Chapter I

INTRODUCTION

Background of the Study

Obesity is accumulated excess of adipose tissue in human beings and resulted as one of the public health problems in the world. (Galuska, et. al., 1996; Hodge, et. al., 1996; De, Onis 2000) Obesity and overweight develops if there is a difference between more calories intake and expenditure (Ogden, et. al., 2003; Troiano, et. al.,1955) and relation to health hazards in children (Morgan, et. al., 2002). In developed countries, the existing of obesity has increased in all most all people especially for high socio-economic level. Moreover, in the last twenty years few developing nations are having obesity problem in women and children. The overweight problem is enhancing among children and declared as an epidemic and health problem in many countries. It has been reported that children and adolescents are having body mass index higher (Ogden, et. al., 2002). The overweight is increasing because of frequent eating and may lead to weight increase and obesity (Stice, et. al., 2002).

Furthermore, in India, childhood obesity is the major problem in urban areas and survey report indicated the obesity existing among school children in major cities. (Ramachandran, et. al., 2002). It was found out that the development of obesity / overweight in childhood used to lead many chronic diseases (Dietz 1998). It was reported in many studies that the overweight children are likely to become overweight adults (Serdula, et. al., 1993).

As many studies conducted worldwide show increasing trend of obesity among school children, hence, it is vital to find out the intervention which will be suitable for Indian preadolescent school children to overcome the problem of obesity. In this context, Indian traditional system of yoga therapy as a lifestyle modification or naturopathy seems to be effective. The researcher of this study, therefore, intends to see the effect of yoga and naturopathy in controlling obesity among Indian school children.
1.2 Rationale of Yoga and Naturopathy for controlling obesity

Obesity is a burning problem globally. It has been identified as a banner to good health. In reality it is obesity the causes of other serious problem such as low level of confidence poor self-esteem. Further, obesity increases the risk of mortality rate all over the world.

Though many advertisements in daily newspaper and media claim to treat obesity, in reality such claims are in vain, they only provide temporary solution to obesity, once treatment each over the problem of obesity irrupt automatically accompanied by other associated health problem.

Here yoga may play a vital role in controlling obesity and many of the controlled experiments on yoga done earlier could prove it. The mechanism of yoga towards controlling obesity is that yoga involves both physical and mental therapy. Since yoga has a strong base for humanity, modern researches could prove its many claims. It is obviously true that the aging process can be slowed down by practicing yoga keeps the body fit clean and flexible. To get maximum benefits from it, one must practices yoga in combination with pranayam and dhyana.

Moreover continuous practice of yoga helps to keep the body freeform aliment such as diabetes blood pressure asthma etc. various laboratory. Tests done in this regard proved the yoga increase abilities of conscious controlling over involuntary organ's function.

Yoga brings a state of homeostasis and a balance between the nervous and endocrine system. Yoga is used both as curative and preventive measures. The main aim of yoga is to achieve mental peace and improved concentration level.

The practice of yoga brings and awareness about the interdependence among emotional, mental and physical level. The ultimate goal of yoga is to unite the physical, mental, intellectual and spiritual levels within human being. Many investigations reported that continuous practice of yoga helps in controlling weight. There are some asana which
control the hormonal secretion of gland which are specially associated with weight management, such as shoulder stand and fish posture are specific for thyroid gland that directly impudence the fat metabolism of the body.

Yogic practices moreover also control anxiety level and their by anxious eating. Breathing exercise in yoga increases oxygen intake to the body cells, that results in increased oxidation or burning up fat cell. The burning fat cell depends on the intensity of breathing. Thus, yoga can very well help to control obesity in harmonizing the balance of body and mind.

Naturopathy is another traditional system in India to achieve good health. It provides the treatment for curing all hypes of aliment including obesity treatment through changing a person’s diet. These changes diet provide relief to them in improved their life style

Obese persons may opt for such treatment to take recourse to trying alternative obesity treatment methods. Ample of research investigations are being conducted in this direction. In really one should know that naturopathy does not help anyone to control weight over night as done in obesity treatment surgery. It helps the person to lose weight gradual and achieve ideal body weight. In fact the main advantage of the naturopathy is to attain and maintain ideal body weight even after the desired body weight has been achieved.

