CHAPTER-2

REVIEW OF LITERATURE

The literature survey revealed that the Indian fitness industry was not very well researched. There was severe lack of literature related to studies on health fitness centers in India and during our research we did not come across any study about the infrastructure and functioning of health clubs in Punjab. The surveys regarding the state of health club industry were carried out mainly by professional organisations and they have published their findings through various surveys and reports. Much of the literature on the health and fitness centers was available from the reports published by International Health, Racquet and Sports club Association (IHRSA). IHRSA is a trade association serving the health and fitness club industry. The latest status of IHRSA i.e. June 2013 has shown that over 9,000 members in 76 countries were part of this association. IHRSA has collected and reported key operational data on all aspects of the health fitness industry from consumer attitudes to industry trends. The majority of the reports published by IHRSA were on the health and fitness industry in USA though it also publishes data on the global fitness industry. However in India there is no equivalent of IHRSA surveys and reports.

Alexandris and Palialia (1999) carried out a study to develop and standardize a scale measuring customer satisfaction, based on a sample of Greek population. The study was based on previous work by Beard and Ragheb, who measured satisfaction in leisure activities. Two hundred and ten members of three private fitness clubs participated in the research and completed the instrument.
The results supported the multidimensionality of the concept of customer satisfaction, and revealed the existence of five factors: facilities/services, individual/psychological, relaxation, social, and health/fitness. The total scale and the sub-scales were shown to have satisfactory psychometric properties.

Alexandrisa et.al (2001) carried out a study aimed at investigating the behavioural consequences of perceived service quality dimensions in the context of private fitness clubs in Greece. Three hundred members of three private franchised fitness clubs participated in the study. The results indicated that the service quality dimensions predicted significant and high proportions of variances in word-of-mouth communications and purchase intentions across all three facilities. The tangible and assurance dimensions offered the most significant contributions. The results further revealed no significant relationships between the price sensitivity and complaining behaviour dimensions and perceptions of service quality. These results had theoretical implications for developing a framework for conceptualising service loyalty and identifying its antecedents. They also had practical implications for designing effective customer retention strategies.

Alexandrisa et.al (2004) aimed to test the applicability of a simplified version of the service quality model, proposed by Brady and Cronin (2001) in the context of a health club, and tested the degree to which service quality perceptions and customer satisfaction predict psychological commitment and word-of-mouth communications. One hundred and seventy five members of a private health club in Greece participated in the study, and completed: a) a service quality scale (measuring interaction quality, physical environment quality,
and outcome quality); b) the sport commitment scale; c) a customer satisfaction scale; and d) a three-item scale measuring word-of-mouth communications. A confirmatory factor analysis (CFA) provided support for the factorial validity of the three primary dimensions. The psychometric properties of all the scales were satisfactory. The results also revealed an adequate fit of the structural model, which accounted for 29% of the variance. The physical environment and outcome dimensions significantly influenced satisfaction, which, in turn, had a stronger influence on word-of-mouth communications than on psychological commitment.

Al-Falasi et al. (2008) carried out a research to assess the knowledge, attitudes and use of anabolic steroids among gym users in Al-Ain district, UAE. The researchers carried out a survey among gym users of 18 randomly selected gyms in Al-Ain city using a self-administered questionnaire. The results of the study showed a very high prevalence of misuse of anabolic steroids (22%) among gym users in Al-Ain city. The researchers found that anabolic steroid use was statistically significantly higher among body builders, weight lifters and among commercial club users compared to others; and despite awareness of adverse consequences of anabolic steroids, 7% of non-users were planning future use of anabolic steroids. In addition, abusers perceived more benefits from the use of anabolic steroids than harm.

American College of Sports Medicine (ACSM 2012) set guidelines and standards for health/fitness facilities in various countries. ACSM published a book “Health/Fitness Facility Standards and Guidelines,” in 1997 which provided guidelines for the set up of health/fitness centers and served to set standards in America. *ACSM’s Health/Fitness Facility Standards and Guidelines, Fourth Edition*, published in 2012 presented the latest standards and guidelines that could help health and fitness establishments provide high-quality service and program offerings within a safe and appropriate environment. The document provided a blueprint for health and fitness facilities to use in elevating the standard of care they provided their members and users as well as enhance their exercises experience. The fourth edition included new standards and guidelines for pre-activity screening, orientation, education and supervision; risk management and emergency procedures; professional staff and independent contractors; facility design and construction; facility equipment; operational practices; and signage.

