CHAPTER-3
MATERIAL AND METHODOLOGY

The present study was undertaken in two parts. First part included collecting infrastructural information of different health fitness centers and Second part of the study included collecting functional information from clients or health fitness centers going members. This study includes four major districts of Punjab viz. Patiala, Ludhiana, Jalandhar and Amritsar (committed in synopsis) and only the urban areas of Bathinda and Khanna city. From each district, 50 health clubs/fitness centers which were located in rural and cities, towns and rural area have been taken randomly and investigated. A total 234 health fitness centers and 1100 clients have been visited, enquired and interviewed for data collection. For the purpose of data collection, two different Performa have been used, one was Infrastructural Evaluation Performa and second was Functional Evaluation Performa.

3.1 INFRASTRUCTURAL PERFORMA

Infrastructural Performa had two major sections: one was general information section in which name of the health fitness centers, location, name of owner, type of health fitness centers, number of members and their age had been quoted. The second section was divided into four parts which helped to record space, facilities, available equipment and staff information (qualification, experience, health programmer etc.) of health fitness centers.

The first part of the infrastructural Performa was to collect the general information of the health fitness centers. This section was further divided into 6 sub parts a, b, c, d, e and f. In part ‘a,’ the name of the club was recorded; in part ‘b’ location of the health fitness center (rural, town and city) was recorded. The part ‘c’ was used to record the name of the owner. Part ‘d’ was used to collect the information regarding the type of the health fitness center
(commercial, community, cooperative and clinical). The part ‘e’ and ‘f’ were used to collect the information regarding number and age of the clients or members.

The second part of the Infrastructural Evaluation Performa was designed to collect the information regarding infrastructure, equipments, facilities and the qualification of the instructors who gave training to the clients and members of the visited health fitness centers. This section was further divided into seven subparts. The part ‘a’ titled ‘space’ was used to collect the information regarding the total covered area of the health fitness center, space available per individual member, i.e. space other than equipments for moving and free hand exercises, and the available space between the equipments. All the dimensions were recorded in ‘square feet’ units. The next subpart of this section was used to collect the information regarding the facilities which were being offered or setup by the health fitness centers. Through this part, the information about availabilities of change room/lockers toilets, food and beverages, counseling room, rehabilitation center, retail shop, sports medicine clinic, tennis court, swimming pool, squash court, screening of fitness assessment facility, child care area, and climbing wall etc. was collected.

Third part was designed to collect the information regarding the equipments existing in the health fitness centers. The equipments about which information was collected through this part were: treadmills, static cycles, free weights, mechanical resistant equipments, stability balls, boxing equipments, steppers and plate form, balance equipments, exercise mats, music systems etc. Information about other facilities like air ventilation, temperature control system, and medical facility setup has also been recorded through this section. The last section of the Infrastructural information Performa was used to collect staff related information. In this part, the information regarding the number of male and female trainers, experience of trainers as personal trainer, their professional
training in first aid, number of fitness trainers leading group fitness classes, fitness related workshops attended, general and professional qualification of the fitness trainers and their experience as fitness trainer was collected.

The definitions and explanations of various parts and items which were included in Infrastructural Performa are given below:

### 3.1.1 Location of Health Fitness Centers

#### 3.1.1.1 City: 
According to the census 2001, towns with population of 1,00,000 and above are called cities.

#### 3.1.1.2 Town: 
The towns are larger than village but smaller than cities. According to the census at least 75% of male working population should be employed outside of the agricultural sector. Minimum population density should be 400 persons per km and population should not be less than 20,000 (as per the 1991 Census).

#### 3.1.1.3 Rural area: 
According to the Planning Commission, a town with a maximum population of 15,000 should be considered rural in nature and in these areas the Panchayat works as governing body. A minimum of 75% of male working population should be involved in agriculture and allied activities.

### 3.1.2 TYPES OF HEALTH FITNESS CENTERS

#### 3.1.2.1: Commercial Health Fitness Centers: 
Those fitness centers which run only for commercial purposes are commercial health fitness centers. They promote their facilities by making year round marketing efforts launching membership drives and selling memberships. Commercial fitness centers focus more on comprehensive wellness programs addressing increased health concerns of members. Profit is the primary objective of commercial health fitness centers. [Grantham et. al 1998]

#### 3.1.2.2: Cooperative Health Fitness Centers: 
Cooperative health fitness centers in contrast to commercial health fitness centers have not been concerned with external promotion of their fitness centers. These types of facility are developed by an institute or factory or any
co-operative body for their employees. Usually their prospective consumers reside within the corporate complex. Cooperative fitness centers characterized by facilities and personnel inceptive features provide the most effective programming for the employees to optimize their devotion to the programs. Management functions in the co-operate setting are restricted because the co-operate health fitness centers are largely concerned with personnel interest and benefits. [Grantham et. al 1998]

