

## *Introduction*

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## **CHAPTER – I**

### **INTRODUCTION**

**“One ounce of practice is worth a thousand pounds of theory”**

**– Swami Vivekananda**

#### **1.1 HEALTH**

Human health encompasses a sound body, a calm mind and a tranquil spirit in general. Healthy life style elongates longevity and rejuvenates the body and mind which is the core importance to human happiness. It is a state where the physical body is free from disease, while wellness refers to an overall balance of a person's physical, social, spiritual, emotional, intellectual, environmental and occupational well-being. Maintaining the health is imperative to live life to the fullest without diseases. Overwhelming evidence exist that lifelong fitness exercise is generally associated with a longer health span, delaying the diseases. During this twenty first digitalized technological world, people lead sedentary life style and prone to fall on many kind of diseases due to physical inactivity. It is one of the key global health challenges as it is associated with adverse effects related to ageing, weight control, physical function, longevity, and quality of life. This change in the quality of life style often leads to sedentary life which impart to many diseases, especially the obesity (**Shrin, 2005**).

#### **1.2 OBESITY**

Obesity is the result of an imbalance between energy intake and energy expenditure every day. Obesity is the excessive or abnormal accumulation of fat or

adipose tissue in the body that impairs health via its association to the risk of development of diabetes, cardiovascular diseases, hypertension, hyperlipidemia, menstrual disorder, joint pains and other psychological disorders. Since obesity is a complex disease and has multifactorial etiology. It is the second most common cause of preventable death. Obesity can be prevented through quality of life which includes weight loss and proper diet. The weight loss should be done properly with appropriate workouts that lead to fitness.

### **1.3 OBESITY AND GIRLS**

Girl children often prone into few diseases during their adolescence stage of their schooling. The recent increase in both childhood obesity and adolescent anorexia nervosa in developed countries has underlined the important consequences that these trends may have on public health, as there is an increased risk that these conditions may become chronic diseases in adulthood (**Patil, et al., 2018**). Generally, the problems of the girl children are unrecognized and uncared for, furthering the disease become burden due to lack of awareness and low confidence to share with their peers or elders in the family.

The obese problem becomes very serious nowadays among girls due to the digital modern lifestyles including nutritional habits, inactivity and socio-economic improvement in an obesogenic environment causes an increased prevalence of obesity. Physical inactivity is a major public health concern since it increases individuals' risk of morbidity and mortality which leads seriously to obesity. The weight management and weight loss activities got vital place in the modern society. Weight loss should be

done properly with apt work outs that lead to fitness. Physical fitness activities seem to be an important component of lifestyle interventions for weight loss and maintenance of ideal weight to prevent from obesity.

#### **1.4 FITNESS**

Fitness refers to the optimal health and overall well-being of a person with the ability to execute daily activities. Fitness through regular exercise and physical activity promotes strong muscles and bones, improves respiratory, cardiovascular health and overall health. Staying physically active can also helps the people to maintain a healthy fitness and thereby to reduce the risk of diseases. Particularly, the student generation in the current era is more likely to fall on digital screen life and they become worsen in real physical life. Students who are physically active tend to have better academic performance, classroom behaviors, cognitive performance and attendance. Many action researches proved that the higher physical activity and physical fitness levels are associated with improved cognitive performance among students. Being physically fit and active is important especially among students as being fit ensures a healthy lifestyle and helps to build self-confidence.

During this 21<sup>st</sup> digitalized technological world, people lead secondary life style and prone to fall on many kind of diseases such as diabetics, obese, blood pressure, cardiac issues and so on. The main reason for this issue merely upon lacking of physical activity even to carry out the daily tasks of life due to technological advancement. Experts, doctors, researchers, physicians' physical education professionals keep advising the people and creating the awareness about the need of physical

activity for wellness and fitness. Fitness can be achieved and maintained through various kind of physical activities such as brisk walking, jogging, cycling, swimming, hiking, dancing etcetera.

## **1.5 DANCE FITNESS**

The word "dance" is all-encompassing, describing numerous activities to move around to the rhythm of music by making a series of steps within a given space, for the purpose of expressing an idea or emotion, releasing energy, or simply taking delight in the movement itself. With the variety of choreography styles and music genres throughout the world, there are numerous ways to stay active through dance. Because of the inclusivity, group fun, the young generations easily come forward to do dance fitness workouts which are incredibly popular nowadays. Dance, on the other hand, is the second most popular leisure time physical activity after walking in women across all ages. Enthusiasts around the world find dance fitness as a creative way to burn calories while moving around to the rhythms of various styles of music and to sweat for fit **(Kimberly et. al. 2016)**

The dance fitness is all about getting a sweat on and having fun while moving the body. Participants show up, work up a sweat while doing their best to follow an instructor, and leave feeling good about their workout. The dance fitness in general equipped to target to enhance the muscular strength, muscular endurance, cardiovascular endurance, flexibility, body composition which are all the main components of fitness.

