EFFECTIVENESS OF VIDEO ASSISTED AEROBIC DANCE THERAPY ON REDUCTION OF BODY MASS INDEX AMONG OBESE WOMEN RESIDING IN SELECTEDVILLAGESAT TIRUNELVELI DISTRICT.

DISSERTATION SUBMITTED TO

THE TAMILNADU DR. M.G.R. MEDICAL UNIVERSITY

CHENNAI

IN PARTIAL FULFILMENT FOR THE DEGREE OF

MASTER OF SCIENCE IN NURSING

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BY

Mrs. SARASWATHI. G

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ABSTRACT

An experimental study to assess the effectiveness of video assisted aerobic dance therapy on reduction of Body Mass Index(BMI) among obese woman residingin selected villages atTirunelveli District was conducted by **Mrs. G. Saraswathi** in partial fulfillment of the requirement for the degree of Master of Science in Nursing at Sri. K.Ramachandran Naidu College of Nursing,under the TamilnaduDr.M.G.R. Medical University,Chennai in 2012.

Obesity is an abnormal increase in the proportion of fat cells. Obesity is the second leading cause of preventable death. Lack of physical exercise is another factor that contributes to weight gain and obesity. There is a reduction in physical activity, both in the workplace and at home. Obesity is a serious medical condition this needs urgent attention throughout the world.Obesity is harder to treat in adults than in children. This can be achievedby dietary changes, increased physical activity and a combination of both.Increased physical activity is an important part of weight reducing program. Regular physical exercise is the key to increased energy expenditure. Dance aerobics is an exercise that combines the rhythmic steps of aerobics with graceful dance movements. During muscular exercise, when large amounts of lactic acid escape as a result of glycolysis. The glycogen stored in the muscle and it will beconverted in to glucose by the process of glycolysis.

Objectives of the study were:

➢ To assess the pretest level of BMI among obese women of experimental and control group.

- ➢ To find out the effectiveness of Aerobic Dance Therapy on reduction of BMI among obese women in experimental group and control group.

- ➢ To compare the pre-test and post-test level of BMI among obese women in the experimental group.

- ➢ To associate the post test level of BMI among obese women in experimental group with their selected demographic variables.

- ➢ To associate the post test level of BMI among obese women in control group with their selected demographic variables.

Hypothesesof the study were:

All hypotheses were tested at 0.05 levels.

- H_1 Meanpost test level of BMI among obesewomenin experimental group was significantly lower than the mean post test level of BMI among obese women in control group.

- H_2 There was a significant difference between pre test and post test level of BMI among obese women in experimental group.

- H_3 There was a significant association in the post test level of BMI among obese women of experimental group with the selected demographic variables.

- H_4 There was a significant association in the post test level of BMI among obese women of control group with the selected demographic variables.

The study was based on **Modified Dorothai Johnson** behaviormodel. A true experimentalpre test, post testcontrol group design was used in this study .This study was conducted in selected villages at Tirunelvelli district. Sixty obese women were categorized into mild, moderate andsevere based on BMI scoring and they were randomly assignedinto experimental group (N=30) and control group (N=30). The

samples of experimental group were belongs to Thiruvannathapuram village.The samples of control group were belongs to Natham village. The data were collected from 02.04.2011 to 30.04.2011.The experimental group had undergone physical activity (Aerobic Dance Therapy) for the period of 20 consecutive days where as the control group did not. BMI scale was used to categories obese women based on body weightduring pre test. Interview method was used to find the demographic data .The data were analyzed using descriptive and inferential statistics.

The significant findings of the study were:

❖ The post test level of BMI among obese women in experimental group was significantly lower than the mean post test level of BMI among obese women in control group. (t = 1.82, p< 0.05).

❖ The mean post test level of BMI among obese women in experimental group was significantly lower than the mean pre test level of BMI. (t = 12.04, p < 0.05).

❖ There was no significant association between the post test level of BMI among obese women in the experimental group and control group with their selected demographic variables except age.

On the basis of findings of the study it is recommended that,

1. The similar study can be conducted with larger samples for better generalizations.

2. A comparative study can be conducted by using aerobic dance therapy and other non pharmacological intervention in weight reduction.