3.1.2.3: Community Health Fitness Centers: These health fitness centers develop to facilitate social community or specific community or area based community e.g. parks, recreational centers, college and university fitness centers, country clubs & community clubs etc. Health fitness centers which are developed by local management for their people or community are community type health fitness centers. These types of facilities are not commercial or profit based. These facilities are controlled by local administration and they collect a small amount from the community members for the maintenance and development of the facility. Many local recreation centers have established dedicated space within a center to provide fitness programs and services on a value added basis. [Grantham et.al 1998]

3.1.2.4: Clinical Health Fitness Centers: Most of these facilities or fitness centers are closely associated with out-patient services, such as physiotherapy, sports medicine and as rehabilitation. The presence of physician is must during the cardiac and orthopedic rehabilitation process. Therefore most of the big hospitals develop health fitness centers in their premises. The individual practitioner also develop these types of facilities. It is wrong to say that these are non-profitable facilities. The profit motive in this instance is primary, and the fitness centers compete in the same marketplace as other commercial facilities. The patients use these health fitness centers for outpatient health care, such as cardiac rehabilitation, and other rehabilitative exercises by paying the fee. [Grantham et. al 1998]
3.1.3 MEMBERSHIP

The health fitness industry is unique in that to a great degree, its success depends upon selling and retaining memberships. A member is someone who pays for the privilege and right to use health fitness centre, as well as the privilege to associate with others of similar interests and backgrounds. Member establishes an agreement with the business that they intend to honor. Members pay not just for access, but for the unfettered privilege to access, with no restrictions placed on them when they access the service [Grantham et. al 1998].

3.1.4 SPACE AVAILABLE IN HEALTH FITNESS CENTERS

Space is meant as area for the pursuit of fitness related activities. This section is further divided into three categories.

1. Total covered area
2. Space available per unit individual.
3. Space between equipments.

3.1.4.1: Total covered area: The total area covered by health fitness center including all facilities e.g. fitness activity area, reception, toilets, child care etc. During this study, the total covered has been measured in square feet.

3.1.4.2: Space available per unit individual: It is the actual space available for an individual member for activities. To calculate this, the area covered by equipments other than facilities (washroom, lockers etc.) is deducted from the total covered area. The remaining figure is then divided by number of members which gives the space available per unit individual. During the study, this area has been also measured in square feet

3.1.4.3: Space between equipments: It includes the space around the equipments. This space is also measured in square feet.
3.1.5 FACILITIES AND EQUIPMENTS PROVIDED BY HEALTH
FITNESS CENTERS

3.1.5.1: Treadmills

Treadmills are the single most popular piece of cardiovascular
equipment in the health fitness industry and involve the largest
expenditure for cardiovascular equipment by health fitness centers.
The model of first treadmill was developed by Quinton, Marquette in
1952 and almost twenty years later by Trotter in early 1970’s. Over
the years, treadmills have become the cardiovascular modality of
choice for many club members. Much of their popularity can be
attributed to the evolution of technology, often based on research
into the mechanics of human motion, which is featured in most
treadmills. Most of the treadmills offer some form of soft deck (shock
absorbing surface), programmable features, controllable speed that
ranges from one km/hr to 20 km/hr, adjustable grade, inclination
upto 15 degrees, contact and remote heart rate monitoring, burnt
calories counting, time assessment, audiovisual entertainment etc. [Grantham et. al 1998]

3.1.5.2: Stationary Cycle

The first pieces of cardiovascular equipment that were utilized in the health fitness industry were stationary cycles. The stationary cycle was introduced earlier as exercycle in 1932, and in 1970’s the lifecycle, indoor cycle was introduced as the mass produced electronic piece of cardiovascular equipments designed specifically for the health/fitness industry. It subsequently became the benchmark for all future developments in industry. The lifecycle gave rise to other early brands of indoor cycles such as bicycle and universal. [Grantham et. al 1998]
Free weights equipment has been around for well over two hundred years. In the early part of the twentieth century, free weights were primarily used by the strongmen and bodybuilders to train, mostly in the form of dumbbells and kettle balls. Milo barbells, introduced in 1902, were the first commercially made free weight sets. The popularity of free weight equipment received a substantial boost in popularity in late 1980s and early 1990s when research began to document and reinforce the innumerable benefits of strength training for all segments of population. Free weight equipments can be grouped into three primary categories: barbells, dumbbells, benches and support machines. [Grantham et. al 1998]
Mechanical Resistance equipment is found in majority of all facilities. Mechanical resistance equipment encompasses strength training equipment that utilizes weight stacks and pulley mechanism to provide resistance to movement. The primary advantage of this type of resistance exercise is to provide a safe and efficient strength training modality. In early 1900s, most common types of resistance training equipment were leg press, leg extension and overhead press machines. The selectorized resistance machines that currently exist in the health fitness industry originated in the late 1950s, as a result of the efforts of Harlod Zinkin to develop the first universal machine. Zinkin’s equipment featured a single training unit that had multiple exercise stations, each with own weight stack. These early machines employed a system of levers to move the weight stack. The machines offered an uneven distribution of the resistance load at different points in the range of motion.
3.1.5.5: Stability Ball:

Stability ball is a ball constituted of soft elastic with a diameter of approximately 35 to 85 centimeters and filled with air. This ball is often used in physical therapy, athletic training program and fitness training programs. This ball is also known as Swiss ball. Stability ball was developed in 1963 by Aquilino Cosani, an Italian plastics manufacturer. He perfected a process for molding large puncture resistant plastic balls. These balls, then known as ‘Pezzi Balls’ were first used in treatment programs for newborns and infants by Mary Quinton, a British physiotherapist working in Switzerland, integrated the use of ball exercise as physical therapy for neurodevelopment treatment. A primary benefit of exercising with an exercising ball as opposed to exercising directly on a hard flat surface is that the body responds to the instability of ball to remain balanced, engaging many more muscles. The core body muscles (abdominal muscles and back muscles) are the focus of exercise ball fitness programs.
Boxing is very tough game. It needs lot of endurance, agility, reaction time, power and strength. Most of the health fitness centers use various boxing equipments for fitness programs. Basically boxing is a combat sports in which two people engage in contest of strength, speeds, reflexes, endurance and will by throwing punches with gloved hands against each other. In health fitness centers, boxing equipment is used for endurance work out which create strength and endurance in muscles and is also helpful in weight management. Boxing kit or punching pad and punching ball are the equipments on which the trainer has to punch. Members or clients practice their skills on two basic types of punching bags. A smaller, tear drop shaped speed bag which is used to sharpen the reflexes and repetitive punching skill while a large cylindrical heavy bag filled with sand is used to practice power punching.
3.1.5.7: Steps and Platforms

An exercise stepper is a piece of exercise equipment that provides clients with an aerobic workout. The exercise steppers and platforms stimulate the action of walking up a set of stairs, so it provides a leg workout. Some variations also have arm attachments so that the members can get an upper body workout at the same time. Though there are many designs but the basis of all steppers is same. They consist of two platforms each of which is large enough so that the exerciser can place one foot on it comfortably. The American Council of Exercise (ACE) sets the dimensions that the height of steppers for beginners should not be more than 4” and trained or experienced exercisers should not use more than 10” high platforms. Mostly 8” height of the stepper is used by health fitness centers.
3.1.5.7: Balance Equipments

Balance training is not only helpful to gain physical fitness but also reduce the risk of injuries. Balance training enhances prospective awareness, coordination and strength. By incorporating balance board, discs, pods, pads and rockers in training session, it can help to improve reaction to destabilizing situations. A large number of designs of such balance equipment are available in market to enhance the coordination, strength and balance of the body.
3.1.5.8: Exercise Mats

An exercise mat is handy to do floor based exercises. It is very useful during the practice of Yoga, Pilates and other stretching exercises. There is variety of mats available in the market and also in various sizes.

3.1.5.9: Air ventilation

Air ventilation is very important to keep fresh and exercise environment of the health fitness centers. Fresh air enhances the performance of the members and controls the suffocation inside the health fitness centers. During the peak hours most of the health fitness centers become much suffocated. For proper ventilation the exhaust fans are basic tools. There should be exhaust fans according to the capacity of the hall and the windows should also be there for proper air ventilation which helps to control the humidity and the quantity of CO$_2$. One exhaust fan should be in 100 sq. feet area.

3.1.5.10: Temperature Control

Temperature control in a health fitness center is extremely important. Too cold and too hot temperature is not recommended for physical fitness program. According to ACSM, the temperature of
health fitness centers should be 68 to 72°F. The temperature can be controlled through air conditioners. Air conditioners are also helpful in controlling humidity levels. In winters, hot air blowers and heaters can be used to control the temperature.

3.1.5.11: Medical facility set up

Medical facility set up is very important to be in health fitness centers for tackling emergencies. Every health fitness center should have first aid box. A first aid kit is a collection of supplies and equipments for use in giving first aid. The first aid kit should have adhesive bandages, dressing bandages (gauze roller bandages, elastic bandages, triangular bandages) butterfly closer strips, saline, antiseptic creams, scissors cutter or blade etc. Other than first aid kit, there should be availability of ice pack and the provisions of transport to shift injured person to nearby hospital and the contact number of specialized doctor to consult in emergency.