## **1.6 BENEFITS OF DANCE FITNESS**

Dance fitness workouts supports toning, manages weight, activates muscles, keeps young, improve flexible, promotes body posture, Stimulate blood circulation, assists with cardiovascular health, works memory, offers an accepting environment, increases socialization, boosts energy, helps coordination and balance, reduces stress and develops positive thoughts.

### **1.6.1 PHYSICAL FITNESS BENEFITS**

Regular fitness dance workouts provides physical benefits such as improved condition of your heart and lungs, increased muscular strength, endurance and motor fitness, increased aerobic fitness, improved muscle tone and strength, weight management, stronger bones and reduced risk of osteoporosis, better coordination, agility and flexibility, improved balance and spatial awareness, and improved physical confidence. Also, helps to reduce chronic pain or chronic illness, leads to fitness.

### **1.6.2 PHYSIOLOGICAL BENEFITS**

The physiological benefits associated with regular dance fitness participation range from risk reductions for several diseases and health maladies, to improvements in mobility, fitness, and overall quality of life. It significantly creates greater impact on physiological benefits such as cardio-respiratory endurance and cardio-pulmonary wellness, which lead to fitness (**Hopkin et al., 1990**).

### **1.6.3 PSYCHOLOGICAL BENEFITS**

The fitness dance is a relatively new, but rapidly growing in the field of research. Dance is a great way to exercise and makes the mind to relax in the regular life. When the feet dance along with the beat of the music, the body secretes happy hormones which help to improve your mood. Along with this, fitness dance also helps in reducing the symptoms of anxiety, stress and depression. Fitness dance movements reduce the stiffness of the body, mind and improves mental functioning, overall wellbeing, greater self-confidence, self-esteem.

### **1.7 DANCE FITNESS WORKOUTS AND ITS INTENSITY**

Fitness intensity refers to the amount of physical power that the body uses while performing an activity. Intensity also, means to be the amount of physiological activity the body experience including heart rate, respiration and adrenaline. Intensity is the most important element of a fitness work out. Intensity is described as low, moderate or high level.

Dancing can be a high-or low-impact workout depending on the style of dancing. High impact exercise involves running, jumping, cross fit, hiking, calisthenics activities that cause greater impact on joints and on the feet. Low impact involves stepping, walking, swimming, cycling, spinning, Pilates and other movements that don't make the feet pounding against the ground strongly. To put it simply high-intensity exercise is high impact, high activity for a short period of time. Low intensity exercise, however, is lower impact and lower aerobic activity. The researches confirm

that the implementation of various forms of group fitness program contributed to statistically significant effects in improving functional and motoric abilities of a woman (**Mandarić, 2011**).

## **1.8 DIFFERENT TYPES OF DANCE FITNESS**

Zumba Dance, Aerobics Dance, Ballet-Inspired Dance, Cardio-Based Dance, Slower-Paced Dance, Barre Workouts, Mind-Body Dance, combining dance with other workouts, Funk Aerobics, hip hop workout, masala bhangra dance, striptease fitness, world beat fitness and so on.

## **1.9 AEROBIC DANCE**

Aerobics generally refers to any kind of activity that gets the heart rate up and sustains it there for a period of time. Aerobic dance is the fitness sport that combines the health and figure benefits of jogging with the fun of dancing for the rhythmic music. Aerobic Dance is a type of physical activity in which the large muscles of the body move in a rhythmic way for a sustained period of time in a fun way to get fit (**Hornsby and Albright, 2003**).

It creates a comprehensive fitness routine that supports heart health and weight loss that also known as endurance or cardio training for weight loss and to maintain ideal weight. It is a style of physical movement designed to increase heart rate and improve oxygenation throughout the body. The general recommendation is that aerobic dance should be moderate to vigorous in intensity to start with (**Spiriduso et al., 2005**). The associated training outcomes could be affected by such differences in dance exercise intensity and style.