3. A study can be conducted to assess the effectiveness of aerobic dance on improvement of cardiac and respiratory function, reduce arthritis pain, mental stress.

4. A study can be performed by developing a self-instructional module on weight reduction which enables the care givers to become aware of non-pharmacological interventions.

5. A further study can be conducted to assess the knowledge, attitude and practice towards obesity through the complementary and alternative therapies among nursing personnel.

Recommendation based on the suggestion of the study subjects,

1. Nurse and health care providers play a vital role in motivating the obese women to practice aerobic dance therapy in the community.

2. Community health nurse need to take up the responsibility to create awareness among the obese persons regarding weight reduction and complications of obesity.

CONCLUSION

The present study were assessed the effectiveness of video assisted aerobic dance therapy on reduction of BMI among obese women in selected villages at Tirunelveli District. The result showed that there was a significant association between the aerobic dance therapy on reducing BMI among obese women. On the basis of this study the investigator were concluded that aerobic dance therapy reduces the level of BMI among obese samples. Therefore the investigator felt that more importance should be given to the assessment of BMI range among obese samples by using BMI assessment scale following which selected nursing intervention can be given as a physical activity measure to enhance reduction of BMI among obese samples. It can be easily performed by the individual and cost effective.

CHAPTER I

INTRODUCTION

"Hyperactive fork and Hypoactive footmake one obese"

-Mongo (2004)

BACK GROUND OF THE STUDY

Obesity is an abnormal increase in the proportion of fat cells. Weight gain during adult hood is characterized predominantly by adipocyte hypertrophy, a process by which adipocytes can increase their volume several thousand –fold to accommodate large increase in lipid storage. **(Sharon, L.Lewis, 2009).**

Obesity is the second leading cause of preventable death. Obesity is a societal problem as much as a complex medical concern, due to adverse health conditions related to weight gain and the associated expenses for health care. The percentage of young people who are overweight has tripled since 1980**.(Center for disease control and prevention, 2006.)**

Obesity is often expressed in terms of the body mass index. Overweight is usually due to obesity but can arise from other causes such as abnormal muscle development or fluid retention**.(Aykroyd, W.R, Mayer, 1968.)**

There is strong evidence that a genetic predisposition to obesity.Overweight result from a complex interaction between genes and environment. The heritability of obesity estimated from twin studies is high, with only slightly lower values in twins raised apart than in those raised together. Estimates of obesity as an inheritance of 50%.**(Malis.Cet.al, 2005.)**

The most common form of obesity is considered to be polygenic arising from the interaction of multiple genetic and environmental factors. Regulation of eating behavior, energymetabolism,and body fat metabolism is controlled by signals from the periphery that act on the hypothalamus.**(Broberger C,2005.)**

Obesity is associated with increased circulating plasma levels of leptin, insulin,and Ghrelin,and decreased levels of peptide.Interaction of these hormones and peptides at the level of the hypothalamus may be an important determinant factor to obesity**.(Vendrell J et al., 2004).**

Environmental factors play an important role in obesity.In today's culture there is greater access to food, particularlyprepackaged andfast foods, as well as soft drinks, which have poor nutritional quality.Eating outside of the home also restricts the ability to control the composition and quality of food.**(AllisonDB,MatzPE, 2001.)**

Eating habits (eg. eating in between meals, preference to sweets, refined foods and fats, soft drinks and fast food/junk food)which have poor nutritional quality.Because these substanceare having more caloric value but low in nutritional value.**(WHO, 2003).**

Lack of physical exercise is another factor that contributes to weight gain and obesity. There is a reduction in physical activity, both in the workplace and at home. Technology and labor saving devices, Americans are expending less energy in their everyday lives. **(MC CanceK,Huether SE, 2005).**

Elimination of physical education programs in elementary and secondary schools and increased time spent playing video games and watching TV have contributed to the increase in sedentary habits.Socioeconomic status can affect obesity

in a variety of indirect ways. People with low incomes may buy food that is less expensive, but the food may have poor nutritional quality and greater caloric content.Low-income residents may be more likely to live in environments that do not accommodate outdoor activities(eg.tennis,swimming pools).Gyms tend to be attended by more affluent individuals.**(OliverL,Hayes MV, 2005).**