3.1.5.12. Changing Room/ Lockers:
Change room or locker room can serve several purposes, including providing an area for members to relax, and change their clothes before and after workout. There are many lockers available in variety of sizes to keep the belongings of members safe and secure.

3.1.5.13 Rehabilitation Room:

A separate room facility for rehabilitation purposes should be the part of a health fitness center. The room should be equipped with bed, massage table, wash basin and other required equipments. If there is any wet treatment facility available in health fitness center, that room should be at least 100 square feet, have floors and walls that are impervious to water, have shower and sink. Hydrotherapy treatments and water related treatments all require additional plumbing.
3.1.5.14 Retail Shop:

A new trend of retail shop in health and fitness centers is growing. The health fitness center provides a sale counter or a separate room as shop. In which they have the things which are useable in health and fitness programs e.g. hand towels, wrist bands, water bottles, weight gloves, sportswear like track suits, shorts, t shirts etc. This is a profitable move and also easy for members, because they do not need to spend their time to buy such things from market.

3.1.5.15 Sports Medicine Clinic:
This type of facility mostly found in clinical type of health fitness centers. This is the place in health fitness centers that used by visiting physiotherapist or any other expert doctor in emergency for regular visits. Mostly that clinical used to serve those members who got injuries during training sessions. This place equipped with bed, freezer, first aid kit or box, tables, chairs etc. and other specific equipments related to physiotherapy.

3.1.5.16 Swimming Pool:

Generally in health fitness center swimming pool is known as aquatic area. Aquatic area can be used for multiple functions, ranging for lap swimming, aquatic exercises etc. A number of aquatic spaces are commonly found in multipurpose type fitness centers including lap pools, therapy pools and recreational pool. The Olympic size of a swimming pool contains the area of 25mX50m. Most of the multi-facility health fitness centers some corporate centers have this type of facility
3.1.5.17 Tennis Court:

Tennis is the most popular court sport in all over world. Tennis is somewhat different than the other racquet games, because it offers to players multiple plying surfaces. The tennis court is 120 feet long and 60 feet wide with the playing area 78 feet long and 36 feet wide. A tennis court surface can be grass, clay and hard. Grass surface and clay surface are used mostly as outdoor playing surfaces. Hard courts are the most common indoor playing surface. Hard court can be either blacktop or synthetic surface that uses either carpet or artificial (terracotta) turf.
3.1.5.18 Squash Court:

Over the past 10 to 15 years the popularity of squash is growing day by day. Therefore, many of the health fitness centers are providing squash courts to their members. The squash racquet is a very interesting indoor court game and it demands a high level of physical fitness and agility. The squash court is 21 feet wide and 32 feet long, the ceiling height is 20 feet. The surface of an international court mostly made up with unfinished hardwood. The wall and ceiling can be compressed wood panel system. Squash courts are similar to racquet ball courts in their lighting and air circulation requirements. The temperature of the squash court should be 60-68°F.

3.1.5.19 Screening and Physical Assessment Facility:

Screening and physical assessment facility can be carried out with the help of screening tools such as bio-scanner, health
appraisal questionnaire to provide a means for the new and regular members to clearly determine their present physical fitness status and it can be helpful to construct fitness programs for new members and to evaluate the effect of physical fitness program of regular users or mature members. Screening and physical assessment help to construct specific fitness programs according to individual needs. [ACSM guidelines]

3.1.5.20 Childcare Area:

This is a dedicated area or space for providing children sitting or cares but not meant for day care. The child care areas are provided, art and craft, recreational games, nap and rest area etc. These spaces typically have rubber flooring, no edges, no mirror and not any breakable materials that could harm a child. [Grantham et.al 1998]
3.1.5.21 Climbing Walls:

The Climbing walls were used in military training program, but in these days climbing walls are using as strength training equipment in health fitness centers. Most of the climbing walls which are erected in indoor areas are motorized type. The person works against the motor moving wall and try to climb the blocks fixed on the walls. The number of blocks and intensity can be controlled according to the capacity of the member. It helps to improve strength of the body. We can say that it is an indoor version of rock climbing. It is available in different sizes but it starts from the dimensions of 10’ height and 8’ width.