American Heart Association and ACSM (AHA and ACSM 1998) jointly published a position paper which provided recommendations for cardiovascular screening of all persons (children, adolescents, and adults) before enrolment or participation in activities at health/fitness facilities. Staff qualifications and emergency policies related to cardiovascular safety were also discussed. According to the paper, regular exercise reduces subsequent cardiovascular morbidity. The paper recommended that adequate screening and evaluation were important to identify and counsel persons with underlying cardiovascular diseases before they began exercising at moderate to vigorous levels.
An article, ‘Selecting and effectively using a health/fitness facility,’ published by ACSM(2011), recommended that while selecting a fitness facility, the clients should check whether the health/fitness facility provided a variety of equipments and programs to meet the personal fitness goals and interests of the client. The clients should first establish their exercise/fitness goals before talking to personnel to see if they provided the programs and equipment they seek.

Baker et.al (2006) studied to identify the prevalence of abuse of certain prescription medicines (POM) amongst health club goers in the South Wales area. The results of the study reported prominent Anabolic-Androgenic Steroid (AAS) use amongst recreational gym users in the chosen area with 70% individuals reporting AAS use. About 7% female respondents also reported taking medication. The research demonstrated an enormous increase in the use of growth hormone (24%), insulin (14%), and tamoxifen (22%), with smaller increases in other drugs. They found that drug users were from all levels of society and reported various physiological and psychological side effects from their use.

Ballor et. al (1988) assessed the effects of weight training on body composition in an 8-week weight loss study. Forty obese women were randomly assigned to one of four groups: diet without exercise; diet plus weight training without diet. The authors concluded that caloric restriction diet supplemented with a resistive weight training program resulted in maintenance of lean body weight compared with dieting alone. Furthermore, they found that weight training resulted in comparable gains in muscle area and strength in the both weight training groups; with and without diet.
Booth *et. al* (2002) associated exercise with decreased instances of heart disease, cholesterol abnormalities, hypertension (high blood pressure), renal disease, hyperinsulinemia, type 2 diabetes, cancer, osteoarthritis and mortality.

Buchha (2012) studied on the fitness trends in India, and highlighted on the need for development of fitness programs for people of retirement age. The study presented following observations regarding the fitness trends in India: The fitness trends and technologies were changing fast and there was need to educate the new user on new trends. The challenge in the fitness industry was to improve the health of future generations and to encourage healthy habits for lifetime. He observed a shift toward gentler, more introspective exercises that also contribute to improving cardiovascular health while increasing flexibility and muscular strength. The paper concluded that fitness clubs must provide highly customized fitness products and experiences that meet today’s consumers. The author observed that fitness clubs may become a key partner in working with healthy and at-risk populations to promote and sustain wellness.

CE Garber *et. al* (1998) reviewed a paper on the recommended quantity and quality of exercise for developing and maintaining cardio respiratory and muscular fitness and flexibility in adults. According to the paper, the combination of frequency, intensity, and duration of chronic exercise were been found to be effective for producing a training effect. The interaction of these factors provided the over load stimulus. A well rounded or a well structured training program including aerobic and resistance training and stretching exercises was recommended in the paper. The authors also reported
that aerobic endurance training of less than 2 day a week, at less than 40%-50% of VOR and for less than 10 min. was generally not a sufficient stimulus for developing and maintaining fitness in healthy adults.

Crossley (2006) University of Manchester wrote an article entitled 'In the Gym: Motives, Meaning and Moral Careers' which analysed 'vocabularies of motive' amongst individuals who work out at a private health club in the Greater Manchester area (UK). The article drew a distinction between motives for starting at a gym and motives for continuing, and analysed each separately. It also sought to draw out, in the latter case, the many motives which conflicted with a stereotypical view of 'working out' found in some academic accounts. Working out was not only an instrumental means of cultivating valued bodily attributes, it was argued, nor were its attractions necessarily all 'bodily' (at least narrowly defined) in nature.

Darper et. al. (2006) carried out a study on the South African fitness industry which was published in South African Journal of Sports Medicine. The study was aimed at creating an inventory of fitness facilities in South Africa, their location, equipment and services offered the demographics education and training of staff working in these facilities. Following results were obtained from the study: The South-African industry comprised mainly of independent facilities (68%). All types of facilities were found to be located mostly within urban areas, and reported providing services to just less than 2% of the South African population. Facilities offered a wide range of equipment and services to their members. Of the fitness-related staff at facilities, the majority were reported to be young (18 - 25 years,
55% of male and 49% of female staff). Less than a quarter of fitness-related staff was found to hold university qualifications, and just over 80% of instructors held qualifications aligned with the National Qualifications Framework. The report highlighted the widespread value of assessing the fitness industry and identified opportunities and areas in need of attention in South African fitness industry.

Deloitte Access Economics commissioned (2012) by Fitness Australia conducted a survey of businesses in the fitness industry in Australia to provide a detailed overview of the industry. The resulting report provided the fitness industry with important data and trend information that could contribute to industry development, identify and address opportunities and challenges and help to ensure the continued strength and prosperity of the fitness industry. The data obtained indicated high number of users within the range of 25-34 years of age, with higher rates of female to male participation. The report showed faster rate of growth for the industry than other industries and predicted further growth for the industry. The report also stressed the need of industry innovation to meet changing consumer preferences and to develop a greater capacity to integrate advanced technology in service provision.