Aerobic dance could be done with various intensity modes according to the need of the individuals such as high intensity, medium intensity and low intensity pattern of exercises, depending upon the goal of an Individual. It combines fat burning aerobic movements, muscle building exercises and stretching into routines that are performed according to music (**Patrick van der Torre 2018**). Aerobics, meaning "with oxygen," refers to physical exercise to improve cardio respiratory endurance. The ensuing demand for a continuous supply of oxygen creates the aerobic training effect, physiological changes that enhance the ability of the lungs, heart, and blood vessels to transport oxygen throughout the body. Aerobic dance is the fitness sport that combines the health and figure benefits of jogging with the fun of dancing.

### **1.9.1 HIGH INTENSITY AEROBIC DANCE**

'High intensity' aerobic dance entails using the large muscle groups can require 10 to 11 kcal/minute. High-intensity dance aerobics includes fast rhythmic movements such as jumping jacks, running raps, kicking knees, and simulated jump-roping and other forms of leaping with both feet off the ground. High-impact aerobics performed with dance workouts will have leaping off the ground for a fast beat of rhythmic music. The basic rule in high intensity dance is that keep the body moving, jumping, kicking, shaking on the ground. Standard moves high intensity dance is pretty quick, fast, intense and it is all out from of steps (**Stoiljkovic et al., 2010**).

### **1.9.2 LOW INTENSITY AEROBIC DANCE**

Low intensity' dance exercise is usually characterized by less large muscle activity and/or less low extremity impact, and music of slower tempo. Low intensity

Aerobics involves a basic choreographed aerobic dance pattern with entertaining for a slow beat of rhythmic music. Walking, Floor Walking, Slow Jogging, soft step dancing to music are some of the examples for low intensity. Burning calories, improving flexibility and toning-up and having fun happen to be the benefits of low intensity aerobics. The basic rule in low-intensity dance is that one foot always remains on the ground. Standard moves in low-intensity dance workouts include quick lateral steps and forward and back steps combined with toe touches (**Hornsby and Albright, 2003**).

### **1.10 ZUMBA DANCE**

The Zumba fitness is a new kind of dance workout, inspired by Latin American music and Latin American dances with creative steps. (**Perez et.al 2009**). The exercise combines the basic of dance merengue, salsa, samba, cumbia, recreation and other Latin American dances, uses basic aerobic steps, but also enriches their composition of the other dance like hip-hop, belly dancing, Indian and African dance, etc. It is fusion of basic principles of aerobic interval training and strengthening exercises which promote consumption of calories, improve cardiovascular system and strength of the whole body. This modern approach of fitness exercising satisfies goals such as harmony of the body, improving posture and strengthening bone-joint segments of the locomotors apparatus (**Furjan et. al. 2011**). The zumba dance fitness workout makes every session with a new entertainment based on various dance steps with different intensity and form of exercising, what makes the participants more motivated (**Perez et.al. 2009**).

## 1.11 YOGA

Yoga has been practiced in India for over two millennia. Stories and legends from ancient times testify to the existence of yoga, and to the practitioners and divinities associated with it. Indian literature is a storehouse of knowledge about yoga covering every conceivable level. Roughly in chronological order are the vocals (books of Scriptural knowledge), the Upanishada (philosophical cosmologies), and their commentaries; then the Puranas (ancient cosmologies), and the two epics, the Ramayana and the Mahabharatha. The Mahabharatha contains within itself that masterpiece of Indian scripture the Bhagavad Gita. Towards the end of Vedic period comes the aphoristic literature, with the “Yoga Aphorisms” of Patanjali of special interest to yoga students. These are, besides, whole bodies of works both ancient (Pre-Christian) and more modern dealing with various aspects of yoga and yoga philosophy, testifying to the continued relevance of yoga as a discipline (**Mira-Mehta, 1994**).

Yoga is becoming popular activity in different parts of the world among different age category people. For the restless mind, it gives solace, for the sick, it is a boon for a common man, it is the fashion of the day to keep him fit and beautiful. With its multifold advantages, yoga is becoming a part of education. Specialists use yoga to unfold the deeper layers of consciousness in their move towards perfection. Because of its rational basis, the modern medical system has replaced almost all traditional systems of medicine in different parts of the globe. It has proved itself most effective in saving man from the fatal hands of contagious and infectious

diseases. It is here that yoga appears to make a vital contribution to the modern medical system. **(Nagendara, 2005)**