3.2 FUNCTIONAL INFORMATION

This study is divided into two parts; the first part of the study was to collect the information regarding the infrastructure of the health fitness centers and it was done through the infrastructural Performa. The second part of the study is designed to assess the functional and operational efficiency of the health fitness centers. The information
about the functioning of the health fitness centers was recorded through Functional Information Performa. The Performa has been divided into five parts i.e. A, B, C, D, E & F respectively. For data collection, the health fitness centers going subjects were contacted personally and the information was recorded with the help of questionnaire. The primary objective of this section of the study was to assess the functional or operational setup of the health fitness centers to train the members who visited these centers. A total of 1100 members from 234 health fitness centers have been investigated through the questionnaire for data collection. The information about the functioning of the fitness centers was recorded through Functional Information Performa. The Performa has been divided into six parts i.e. A, B, C, D, E & F respectively. In part A, it was investigated whether the personal information like height, weight, age, occupation, income, reason of joining etc. The previous health status and medical status information of the member like blood pressure, information regarding injury, any stroke or any prescribed medicine which was taking by member etc. in the life style information, the information was recorded about the lifestyle of members. Such as how active were the members in their daily life, whether the members had some kind of drug addiction or addiction to alcohol or smoking. The information is vital in providing the right kind of health and fitness guidance to individual members and it is very important that such information was collected by health fitness centers. Similarly in part B, the information was collected from the members about what kind of training sessions were being provided by the health fitness centers they were visiting. In part C, the information was collected from the members about the nutritional
information and guidance being provided by their health fitness centers such as whether their intake or expenditure count was being done or not. Also whether, they were being provided with some specific nutrition package or services or not. It was also investigated whether health fitness centers were recommending some kind of supplements to their members or not and whether some members were using health supplements on their own.

In part D, it was searched whether members were being provided information about individual fitness or not by their health fitness centers e.g. whether they had gained from cardiovascular fitness training provide to them. Whether the members have gained or lost in body weight after joining health fitness centers and has there any change in physical fitness of the member after joining health fitness centers. In part E the information was collected from members of health fitness centers about specific sports training being provide by health fitness centers to the members. They were asked whether any kind of specific session such as recreational session and coordination session, speed session were being provided to them. Also whether they were provided sports training keeping in mind the requirements of some specific sports. And in the last F section, feedback was collected from the members about their experience in these health fitness centers. They were also asked whether they were satisfied with the operational services of the health fitness centers and whether they had gained some benefit after joining health fitness centers. Members were also asked about any kind of injuries got in health fitness centers during and due to the training. If some injuries occurred whether, the health fitness centers were provided the treatment or not. As mentioned above
operational investigation, functional evaluation was done with the help of above mentioned 6 parts data was collected about operational efficiencies. It is very important to understand the terms which were used for data collection in functional Performa.

### 3.2.1 PERSONAL INFORMATION

It is very important for health fitness center that to collect necessary information about the members so that each individual is given importance and attention. It was inquired through the functional evaluation Performa whether information about the following had been collected by their health fitness center or not.

#### 3.2.1.1 Name: it is important to record the name of the client so that a record of the person’s training program and progress can be maintained by the health fitness centers.

#### 3.2.1.2 Age: same kind of physical training programs cannot be given to people of all age groups. Specific training programs are needed to be designed for people of different age groups. This is possible only if health fitness centers have recorded the age of the clients.

#### 3.2.1.3 Height and weight: recording of height and weight is essential in order to calculate BMI of the client. The BMI will help the trainer to know whether the person visiting the health fitness center has idle weight or is overweight or obese. BMI is calculating as weight in kg over height in meter square. Without knowing BMI, it is not right to design health fitness program for a person and the designed program may not provide desired results.

#### 3.2.1.4 Purpose of visit: while designing training program for a client, it should be kept in mind what are the specific goals that persons wants to achieve; whether he or she wants to lose weight,
increase weight, increase efficiency in any particular fitness component or recovering from the injury etc. so it is very essential for any health fitness center to record the purpose of visit of the client so that training program could be designed to achieve the desired outcomes.

3.2.1.5 Occupation: many of our health problems including communicable and non-communicable diseases are related to our health. So information about occupation of the member visiting the health fitness centers can throw light on the lifestyle of the person and specific health problems related to occupation e.g. if a person is in a profession in which he needs to spend long hours sitting on the computer, his lifestyle become sedentary and such information can help health fitness centers to design specific training programs according to the requirements of the clients.

3.2.1.6 Date of Joining: record of the date of joining of the client should be kept by health fitness centers. This will help to handle fee issues on one hand and help to evaluate the fitness program being followed by the client on the other hand. This will help to monitor the progress of the client and make improvements if needed.

3.2.1.7 Income: the knowledge about the income of the person helps to know the socio-economic status of the person.

3.2.2 MEDICAL HISTORY OF MEMBER

3.2.2.1 Blood Pressure: Blood pressure is the pressure exerted by circulating blood upon the walls of blood vassals. During each heart beat, blood pressure varies between a maximum (systolic) and a minimum (diastolic) pressure. The rate of mean blood flow depends on both blood pressure and the resistance to flow presented by blood vassals. Mean blood pressure decreases as the circulating blood
moves away from the heart through arties and capillaries. A person’s blood pressure is usually expressed in terms of systolic pressure over diastolic pressure and is measured in mm of mercury (mm Hg). That is 120/80 mmHg.