EHFA’s (2012) ‘European Health and Fitness Operators Report’ provided insights into many different types of facilities available, with many different business models from full service scale sites with fitness, wellness, spa, sauna, swimming pool, racquet sports etc. to micro studios catering for a special target group. An update for this report published in 2013 European Health and Fitness Operators Report-An update’ highlighted major developments in 2013 (EHFA 2013). EHFA also published ‘Retention Report’ which answered the
key questions on retention of members in fitness centers from scientific and fitness industry literature. EHFA also sets standards of health and fitness sector and promotes best practice in instruction and training with the ultimate objective of raising the quality of service and customers. The EHFA Standards Council monitors the development across and outside the industry to ensure that European framework and standards for fitness industry were fit for purpose and up to date.

Elizabeth et.al (2010) researched to determine whether nutritional supplements would affect muscle recovery after eccentric exercise-induced muscle soreness in untrained healthy young men. For this purpose they took 21 subjects aged between 20 to 28 years. During this double-blind randomized block study design, each subject completed three, 3 days trials (separated by = 2 weeks), identical except for treatment, with each subject serving as his own control. Trials began with a bout of right-leg eccentric exercise, followed directly by treatment. At 0, 24 and 48 hours, and data were collected: creatine phosphokinase from pre-exercise blood samples, subjective muscle soreness questions, and strength tests (power, torque, work). ANOVA revealed no significant treatment effect on indicators of soreness or damage during recovery. The results indicated that protein or carbohydrate supplement after exercise that caused mild muscle damage did not facilitate muscle recovery in adequately nourished healthy young men.

Foster et.al, in a report, ‘Exercise in Health Clubs’ published by ACSM observed that the program design and staff member qualifications of most of the health clubs were exclusively focused on the already fit and there was lack of focus on special populations like
older age adults and people having some medical history. The authors also observed that there were generally inadequate pre-exercise screening and safety programs in a high percentage of health clubs, even the so-called “quality” clubs. The authors also reported that the likelihood of exercise related complications could be greatly reduced if there was compliance with broad principles of operation as given in professional guidelines by ACSM.

Franchise help (2014) in a report ‘Fitness industry Analysis 2014–Cost and Trends,’ analyzed the current costs and future trends expected in the health fitness industry in America. According to the report, the competition in the fitness industry would continue to rise and health fitness centers needed to concentrate on older age groups. The report suggested that the fitness centers must continue to buy equipment to keep up with the latest trends, but this could prove to be expensive and large amount of money may be needed. The report also predicted that the increasing obesity rates and prevalence of lifestyle diseases would continue to attract people to health clubs resulting in growth.

Grant et.al (2004) investigated the effect of a 12-week functional exercise programme on overweight women. Paired analyses showed that body mass index and total cholesterol decreased significantly in the exercise group. Also the exercise group improved their life satisfaction index score significantly compared with the control group. The results indicated that a functional exercise programme had the potential to improve performance in a number of physiological variables and functional activities in overweight women.
Halliwell (2006) designed a study to examine the effects of exposure to the muscular male body ideal on body-focused negative affect among male gym users and non-exercisers. During the study, it was observed that the impact of media exposure depended on men’s exercise status. Non-exercisers reported greater body-focused negative affect after exposure to images of muscular male models than after neutral images whereas gym users showed a tendency for less body-focused negative affect after the model images than after the control images.

Hamdy et.al (2001) studied the acute effects of regular physical exercise in both the prevention and treatment of diabetes mellitus. They found that the benefits of exercise were increased energy expenditure which combined with dietary restriction could lead to decreased body fat, increased insulin sensitivity, improved long term control of blood sugar level and improved lipid profiles.

Hare et.al (2000) carried out a survey to assess perceptions of certified health fitness instructors and other exercise professionals regarding obesity. The findings which came out from the study include: The majority of exercise professionals believed that normal weight was very important to a person’s health, that physical activity was very important in the treatment of obesity, that they should be role models by maintaining normal weight, that they were obligated to counsel obese persons concerning the health risks of obesity, that they were very competent to prescribe exercise programs for weight loss, and that counselling obese persons on exercise for weight loss was professionally gratifying. The majority of exercise professionals also believed sedentary lifestyles, poor eating behaviour, excessive calorie consumption, and psychological problems play a major role in
most obesity cases. Exercise professionals reported that they received most of their information on weight control from textbooks, college classes, scientific journals, workshops/seminars, and past experience.