Naturopathy is considered as the best obesity treatment option as it has been proved an effective measure for obese to regain normal body weight without any side effect and the result achieved through it is more permanent as compared to surgeries and other weight loss mediation.

Thus, Yoga and Naturopathy strive to increase self-awareness on both a physical and psychological level. Patients who study yoga learn to induce relaxation and then to use the technique whenever the health complaints appear. Practicing yoga can help chronic sufferers to actively cope with their health complaints and help overcome the negative feelings. Stretching and breathing exercises of yoga have deep effect on both mental and physical energy and improved mood. Naturopathy also has the similar approach but the methods of
treatment consider application of natural means. It seems both yoga and naturopathy may prove complementary to each other in treating obesity and their inclusion as training intervention in the present investigation seems to be rationale and justified.

1.3 Statement of the Problem

The direct health costs of childhood obesity can only be felt in the next generation of adults (Lobstein, *et. al.*, 2004)\(^{12}\). Obesity appears to reduce life expectancy, particularly when occurring in young adults (Fontaine, *et. al.*, 2003)\(^{13}\), and may soon exact the highest toll of all causes of preventable mortality (Mokdad, *et. al.*, 2004)\(^{14}\). One study revealed that hospital costs for obesity-related disorders in children and adolescents have more than tripled in the last two decades (Wang & Dietz 2002)\(^{15}\). Moreover, few studies have reported a great association among childhood obesity and the risk of adult obesity as well as the risk of chronic diseases such as hypertension, diabetes, hypercholesterolemia, cardiovascular disease, and cancer (Hubert, *et. al.*, 1983; Lew 1985)\(^{16, 17}\).

There is an association between obesity and an orthopedic problem has found (Messier, *et. al.*, 1994)\(^{18}\). Body mass index and osteoarthritis have a link (Manek, *et. al.*, 2003)\(^{19}\). It shows that the obese individual are prone to suffer from musculoskeletal pain, knee pain, mobility and the joint surgery related to osteoarthritis (Coggon, *et. al.*, 2001)\(^{20}\).

Observing these problems in relation to obesity and overweight, the present researcher has planned this study to determine the impact of selected yogic practices and naturopathy treatment in obesity among school girls.

1.4 Problem and its Relevance

Accumulating evidence suggests that their existing relationship between physical activity, lifestyle changes and health status with better health and quality of life. At present government launched in number initiatives programs specifically designed for schools that promote physical activities change in dietary intake that reduces obesity children. In fact, it has been reported that the cardiovascular fitness of non obese children is better than the obese
children (Mastrangelo, et. al., 2008). Furthermore, it has been seen that several hormones play important roles in keeping body weight stable (Campfield, et. al., 1998). Leptin which is newly discovered hormones that regulate body fat (Zhang, et. al., 1994). The 16-kDa peptide circulates in plasma in a concentration highly correlated with body fat mass (Maffei, et. al., 1996). Physical activity may be important for controlling body weight, and to increase the resting metabolic rate (Maehlum, et. al., 1986; Bahr, 1992). Body weight is reduced by performing exercises is related in reducing the concentration of leptin in middle-aged obese women (Kohrt, et. al., 1996).

With information available information, the present investigator sought to specially design a standard yogic practices and naturopathy treatment to control morphological and physiological biochemical variables associated with obesity. Therefore, this study is entitled; “Effect of Yoga and Naturopathy on Selected Morphological and Physiological Biochemical Variables among Obese Girls” has been undertaken.

1.5 Objectives of the Study

This study has been conducted considering the following objectives:

- To locate the obese preadolescent school girls.
- To develop program of yoga and naturopathy especially for the obese preadolescent school girls.
- To study the effect of yoga training, naturopathy treatment and their combined therapy for controlling morphological, physiological and biochemical characteristics of obesity in preadolescent school girls.