Blood pressure varies in healthy people, but its variation is under control by the nervous and endocrine system. Blood pressure that is pathologically low is called hypotension and that which is pathologically high is hypertension & several large epidemiological studies have reported an inverse relationship between blood pressure and physical activity if a person suffers with hypertension then the program should be constructed that this problem keep in mind. The blood pressure history must be recorded so that the exercise program would be developed as per the present and the previous blood pressure status of the client. [AHA/ACSM Scientific Statement, 1998]

**3.2.2.2 Diabetes:** Diabetes Mellitus diabetes is a group of metabolic disease in which a person has high blood sugar. The high blood sugar produces the symptom of frequent urination, increased thirst and increase hunger. Diabetes is due to either the pancreas not producing enough insulin or because cells of the body do not respond properly to the insulin that is produced. There are three main types of diabetes.

Type 1: it is due to the body’s failure to produce insulin. This form was previously referred to as insulin dependent diabetes mellitus or juvenile diabetes.

Type 2: It occurs due to insulin resistance a condition in which cell fails to use insulin properly, sometimes also with an absolute insulin
deficiency. This form was previously referred to a non insulin dependent diabetes mellitus.

Gestational diabetes: this is the third main type occurs due to when pregnant woman without previous diagnosis of diabetes develop a high blood glucose level.

Exercise has pastime benefits for diabetes or diabetic patient. The trainer should keep in mind the diabetes kind and sugar leveled of the client before program. There should be different fitness programs for diabetic patient and the type of diabetes should be considered while training sessions. [Colberg et. al 2010]

3.2.2.3 **Heart problems:** heart problems are also known as cardiovascular heart diseases that affect the cardiovascular system. The cause of cardiovascular diseases are diverse but artherosclerosis and hypertension are the most common. With aging physiological and morphological changes that affects cardiovascular function and lead to increase the risk of cardiovascular disease, even in healthy individuals.

The regular exercises reduces the risk of cardiovascular diseases but the incidence of a cardiovascular event during exercise in patient health cardiac disease is estimated to be 10 times that of otherwise healthy person. Therefore the prescreening assessment and know the disease history of client become helpful to give training session and helps to reduce any emergency during the exercise sessions.

3.2.2.4 **Orthopedic Problems:** orthopedic problems such as fracture, arthritis and any joint injury can be created hurdle during the exercise. It is very important to know the previous injury status and other orthopedic problems of Client. The knowledge of these
problem helps to chalk out the fitness plan for an individual. The patients who were suffered by arthritis need special attention. These problems occur in old age therefore that people trained carefully and the orthopedic problems must keep in mind while constructing the fitness programs. It also helps to give rehabilitation process/program which helps to reduce the risk of further damage.

3.2.3 LIFE STYLE:

The information regarding the life style of the members/client is very help full for the fitness trainer that, which type of life style members has? Is a member used to smoking and alcohol, is he addictive to any drug or not which type of life style he or she is enjoying? What they consider them self, sedentary, moderately actives, light active. Is their life style or occupation stressful? If they have stressful lifestyle, then, how they consider themselves highly stressful, moderately stressful, and low in stress?

Above mentioned information about the life style of the client is useful for health fitness center to give the training to the members. Because many of studies found the life style can effect health and it should be very important for health fitness center to consider the life style of the member while chalk out the fitness program.

3.2.4 TRAINING INFORMATION:

It is very important to know the training information which health fitness center given or offered to the members. This information helps to assess the operational or functional assessment of the health fitness centers. The information regarding the training has been collected from the members of the various health fitness centers through the Performa. 14 types of training programs are
included in functional Performa. The detail of the training programs is as follow:

3.2.4.1 Aerobics Training: Aerobic training is physical exercise of relatively low intensity that depends primarily on the aerobic energy generating process. Aerobic means “living in air”, it refers to use of sufficient $O_2$ to adequately support aerobic metabolism. It can be performed over extended period of time.

3.2.4.2 Personal Training: A personal training is drawn only for an individual, in other words a particular fitness program for specific member or individual. A trainer involved in exercise prescription and instruction to a particular individual is personal trainer. Personal trainers also measure their member’s strength and weakness with fitness assessments. These fitness assessments may also be performed before and after an exercise program to measure their client’s improvement in physical fitness.

3.2.4.3 Cardio Kick Boxing Training: Cardio kick boxing training is also known as aerobic kick boxing training. It is a sports-specific equipment based exercise program created by Frank Thiboutot at the Bay club in Portland, Maine in 1992. Originally it is a circuit training format which was developed to help promote the sport of kick boxing through kick boxing fitness. This training is used to improve the cardio efficiency of the members. These days it has become popular in health fitness centers.