IBIS World (2014) also publishes research on the health and fitness industry. IBIS’s ‘Gyms and Fitness Centers in Australia: Market Research Report’ provided the latest industry statistics and industry trends governing the Australian fitness industry, allowing identification of the products and customers driving revenue growth and profits. The latest such report predicts steady growth in the health and fitness industry.

IHRSA’s ‘Health Club Trend Report’ was published by American Sports Data in 2007. The report was based on twenty national consumer surveys conducted every year from 1987-2007. These surveys were designed to identify and analyze general patterns, trends, and relationships within a range of 103 sports/activities and also provided data on health club patronage and membership. The report tracked and analyzed health club membership by demographics, frequency of attendance, activity participation, competitive facility patronage (YMCA, corporate facilities, universities military in-home exercise etc.), and membership fees.

IHRSA’s (2008) ‘Asia-Pacific Market Report’, examined membership penetration rates, market size, market potential, average commercial club monthly membership, market share of top 5 players, number of fitness clubs, economic outlook and more for fourteen countries comprising the Asia Pacific region including Australia, China, Hong Kong, Taiwan, India, Indonesia, Japan,
Malaysia, New Zealand, Philippines, Singapore, South Korea, Thailand and Vietnam.

IHRSA’s ‘International Report: Size and Scope of Key Health Club Markets’, published in June 2011 focussed on the health club industry in the Asia-Pacific region, with a snapshot of mature markets in Europe. Highlights of this publication included: a fitness macroeconomic overview; prevalent club operating models; competitive analysis; individual country market reports; and industry prospects and trends.

IHRSA’s ‘Latin American Report’, published in September 2012 provided the most comprehensive examination of key Latin American health club markets available anywhere. The report featured particular focus on personal trainers and group exercise instructors. The findings predicted growth for personal trainers and group exercise instructors based on several indicators and sources.

IHRSA’s report (2012) ‘The Future is Bright: U.S. Health Club Employment Outlook’ contained several case studies of successful clubs, highlighting some of the recruiting, staffing and retention strategies utilized. The report was divided into five sections: personal trainers and fitness instructors’ employment and trends; job requirements; current compensation and benefits; drivers for growth; and case studies.

IHRSA’s (2013) ‘Employee Compensation & Benefits Report’, last published in February 2013, was based on survey data provided by leading IHRSA member health clubs in the U.S. and Canada. The report provided compensation information for senior management/corporate staff, salaried club-level employees, and hourly club-level employees. Salary information for select job titles
was provided by geographical region, company type, and size in number of units and total annual sales.

IHRSA’s (2013) ‘European Health Club Report’ which is a comprehensive examination of market conditions in Europe. The 2013 report examined market size, health club membership data, dues, penetration and obesity rates in key health club markets as well as the key economic indicators for Euro zone countries. In addition, the report profiled 100 leading club operators in Europe. The publication was divided into four main sections: European Fitness Industry Overview that examined the economy, impact of VAT rates, leading and struggling markets, and drivers for growth with interviews from industry experts in local markets; individual Market Reports: an in-depth analysis of 18 key health club markets in Europe; a section on 13 Emerging Markets poised for growth, and Company Profiles providing a snapshot of 100 leading club companies in Europe.

IHRSA’s (2013) ‘Health Club Consumer Report’ provided detailed insight into the participation trends of both member and non-member consumers in U.S. health club facilities. The report was based on analysis of online interviews conducted with a nationwide sample of individuals and households. IHRSA has links with fitness associations in other countries and helps those organizations to produce, similar reports.

IHRSA (2013) also published Industry Data Survey of Health and Fitness Club ‘Profiles of Success’ within USA which provided detailed information about health and fitness club benchmarks and other aspects of club performance, including membership growth & traffic, facility reinvestment, financial statement data, and more. The
report also contained an overview of the U.S. health club industry as well as a snapshot of member demographics.

IHRSA (2013) has also published ‘Canadian Health Club Report’ on fitness industry in Canada. This report provided a comprehensive overview of the Canadian fitness industry and insights from club operators, investors, experts and other key stakeholders. The report had five sections including fitness industry outlook, club operator insights, Canadian health club survey, Canadian fitness professional survey results and Canadian club operator profiles.

IHRSA (2013) through their annual Global Report ‘State of Health Club Industry’ produced data on the health and fitness industry worldwide. The report consisted of a comprehensive industry overview including input from several industry leaders from independent clubs, large club chains, club associations and federations. The Industry Research section detailed the market size and scope of the Americas, Europe, and Asia-Pacific markets. The Company Profiles section highlighted nearly 300 leading club companies from around the world, including financial and membership information. The last section of the report included supplier profiles, which can provide clubs with useful information about industry-leading products and services.