1.6 Hypotheses

On the basis of ample of research evidence available so far, the researcher has formulated the following hypotheses:
H1: Status of morphological, physiological and biochemical characteristics of obesity of the obese preadolescent school girls participating in yoga, naturopathy and yoga plus naturopathy programs would be improved.

H2: Combined training i.e., yoga plus naturopathy intervention would be superior to the training of yoga and naturopathy alone for improving overall biochemical variables in obesity.

1.7 Delimitation of the Study

This study has been delimited as follows:

- Female school obese girls were the subjects of this study.
- The age of the subjects’ ranged from 11-12 years, who are studying in the schools.
- For survey, the data were collected from the schools situated in Lonavala city (Maharashtra) and its adjacent areas.

1.8 Scope and Limitations of the Study

This study has a very wide scope, because it has been designed in such a way so that it will help other researchers, to conduct further studies in this field. Moreover, similar studies can be done to establish the effect of yoga and naturopathy for improving obesity related problems among school children and the people of higher age group too. Although there has been a large scope, the present study has following limitations:

- The researcher could not control the diet and life style of the subjects beyond the school hours during experiment.
- This study could not extend for the students above the age of 12 years, studying in the schools situated in the state of Maharashtra.
Some of the obese girls had menstruation cycle; they were also included in this study. However, special care was taken by restricting them for 4-5 days during the cycle.

The researcher could not test all the biomarkers of obesity.

1.9 Significance of the Study

As Yoga has become an emerging need of human globally, a need to improve health and fitness has been felt to study the significance of Yoga in controlling obesity of the obese population. Similar needs to control obesity of preadolescent girls may be stressed upon with the result of the present study.

Nowadays Naturopathy, originated in India, has become a parallel non-pharmacological system in alternative medicine which has been claiming to treat obesity. The result of this study would contribute to establish evidence regarding the role of Naturopathy supportive to control obesity.

The Yoga classes are being conducted in few schools, whereas many such schools do not implement Yoga at all in their curriculum transaction, hence this study is significant to re-establish the importance of Yoga in schools. Moreover, the present study will contribute a research-based schedule which would be more effective in controlling obesity of preadolescent girls.

The same schedule may be useful for the adolescent obese girls to control obesity.

1.10 Operational Definitions of the Terms used

Yoga

"Yoga is a system that benefits the body, mind and spirit by teaching self-control. It is a series of postures along with breathing, relaxation and mediation. Yoga is an efficient method of toning muscles and vital organs. It is the ideal method of ensuring good health and fitness. It brings a state of homeostasis, which leads towards a well-balanced personality. The
major techniques of Hathayoga are asanas, pranayama, bandha, kriyas and mudra. The ultimate goal of yoga is self-realization so that each individual can attain his or her complete physical, emotional, mental and spiritual potential”.

**Obesity**

"Being obese means so much accumulation of body fat that one’s health is in danger. Obesity leads to many serious problems such as type 2 diabetes, heart disease, high blood pressure, cardiovascular risk. Because of these risks, it is important to lose weight. It is not possible to change the eating habits at ones. But one can do it if there is a proper plan. Obesity can be judged by measuring body mass index, of a person. The BMI is a combination of height and weight. If the value of BMI is 30 or higher the health is in danger. But for Asian, the values are BMI is fixed at 27.5 or higher."

**Naturopathy**

"Naturopathy is a natural process for achieving natural remedies and increase body's vital ability to heal and maintain itself. It encourages Naturopathic treatment rather than use up medicine surgery and drugs."

**Morphological**

"Morphological term is used to relate the shape, structure and functioning in humans".

**Biochemical**

"Biochemical is a term used to relate the chemical processes that are involved in living organisms".
REFERENCES


28. *medical-dictionary.thefreedictionary.com/Yoga*

http://www.naturopathy.co.in

http://en.wikipedia.org/wiki/Morphology_%28biology%29

www.thefreedictionary.com/biochemical