3.2.4.4 Dance Training: Dance is a great supplement to sports, cheer and other physical activities. It is also a part of cardio training; it is performed on music specially created for the cardio dance training. Dance training is usually performed in group which is lead by cardio dance trainer or expert. The group perform exercises
perform with music. It improves coordination, balance and flexibility. It also encourage development of small and large motor skills, it contributes to whole body strength and physical fitness and helps to improve agility and endurance.

3.2.4.5 Yoga Training: Yoga is an ancient Indian tradition and cultural discipline. Now days it has become very popular in whole world and most of the health fitness centers offer yoga classes to attract their clients. Even the exclusive yoga studios are in fashion these days. As we know yoga is a complete package of physical fitness and mental relief, weight loss, flexibility, stress relief, etc. As such, its benefits are only perceived to be at the body level and we fail to realize the immense benefits of yoga offered in uniting the body, mind and breath. Therefore yoga training is very useful way to get overall fitness.

3.2.4.6 Stretch and tone training: Stretch and flexibility exercises help to tone body. These types of exercises are especially helpful if you have limited time for working out and want to quickly accomplish as much as possible. There are many exercises like Yogic asana, Pilates and different style of dance that allow to both stretch and tone the muscles at the same time. Before and after work out, the stretching helps to tone the muscles which help to reduce the risk of injuries.

3.2.4.7 Cycling Training: Cycling training is done by static cycles. Stationary bike or cycle is a device with saddle, pedals and some form of handle bars arranged as on a bicycle, but used as exercise equipment rather than transportation. It is a bicycle but without true wheels. Exercise cycles or stationary bikes used for indoor exercises to increase general fitness. It is also used for physical therapy
basically the low impact, safe and effective cardio vascular exercises and fitness. The low impact movement involved in operating an exercise bike does not put much stress on joints and does not involve irregular motions that some other fitness equipment may involve.

3.2.4.8 **Aqua Aerobic Training:** Water is one of the best fitness tools. It provides resistance which strengthens muscles and boosts cardio intensity. It also supports some of your weight, making workout easier on joints and reducing injury. Aquatic exercises can help to heal faster too. Doctors often recommended for joint injuries, infection or surgeries as a way to stay fit and shorten recovery time. Aqua aerobic training is an easy and adventurous mode of training. Most of multipurpose health fitness centers offer aqua aerobic training to their members. The exercises like, water jogging, pool plank, one legged balance and fly back etc are popular exercises to for workout.

3.2.4.9 **Stress Management Training:** Stress management refers to the wide spectrum of techniques and psychotherapies aimed at controlling a person’s level of stress. The meditative exercises, recreational exercises are very useful to manage the stress. Many of the health fitness centers offer stress management training sessions to the clients and members. Most of the health fitness centers use spa, body massage, yoga classes and group activities which strengthen the social bonding of an individual. These types of techniques are used by health fitness centers to give relief to their members from stress.

3.2.4.10 **Meditation training:** Basically mediation is a process that trains the mind or endures a mode of consciousness of an individual. The term meditation refers to a broad variety of practices that
include techniques designed to promote relaxation, build internal energy or life force. Meditation is often used to clear the mind and ease many health issues, such as high blood pressure, depression and anxiety. A mediation session helps to control the stress level and helps to keep the body and mind calm and relax. It also helps to reduce the muscular tension and make body ready to tackle other training tasks and sessions.

3.2.4.11 Weight Management: Weight management is a long term approach to a healthy lifestyle. It includes a balance of healthy eating and physical exercise to equate energy expenditure and energy intake. Weight management does not include fad diets that promote quick, temporary weight loss. Health fitness centers are promoting their weight management programs because most of the people are becoming obese and need to control their weight. Health fitness centers are targeting this population and offer weight management programs or packages.

3.2.4.12 Nutritional training: Nutritional training is a process or information about the intake of food or which type of food is needed as per the requirements. Health fitness centers hire the nutritionist for consultation and help to their clients to manage their weight. Health fitness centers provide training or information to the clients about how much and which type of food they should take.

3.2.4.12 Special population training: Special populations groups are persons with diseases and other metabolic conditions that are usually under the care of physicians or other health care personnel. There should be different fitness programs for old age people suffering from arthritis and back pain and pregnant women. These are considered as special population and should be treated with
specific training and exercise programs. Health fitness centers are meant for exercise and they should be specified by the demand of special population. They should have qualified trainers to develop the special training programs and arrange training sessions with individual attention.

3.2.4.13 Sports Specific Training: Sports specific training is simply fitness and performance training designed specifically for specific performance enhancement. Sports specific training includes such areas like strength, speed, power, endurance, flexibility, agility and mental preparedness. The training plane should be according to the needs and requirements of particular/specific sports. Health fitness centers are a place to do the exercises and they provide infrastructure to prepare specific sports training and general fitness training programs.