IHRSA (2014) and The Fitness Industry Technology Council, a non-profit organisation working to promote technology standards, with the help of Fitness Business Council and with support from IHRSA carried out a survey on the adoption of technology by health fitness centers. The findings were presented in the form of report
entitled ‘US Health Club Technology Survey Report’ which highlighted the status of technology adoption by health/fitness centers.

IHRSA and Leisure Trends Group (2014), publish trend reports which prove useful for many reasons: to track past trends, analyze the findings, highlight areas of opportunities, and address what needs to be done to increase member participation. Such report provide the current percentage of Americans that were members of a health club, the main reasons members join, stay at, and leave health clubs. The latest such trend report published in February 2014 focussed on the health club consumer behaviour of Americans of ages 16 and older. The report showed that young Americans were playing a big part in health and fitness club memberships. More than one-fourth (27%) of those in ages 21-30 reported belonging to a club.

Karacabey (2005) emphasised on the importance of exercise in increasing physical efficiency, adequacy and beneficial effects on the general health condition as well as a preventing role against various disease states. The author highlighted the positive effects of regular exercising of aerobic nature on the immune system, protection against diseases as well as on quality of life that would help to emphasize the importance of physical exercise and improve the general view of sports by society.

Katzmarzyk et.al (1999) investigated about the cost of physical inactivity in Canada. The findings of the study were: About two-thirds of Canadians were physically inactive. About $2.1 billion or 2.5% of the total direct health care costs in Canada were due to physical inactivity in 1999. Physical inactivity represented an important public health burden in Canada and even the modest
reductions in inactivity levels could result in substantial cost savings. A sensitivity analysis by the authors indicated that the costs could be as low as $1.4 billion and as high as $3.1 billion. About 21000 lives were lost prematurely in 1995 because of inactivity. A 10% reduction in the prevalence of physical inactivity had the potential to reduce direct health care expenditures by $150 million per year, reported the authors.

Kelleher (1991) stressed the need for an optimal exercise program based on a comprehensive assessment and a written prescription for the type, frequency, duration and intensity of exercise. The study highlighted the role of exercise in the management of diabetes contributing to cardiovascular and psychosocial well-being, weight control and in non insulin-dependent diabetes mellitus.

Kelley and Goodpaster (2001) studied the effectiveness of physical activity in the treatment and prevention of type 2 diabetes. The study indicated that higher levels of physical activity were clearly associated with a lower incidence of type 2 diabetes mellitus.

Kersey and Robert (1993) carried out a research on Anabolic-Androgenic Steroid Use by Private Health Club/Gym Athletes to obtain a descriptive data base about individuals who train at private health clubs/gyms including their strength training habits and methods, their knowledge and use of anabolic-androgenic steroids (AAS), and their demographics. The results from the current research indicated AAS use in about 15% of the participants. Other studies have also highlighted the use of AAS by private health clubs/gym goers.
Lagerstrom (2010) observed that the sedentary lifestyle may be the cause of the health related changes in society and at the workplaces. They noted a reduction of 50% in spinal depression during an 8-h work shift as a result of a change in the daily routine such as standing up when using the phone which does not conflict with breaks or work-time and an improvement of aerobic capacity of 15–20% within 12 weeks by individuals with sedentary lifestyles as a result of walking 20 floors a day. The authors identified the general lack of physical activity in our society as a growing challenge and stressed on the need to develop new strategies and concepts, with strong focus on the laws of nature, such as the stimulus and economising principles, and a focus on people whose primary motive of staying physically active was not necessarily sports or fitness-training. This ‘Active Lifestyle Concept’ by the authors concentrated on establishing a concept where the company’s responsibility was to establish activities and programmes that lead to an individual self-concept and long-term effects concerning a healthy and active lifestyle.

Lam et.al (2005) designed a study to develop the Service Quality Assessment Scale to evaluate the service quality of health-fitness clubs. Through a review of literature, field observations, interviews, modified application of the Delphi technique, and a pilot study, a preliminary scale with 46 items was formulated. The preliminary scale was administered to members of one health-fitness club. From exploratory factor analysis (EFA) of the pilot test data, 6 factors emerged. Next the revised scale (reduced to a 40-item scale) was administered to 10 health-fitness clubs. The data set was split into halves: one for EFA and the
other for confirmatory factor analysis (CFA). Six factors emerged in the EFA: Staff, Program, Locker Room, Physical Facility, Workout Facility, and Child Care. The fit indexes from the CFA indicated that the model was permissible. All the factors had acceptable alpha and composite reliability coefficients. The model was then tested for invariance across gender; 9 items were eliminated due to a lack of invariance for factor loadings or tau coefficients. The 31-item scale with 6 factors displayed sound psychometric properties and invariance for factor loadings and tau coefficients, and could be utilized to evaluate service-quality issues in various health-fitness club settings.

