaller quantities.
• In a nutshell, your total food intake per day should be such that 50% of the calories should come from complex carbohydrates such as cereals, rice and bread. About one third contribution should come from milk and other dairy products and the rest from fats.

Exercise: It is very essential for each one of us to do some sort of physical activity. Pursuing sports is not only a great hobby, but also a fabulous way to keep in shape. But teens tend to skip on this important aspect of their life, so as to hang out with friends. This is the point, from where youngsters deflect from their path of leading a healthy lifestyle.

Sleep: Having a sound sleep goes a long way in maintaining your overall fitness. In fact proper sleep is one of the main beauty secrets of celebrities. If you have a healthy sleep, it shows on your face in the form of glow. Lack of proper sleep is likely to cause irritability and the scope of mood swings increases.

Since there is paucity of evidences on burden of obesity and prevailing lifestyle patterns among young adults in India, the present small scale study was carried out to find out the burden of overweight and obesity among college students in 18-25 years age group in college
girl. In the contemporary times, teenager fitness is something that has become a serious cause of concern for the society. Teenagers are not really living a healthy lifestyle. Earlier, people used to follow the idea of ‘early to bed and early to rise.’ But, now our youngsters neither go early to bed nor do they wake up early in the morning.

**Statement of the Problem**

The purpose of the study was to assess the effect of physical exercises and yogasana programme on physical fitness and obesity of college Students.

**Objectives of the Study**

1. The objective of the study was to find out the effects of physical exercises on physical fitness of college girls students.

2. The objective of the study was to find out the effects of physical exercises on obesity of college girls students.

3. The objective of the study was to find out the effects of yogasana training on physical fitness of college girls students.

4. The objective of the study was to find out the effects of yogasana training on obesity of college girls students.
**Delimitations**

1. The study was delimited to the college girls students only.

2. The study was further delimited to 60 obese girl students only.

3. The study was also delimited to subjects with age ranging from 18-25 years.

4. The study was also delimited to subjects from of Unjha city only.

5. The study was delimited to the selected Physical Fitness Components and Body Fat Variables.

6. The study was delimited to the selected physical exercises and yogasana training.

**Limitations**

It was not been possible for the researcher to control overall aspects of this experiment. The researcher recorded some drawbacks remained and within which researcher has conducted this experiment. The limitations as noted down during experiment are:

1. It was not possible to control daily activities of the subjects since they lived in house with their parents.
2. The food habits of the groups could not be controlled as most of the students were from varied culture, social and environmental background.

3. Motivational and emotional factors during the training were not controlled.

4. Certain factors like habits, life style, routine works, dietary habit etc. may have affected the results of this investigation.

5. Heredity factor of the subjects was considered as a limitation of the study

**Hypotheses**

It was hypothesized that;

1. Physical exercise and yogasana would bring about the significant changes in hand and shoulder’s power and endurance of obese student.

2. Physical exercise and yogasana would bring about the significant changes in back muscles power and endurance of obese student.

3. Physical exercise and yogasana would bring about the significant changes in agility of obese girls.
4. Physical exercise and yogasana would bring about the significant changes in explosive strength of obese girls.

5. Physical exercise and yogasana would bring about the significant changes in speed of obese student.

6. Physical exercise and yogasana would bring about the significant changes in endurance of obese student.

7. Physical exercise and yogasana would bring about the significant changes in Body Mass Index of obese girls.

8. Physical exercise and yogasana would bring about the significant changes in body fat % of obese girls.

9. Physical exercise and yogasana would bring about the significant changes in Waist/Hip ratio of obese student.

**Definition and Explanation of Terms**

**Yogasana**

*Sree Kumar* defined that Yogasana is training in the techniques of harmony and also a preparation for the total integration of human personalities.\(^\text{13}\)

\(^{13}\) Sree Kumar, T.P., “*Simple Yoga*”, (Madras: Yoga Brotherhood, 1966): 32.
Asana

“The static condition and posture of the body, delightfully is called.”

Obesity

Obese means overweight and “obesity is defined as an excessive accumulation of fat” increase in weight beyond that considerably desirable with regard to age, height and weight structure.

Haslam et al (2006), Define “obesity as excess body fat accumulation with multiple organ specific photo logical consequences.”

Physical Exercise

Physical exercise is defined as any physical as well muscular activity or body movement done systematically, scientifically with regularly in involving one’s mild, with a purpose to improve, maintain or to preserve and protect health, physical as well as motor fitness of the body.

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Physical Fitness

The physical fitness is strength, endurance, speed, flexibility and body composition.\(^{17}\)

According to Bucher (1958) 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 wholesome expression”.

College Students

A college student, who is learning under the supervision of a certified teacher in order to qualify for a degree,\(^{18}\)

Significance of the Study

1. The research findings may bring high effectiveness of yogasana practices for decreasing the obesity.

2. The research finding may bring high effectiveness of physical exercise for decreasing the obesity of students.


3. This study may be helpful in the promotion of health of college
girl students.

4. Physical education teacher may get guideline to develop the
fitness programme useful for the college level girl students.

5. The study may bring awareness amongst the students, parents
and other society members regarding the risk of the obesity.

6. The study may suggest the schedule of Yogasana practices and
physical exercises by which the obese girls students will be
benefited.

7. The study may provide the valuable literature for the field of the
physical education and yoga.