3.2.5 NUTRITIONAL INFORMATION

Nutrition is concerned with the study of foods and their effect on human body. Studying the food requirements is necessary for production of energy for work, development and maintenance of body and regulation of body processes. It is commonly acknowledged that what we eat effect our health, growth and development and ability to perform the various activities of our lives. In term of health fitness, the food that we consume can directly affect our bodily composition and weight as well as the energy we have available to engage in physical activities and exercise. Under this segment we tried to record every aspect of nutritional information such as intake and output or expenditure of the client, recommended and non recommended supplementation, specific nutritional packages and nutritional counseling being provided by the health fitness centers.
3.2.5.1 **Intake Information**: Intake information of food is essential to construct the diet plan and fitness program. The detailed information regarding the food which is taken by the client e.g. type of food, preparation style, quantity and frequency should be recorded. This information helps to calculate the calories intake by the person in a day which will help in preparation of diet plan.

3.2.5.2 **Expenditure/Output**: Expenditure of calories and energy help to predict the life style of the client. The calories expenditure is made up of three things (1) Basal metabolic rate (BMR): The BMR is the rate of energy consumption by our body while at rest (2) Physical activity (3) Dietary thermogenesis: This is the amount of calories burnt during digestion of food. The counts of energy expenditure help them balance the intake and expenditure of calories and prepare a suitable diet plan.

3.2.5.3 **Recommended supplementation**: The supplements are basic nutrients of our food. The food value is predicted by the amount of supplements present in food. There are more than 50,000 dieting supplements available. The information regarding the supplementation consumed by the clients with the recommendation of health fitness trainer and other sources was recorded through this section.

3.2.5.4 **Non-recommended Supplementation**: The number of members using non-recommended supplementation was recorded through this section. The clients procure the information about the supplements on their own from books and internet.

3.2.5.5 **Specific Nutritional Packages**: The information regarding specific nutritional packages being provided by health fitness centers to their members was recorded through this section. The specific
nutritional package is the nutritional information or diet according to the needs and requirement of individual and specific demands of special population.

3.2.5.6 **Nutritional counseling:** Nutrition counseling is an ongoing process in which a health professional, usually a registered dietitian interact with client and solves the nutrition related problems. The goal of the nutrition counseling is to help a person make and maintain dietary changes. Nutritional counseling benefits a wide variety of people and can help those with numerous disorders. During this assessment, the counselor provides information based on a person’s current status, helping to improve overall health.

**3.2.6 INDIVIDUAL INFORMATION**

To assess the functional capacity and capability of the health fitness center, the individual information regarding the benefits obtained in term of fitness weight loss, weight gain, cardiovascular fitness, benefits and harms during the fitness programs and injuries prevalence while the training sessions was recorded.

This type of information helps to assess the effectiveness of the health fitness programs being provided by the health fitness centers to their members and also to assess the safety measurements of the health fitness centers.

**3.2.7 SPECIFIC TRAINING INFORMATION**

**3.2.7.1 Recreational Sessions:** A recreational session is a session with no structured programs of events. Participants should be able to enter and leave the program. Lead up games, recreational games can be part of the recreational session. It helps to reduce the burden of the training and other mental stress. It also helps to strengthen the social bonding with other group members.
3.2.7.2 **Speed Session**: Speed sessions are very important to increase the efficiency of body and muscles. The little enhancement of intensity in regular workout can help to improve the movement efficiency during the speed session. The duration of the activity becomes reduced but the intensity of movements should be increased.

3.2.7.3 **Strength Sessions**: Strength is the basic component of the physical fitness. Strength sessions improve the efficiency of muscles against the resistance.

3.2.7.4 **Endurance session**: Endurance is ability to work against resistance for long time and it is helpful in improving the cardiovascular fitness or efficiency. The workout should be prolonged and on moderate speed.

3.2.7.5 **Coordination Session**: It is also a fitness component that describes the smooth, efficient movement patterns that are part of sport skills and tasks. Motor coordination is achieved when subsequent parts of the body continue the same movement in same manner which is well timed, smooth and efficient with respect to intended improvement of body mind coordination that helps to improve the work efficiency.

3.2.8 **CLIENT FEED BACK**

Client feedback is very important part of the study which helps to assess the functioning of the health fitness centers. In other words, client or members feedback is the result card of health fitness centers. Whether the clients were satisfied with the functioning of the health fitness centers, whether they felt benefited with the training programs and training session guidance of the health fitness trainer etc or not, these questions were vital to evaluate the health fitness
centers. The feedback about injury occurrence and treatment was very helpful to know the interest of health fitness centers towards the safety of the clients and their commitment toward the members.