Lee et.al (1999) in their research paper studied on the health benefits of leanness and the hazards of obesity and found out all cause mortality and cardiovascular mortality rates in case of lean men and obese men. They carried out an observational group study. They observed 21925 men, aged 30–83 year, who had a body-composition assessment and a maximal treadmill exercise test. There were 428 deaths (144 from CVD, 143 from cancer, and 141 from other causes) in an average of 8 years of follow-up (176742 man-years). After adjustment for age, examination year, cigarette smoking, alcohol intake, and parental history of ischemic heart disease, unfit (low cardio-respiratory fitness as determined by maximal exercise testing), lean men had double the risk of all-cause mortality of fit, lean men. Unfit, lean men also had a higher risk of all-cause and cardio-vascular disease mortality than those men who were fit and obese.

Lee et.al, (1998, 1999) has shown exercise to be beneficial for individuals of normal weight as well as for those that were overweight.
and obese. The study suggested that obese people should be encouraged to increase their cardio-respiratory fitness through regular, moderate intensity physical activity.

Leifman *et al.* (2011) conducted a study to estimate the prevalence of anabolic androgenic steroid (AAS) use and offers to use among gym users in Stockholm County, Sweden. During the study, a questionnaire was distributed to members at 36 training facilities and 1,752 gym users participated in the study. According to the questionnaire, 3.9% of men reported life time use of AAS, 1.4% use during the past 12 months and 0.4% AAS use during past 30 days. Analyses of individual predictors showed that AAS users were almost always young men, regular weight trainers and more often users of drugs and nutritional supplements. According to the study, there was higher prevalence of AAS use among gym users than in the general population.

Leisure Database Company’s report (2013) *The 2013 State of the UK Fitness Industry Report*, provided information on the development of the health fitness industry during a 12 month period ending March 2013 in UK. The findings of the report showed a growth in the industry with 1.5% increase in value, 2% increase in total number of fitness facilities and 4.5% increase in number of members. However the growth comes at a price as the low cost operators were having an impact on both average monthly membership fees and the yield per member across the industry, as observed in the report. The report also provided information on top operator rankings, membership numbers, club openings etc.

Macfarlane and Thomas (2010) in their review on a research paper entitled, ‘Exercise and diet in weight management: updating
what works’ stated that solving the overweight and obesity problem via appropriate modifications to exercise habits and/or diet appeared easy, but in practice it was inordinately difficult and only a small percentage managed to maintain their weight loss over the long term. They suggested a number of other measures including guidance by medical doctors, dieticians and other allied health professionals to those at risk of overweight/obesity. They supported initiatives targeted at increase in community physical activity to help reduce the prevalence of overweight/obesity, such as the “Change4Life” campaign in the UK and the “Exercise is Medicine” campaign in the USA. The review provided a useful document that could be used to enhance preventive counselling by promoting appropriate changes in lifestyle that will ultimately increase levels of physical activity, as well as reduce levels of overweight/obesity and other associated chronic hypo-kinetic conditions.

McAuley et.al (1995) reviewed and examined the effects of exercise and physical activity on the psychological well-being of older adults. The overall effects of physical activity, the roles of program length, subject sex, age, physical fitness, and measurement were studied. The results of the study reported positive associations between physical activity and psychological well-being with longer programs consistently reporting more positive results.

Mijailovic (2004) carried a study aimed at evaluating the effects of a one-year weight reduction program on obesity and its co-morbid conditions and to make a model for long term weight reducing programs. The participants for the study were divided into two groups. Participants from group A strictly adhered to the prescribed regimen while participants from group B followed their own routine
of diet and physical activity. A year later, a statistically significant mean weight loss was established in both groups but it was greater in group A. The authors concluded that exercise was an effective treatment modality for maintenance of weight loss after successful treatment of obesity.

Miller (1999) in his study observed that the health care professionals most often approached health promotion for large persons in the context that health improvement could be attained only through weight loss. He stressed on the importance of being fit rather than losing weight. He supported the ineffectiveness of traditional diet and exercise programs to reduce body weight and indicated that diet and exercise programs for weight loss were ineffective in producing reduced weight maintenance after a period of 3 to 5 years. He indicated that overweight men and women could become healthy without losing significant amounts of weight. He observed that fitness, not fatness was related to disease and mortality.

NSF (2009) International, a non-governmental organization, coordinated the development of the standards that ensured balanced input from public health officials, consumer representatives and industry leaders (NSF International). Others represented in the development of the standard included manufacturers, trade associations, regulators, program administrators, retailers and other stakeholders from the health and fitness. The standard covered health/fitness facilities that offered activity based health and fitness programs/services. The standard contained requirements related to pre-activity screening; orientation, education and supervision; risk management and emergency policies; professional staff and
independent contractors; compliance with federal and local regulations; operating practices; federal regulations and signage for health/fitness facilities. It was intended to assist in providing a safe environment for those who engaged in activities and programs offered by health/fitness facilities.