Yoga is the ideal form as it is totally non-invasive, gentle and soothing is most effective. There is no equipment needed. The practice of yoga instills confidence in a person, especially if recovering from an illness. Apart from the asanas and pranayama, the other precepts for good living laid down by patanjali reinforce a healthy body and mind. **(Raman, 1998)**

Practices are effective for prevention of diseases. It lays great emphasis on strengthening inherent defensive mechanism of human body and mind. It develops immunity and resistance in the human body and helps the body and mind in attaining homeostatic balance. The strengthening of defense mechanism and the harmony between mind and body prevents onset of diseases .Yoga helps in channelizing the psychic energy (prana) effectively so that the permanent solution is arrived at by uprooting the cause of the problem (Daniel, 2017).

## **1.12 JUSTIFICATION OF THE STUDY**

Obesity is considered an important public health research topic and could contribute to the detection of health problems beyond medical controls especially among girls. Mostly sedentary lifestyle put the adolescents population at health risk (Guthold, 2016). The literature suggests that varied fitness dances are a suitable training method to enhance the fitness in general. However, young girls with overweight and obese populations have rarely been studied. Therefore, new approaches that address new fitness activities to improve the quality of life are needed.

Generally dance is the favorite form of physical activity associated with health benefits across the lifespan, even at amateur levels of participation. There are numerous forms of fitness dance work outs emerged during the Covid-19 pandemic period. However, it is unclear whether dance interventions are equally as effective as other forms of physical activity. The researcher is a fitness dancer completed courses in aerobics, she was interested to do a research in the field of fitness dancing. Since there is no research showing the effect of varied fitness dance workout combined with yoga among obese girls, it was probingly decided to make an attempt on this areas of research.

### **1.13 OBJECTIVE OF THE STUDY**

- To study the effects of varied dance fitness programme with yoga on selected cardio-pulmonary, physical and psychological variables among school girls.
- To observe the superiority effects of the selected trainings on selected performance parameter of school obese girls.
- To conclude the differences between the baseline to post test effects, the selected three interventions on the selected performance parameters of school girls.

### **1.14 STATEMENT OF THE PROBLEM**

The primary purpose of the study was to find out the “Effects of varied dance fitness programme with yoga on selected cardio-pulmonary physical fitness and psychological variables among obese school girls”.

The secondary purpose of the study was to find out the most effective method of dance fitness programme with yoga to improve the selected performance parameters of school girls.

### **1.15 HYPOTHESES**

The hypotheses formulated in the present study were as follows.

1. It was hypothesized that the high intensity aerobic dance with yoga training would have significant improvement on selected cardio-pulmonary, physical and psychological variables among school girls.
2. It was hypothesized that the low intensity aerobic dance with yoga training would have significant improvement on selected cardio-pulmonary, physical and psychological variables among school girls.
3. It was hypothesized that the zumba dance with yoga training would have significant improvement on selected cardio-pulmonary, physical and psychological variables among school girls.
4. It was hypothesized that varied dance fitness programme with yoga training would have similar changes on selected cardio-pulmonary, physical and psychological variables among school girls.

### **1.16 SIGNIFICANCE OF THE STUDY**

The present study has the social and academic significance in the following aspects.

- I. The study will help to evaluate the effect of varied dance fitness programme combined with yoga on the selected variables of the study.
- II. The study will help to compare the effectiveness of high-intensity aerobic dance fitness training, low-intensity aerobic dance fitness training and zumba

- dance fitness training to determine the superior form of dance fitness in managing obese in girl's children.
- III. The findings of the study may add to the existing source of knowledge with regard to the effect of varied dance fitness programme in the improvement of selected variables of the study.
  - IV. The study will be useful for physical education teachers, coaches and public to identify and select appropriate training programme for students to make the physical education programme as more enjoyable form of activity.
  - V. Findings of this research study would give a basic knowledge to the trainers and fitness leaders to envisage and conduct further research in various training programme, to enhance the physical fitness for school girls.

### **1.17 DELIMITATIONS**

The study was delimited to the following

- i. The study was restricted to school girls from Sri Saradha Vidhyalaya Girls Higher Secondary School, Holy Angles Girls Higher Secondary School, St. Joseph Girls Higher Secondary School in Salem district. The age of the subjects was confined to the range of 14 to 17 ducted on.
- ii. In distribution of samples to experimental group used in the study, the present study was confined to equal number of samples. Thus, each group consisted of 20 subjects.