Patel et.al (2011) studied to measure women's experience in an aerobic dance class with regard to their descriptions of the general atmosphere, the music, the dance moves and routines, and the instructor. During the study, the participants responded with positive endorsements for all aspects of the overall dance experience, and emphasised the importance of instructor in their experience of the aerobic class. The mental and physical benefits were rated as important for most of the women whilst a much lower percentage rated the social benefit as important.

Pedragosa and Corriea (2009) conducted a study at Technical University of Lisbon, Portugal which focussed on expectations and satisfaction in health and fitness clubs. In this study, global satisfaction measured in long term was evaluated with respect to three constructs: expectorations, facilities and loyalty. The results suggested satisfaction as an intermediate variable that was positively related to various other constructs and of crucial importance in determining the loyalty in HFCs.

Phillips et. al (2012) wrote an article on improvement of physical activity with special reference to the isokinetic or sedentary behaviour of the modern society and its impact on health of American population. He stressed that the American population were not performing intended physical activity and new strategies were needed to bring about change in this arena. He stresses on the role
of health care community in making Americans more physically active. He observed that patients respected their physicians as credible sources of information and looked to them for health-related guidance. Unfortunately, many physicians were not talking to their patients about physical activity and were missing a unique opportunity to raise awareness about its benefits. Exercise needed to be discussed as a serious form of treatment, similar to medication, and should be thoughtfully prescribed to every patient. Physicians needed to be familiar with the level of exercise necessary to achieve health benefits as defined by the Physical Activity Guidelines for Americans. Furthermore, they should be competent in their ability to identify a patient's level of risk for starting or increasing exercise and provide guidance on the frequency, intensity, time, and type of activity necessary to safely elicit maximal health benefits.

Poireir and Despres (2001) in their study observed that obesity was a chronic metabolic disorder associated with cardiovascular disease and increased morbidity and mortality. They recommended encouraging 30 to 45 minutes of physical activity on moderate intensity, performed 3 to 5 days a week. Public health interventions like walking were likely to be the most successful according to the authors. The authors reported that as long as the increase in energy expenditure was sufficient, low-intensity endurance exercise was likely to generate beneficial metabolic effects that would be essentially similar to those produced by high-intensity exercise.

Price et.al (2012) studied to assess the benefits and possible risks of aerobic exercise during pregnancy, using a fitness regimen based on the 2002 American College of Obstetricians and Gynaecologists guidelines for exercise during pregnancy. The study
highlighted the importance of exercise during pregnancy. During the study, inactive women were randomized at 12–14 wk gestation to a group that remained sedentary or to a group that performed moderate aerobic exercise 45–60 minutes, through 36 week gestation. The results showed that as compared with women, who remained sedentary, active women showed improved aerobic fitness and muscular strength, delivered comparable size infants with significantly fewer caesarean deliveries, and recovered faster postpartum. Active women developed no gestational hypertension and reported no injuries related to the exercise regimen.

Proper et.al (2003) critically reviewed the literature based on relevant English-written papers published between 1980 and 2000, with respect to the effectiveness of worksite physical activity programs on physical activity, physical fitness, and health. They supported the implementation of worksite physical activity programs to increase the level of physical activity and to reduce the risk of musculoskeletal disorders.

Purdue University (2013) researched about the academic performance of college students who visited the campus gyms. The results of the study suggested that students who worked out at the gyms were more likely to succeed in the classroom, and get better grades than students who visited less or did not visit at all. The study concluded that students who were motivated by fitness and wellness tended to have better time management skills, and research showed that being fit was good for the mind.

Rattan and Verma (1998) carried out ‘A survey of various health clubs situated in and around Patiala,’ at the Department of Sports Sciences, Punjabi University Patiala. They investigated
various factors related to health clubs including qualification of trainer, location of health club, financial investment, daily supervised time for user, number of trainees and fee charges. They also investigated the facilities provided in the gyms.

Robertson and Vohora (2008) in their study observed that the success of supported exercise programmes to tackle obesity depended in part on the attitudes towards obesity among two key groups of people in a public exercise setting: fitness professionals offering exercise advice, and regular exercisers. In all, 57 fitness professionals and 56 regular exercisers were recruited from gyms across Central England. The study found evidence of a strong anti-fat bias for both fitness professionals and regular exercisers on all implicit and explicit measures (good vs. bad; motivated vs. lazy). This bias was more pronounced for fitness professionals who themselves had never been overweight and who believed personal control dictated body weight. For regular exercisers, a higher level of anti-fat bias was found for females, younger participants and those who had never been overweight. This study suggested that the guidance to support exercise, and combat obesity, may be compromised by the beliefs of those facilitating such programmes.

Rozenek et.al (2002) carried a study on seventy three healthy male subjects randomly divided into 3 groups, to determine the effects of high calorie nutritional supplements and body composition, body segment circumferences and muscular strength, following a resistance training program. Results indicated that high caloric supplements were effective in increasing body mass and fat free mass; when combined with resistance training. However once
individual protein requirements were met, energy content of the diet had the largest effect on body composition.

Sahay and Sahay (2002), presented a research paper on the management of type 2 diabetes. They observed that diet and exercise were primary therapeutic options for management of type 2 diabetes. Dietary management should not only aim to achieve blood sugar control but to normalize dyslipidemia. The authors concluded that exercise improved the condition of a diabetic patient. Exercise especially yoga practice played a role in prevention of type 2 diabetes mellitus.

The Canada Safety Council has also set up ‘Canadian Fitness Safety Standards’ for fitness related personnel, emergency procedures, communicable diseases, pre-screening procedures and signage. They have also set safety standards for special exercising populations like pregnant women and older adults.

Tsitskaria et.al (2006) carried out a literature review on the evaluation of quality of sport-related services as they felt that conceptualization and measurement of quality in the field of sport-related services were still in a formative stage, underlining a certain degree of uncertainty or disagreement regarding the set of criteria or the conceptual model that could adequately describe them. The results of their investigation provided some interesting findings: that the evaluation of service quality of sport and recreation organizations and installations was a multi-dimensional structure. The dimensions seemed to vary from country to country and also among different service sectors. They recommended that a better understanding of the nature of service quality should be a primary concern to all
organizations as the service quality was central to the mission of sport and recreation centres.

Santos et.al. (2013) This study was designed to investigate the effects of regular training on lymphocyte proliferation, plasma cytokine levels, and parameters of neutrophil and lymphocyte death in young women and middle-aged women. Thirteen untrained young women, 12 untrained middle-aged women, 12 trained young women, and 17 trained middle-aged women participated in this investigation. The characteristics measured were lymphocyte proliferation, plasma cytokine levels, and parameters of neutrophil and lymphocyte death. The lymphocyte proliferation of untrained middle-aged women was 30% lower than that of untrained young women. The young women had a significant decrease in the viability of lymphocytes and neutrophils compared with that of middle-aged women. The training prevented the loss of neutrophil viability observed in young women. By contrast, regular exercise caused increases in lymphocyte apoptosis in both young women and middle-aged women and neutrophil apoptosis in middle-aged women only.

Warren et.al (1999) designed a study on sedentary behaviours and its risk and mortality under the title, ‘Sedentary behaviours increase risk of cardiovascular disease mortality in men’. The purpose of this study was to examine the relationship between two sedentary behaviours (riding in a car and watching TV) and cardiovascular disease mortality in men in the Aerobics Centre Longitudinal Study. Participants were 7744 men (20-89 yr) initially free of cardiovascular disease who returned a mail-back survey during 1982. Three hundred and seventy-seven cardiovascular disease deaths occurred during 21 yr of follow-up. After age adjustment, time riding in a car
and combined time spent in these two sedentary behaviours were positively associated with cardiovascular disease death. In men, riding in a car and combined time spent in these two sedentary behaviours were significant cardiovascular diseases mortality predictors. In addition, high levels of physical activity were related to notably lower rates of cardiovascular diseases death even in the presence of high levels of sedentary behaviour. The authors recommended that health promotion efforts targeting physically inactive men should emphasize both reducing sedentary activity and increasing regular physical activity for optimal cardiovascular health.

Wadden et al., 1970 also reported that people that exercise not only experience lower disease risk, they report mental differences such as improved mood. They showed that exercise was beneficial for individuals of normal weight as well as for those that were overweight and obese.

Wing (1999) carried out a research about the effect of exercise and diet on weight loss. The results of the study supported the observation that continued exercise was associated with long-term maintenance of weight loss. During the study randomized trials were carried out. All of the long-term randomized trials supported the above finding. Authors reported that in all of the long-term randomized trials reviewed, weight losses at follow-up were greater in diet plus exercise than in diet only. However, the difference was statistically significant in only two of the six randomized controlled trials.

Zhang et al. (2014) studied on consumer behaviours of commercial health clubs in Liverpool. They carried out a study on consumers about their structures including ages, genders, etc.,
motivation of consumption, and consumption level as well as demand characteristics with the help of questionnaires and interviews. The factors affecting consumer behaviours were also analyzed. The most predictable and accessible segments like young adult, affluent, health or appearance conscious consumers were concluded; their lifestyles were found to easily integrate to leisure activities, and time pressure or financial costs were their key concerns. The authors suggested that targeting marketing strategies of the clubs should be suggested accordingly in order to design service channel, price reasonably, communicate with consumers and provide satisfying environment.