- iii. The duration of training program for the present study was confined to ninety minutes per session, three days a week with about twelve weeks as total period.
- iv. The variables were delimited to selected cardio pulmonary variables namely resting pulse rate, VO<sub>2</sub> Max, Vital capacity and breath holding time.
- v. The variables were delimited to selected physical fitness such as muscular strength and endurance, cardio respiratory endurance, flexibility, and body composition.
- vi. The variables were delimited to selected psychological variables namely Stress, Anxiety, Achievement Motivation and Self-concept.
- vii. The data were collected prior and after the 12 weeks of training programme.
- viii. Further, the study was delimited to yogic practices with selected asanas, pranayama and Surya Namaskar only chosen.

### **1.18 INDEPENDENT VARIABLES**

High Intensity aerobic dance with yoga (HI)

Low intensity aerobic dance with yoga (LI)

Zumba dance with yoga (ZG)

Control Group (CG)



## **1.19 DEPENDENT VARIABLES**

### **1.19.1 Cardio-pulmonary variables**

- I. VO<sub>2</sub>max
- II. Breath holding time
- III. Resting heart rate
- IV. Vital Capacity

### **1.19.2 Physical fitness variables**

- I. Body composition
- II. Flexibility
- III. Muscular Strength
- IV. Cardio respiratory Endurance

### **1.19.3 Psychological variables**

- I. Stress
- II. Anxiety
- III. Achievement Motivation
- IV. Self-concept

## **1.20 LIMITATIONS**

- i. Certain factors such as life style, rest period, day to day activities, family factors and intake of medicine were not taken into consideration.
- ii. Socio – economic background was not taken into consideration.
- iii. No attempt was made to control the factors such as heredity and environmental factors during the training period.
- iv. The subject's previous experience in physical activities and yogic practices were not taken into consideration.

## **1.21 DEFINITION OF TECHNICAL TERMS**

### **1.21.1 VO<sub>2</sub> max**

VO<sub>2</sub> max is the maximum volume of oxygen that by the body can consume during intense, whole-body exercise, while breathing air at sea level. This volume is expressed as a rate, either litter per minute (L/min) or millilitres per kg bodyweight per minute (ml/kg/min). Because oxygen consumption is linearly related to energy expenditure, when we measure oxygen consumption, we are indirectly measuring an individual's maximal capacity to do work aerobically (**Stock and Getty, 1990**).

### **1.21.2 Breath holding time**

The length of time a person can hold his or her breath. It is used as a rough index of cardiopulmonary reserve (**The American Heritage Dictionary, 2006**).

### **1.21.3 Resting heart rate**

The pulse rate is a wave of increased pressure which is felt at the arteries when blood is pumped out of the heart. It is not the blood pumped by the heart into the aorta that is felt, but the pressure transmitted from the aorta which travels more rapidly than blood (**Pearce, 1997**).

### **1.21.4 Vital capacity**

Vital capacity is the maximum volume of air that can be forcefully exhaled from the lungs following a maximal inhalations (**Shaver, 1982**).

### **1.21.5 Body composition**

Body composition refers to the relative proportion of lean body mass (LBM) and body fat mass (BFM) within the body (**Marriott, 1980**).

### **1.21.6 Flexibility**

Flexibility is the range of motion around a joint. Good flexibility in the joints can help prevent injuries through all stages of life (**Johnson and Nelson, 1982**).

### **1.21.7 Muscular strength**

Muscular strength refers to the ability of the muscle or of muscles to perform repeated contractions against a light load for an extended period of time (**Mathews, 1981**).

### **1.21.8 Cardio respiratory endurance**

Cardio respiratory endurance is the ability to exercise the entire body for extended period of time without undue fatigue (**Johnson and Nelson, 1982**).

### **1.21.9 Stress**

Stress is associated with a mental/ emotional/ physical state produced within an organism in response to a stimulus (whether internal or external) that is perceived as a threat (stressor) (**Selye, 1956**).

### **1.21.10 Anxiety**

Anxiety is a multisystem response to a perceived threat or danger. It reflects a combination of biochemical changes in the body, the patient's personal history and memory, and the social situation (**Masi and Gabriele, 2004**).

### **1.21.11 Achievement motivation**

Achievement Motivation is one's perception of ability forms the basis of a re-conceptualization of motivation for sport achievement (**William and Dolores, 2013**).

### **1.21.12 Self-concept**

Self-concept is the mental and conceptual awareness and persistent regard that sentient beings hold with regard their own being (**Gammage and Hall, 2001**).