The emotional component of the tendency to overeat is powerful. The social component of eating develops early in life when food is associated with pleasure and fun at such events as birthday parties, Thanksgiving, and religious holidays. All of these factors must be included when considering the etiology of obesity.**(National institutes of health,2003.)**

Mortality rate rises as obesity increases, especially when obesity is associated with visceral fat.In addition to these problems, obese patients have a reduced quality of life.Fortunatelymost of these conditions can improve if an individual loses weight.**(Kern P,Rasouli N,2006.)**

Obesity is a significant risk factor for predicting cardiovascular disease in both men and women. Obesity, especially androidobesity, is associated with increased low density lipoproteins (LDLs) and triglycerides and decreased high density lipoproteins (HDLs).Obesity is also associated withhypertension. Hypertension can occur because of increased circulating volume, abnormal vasoconstriction, decreased vascular relaxation, and increased cardiac output.**(Daniels.J, 2006).**

Severe obesity may be associated with sleep apnea and obesity hypoventilation syndrome. Clients also have reduced chest wall complication, increased work of breathing, and decreased total lung capacity and functional residual

capacity. Weight loss can bring substantial improvement in lung function. **(Latner.J,Stunkard.A.J,2005.)**

Hyperinsulinemia and insulin resistance are common features of obesity.Obesity is a major risk factor for type 2 diabetes mellitus.As many as 80% of clients with type 2 diabetes mellitusare obese. Weight loss and exercise are associated with improved glucose control amongdiabetes mellitus. **(National Heart Lung and Blood Institute, 2000.)**

Obesity is associated with the increased incidence of osteoarthritis, probably because of the trauma to the weight bearing joints. Hyperuricemia and gout are often found in people who are obese. **(Dansinger.J.et. al, 2005)**

Gastro esophageal reflux disease and gallstones are more prevalent in obese clients Non- alcoholic steatohepatitis (NASH) is more common in obese clients. In NASH lipid is deposited in the liver, resulting in a fatty liver. Weight loss can improve NASH. **(Ello-Martin.JA Rolls.BJ, 2005.)**

Obesity is one of the most important known preventable causes of cancer. The underlying mechanisms are difficult to determine. The risk of breast, endometrial, ovarian, and cervical cancer is increased in obese women. Obese men have higher mortality rates with cancer of the prostate. Waist circumference is associated with colon cancer risk in both men and women.**(Korenkov M., et.al, 2005).**

Obesity can be classified based on body weight. It can be measured in many ways such as Body mass index, Ponderel index, Broca index, Lorent'z formula and corpulence index.**(K.Park 1999).**

The individuals with a Body mass index (BMI) of 25 to 29.9 kg/m^2 are classified as being overweight, those with value of 30 kg/m^2 or more are classified as obese, and those with a BMI of more than 40 kg/m^2 are classified as morbidly obese. Women's are more likely to have a BMI over 35kg/m$^{2.}$ **(Nhanes, 2004).**

Waist circumference (WC)isanother way to assess and classify weight.The waist measurement is divided by the hip measurement to calculate the ratio.The waist hip ratio of < 0.80 is optimal. WC is ≤ 40inch(102 cm)in men and≤35inch (88cm) in women is classified as obesity**. (National Heart Lung and Blood Institute,2000).**

Individuals whose fat is distributed over the abdomen and upper body(neck, arm, and shoulders)or abdominal fat accumulation are classified as Android obesity.In that the person become apple shaped body.Whose fat is primarily located in the upper legs pear shaped body are classified as Gynoid obesity.

Obese individual have a reduced quality of life. Cardiovascular health risk associated with obesity, hyperlipidemia,sudden cardiac death, right sided heart failure, left ventricular hypertrophy, coronary artery disease, deep venous thrombosis,hypertension, cardiomyopathy etc. Metabolic health risks are Type 2 diabetes mellitus, metabolic syndrome,poly cystic ovary disease etc.

Reproductive (women) health risks are associated with menstrual irregularities, infertility,Gestational diabetes,overdue births,induced labors, and prolonged labor etc, and Man reproductive risks are Hypogonodism and Gynecomastia.

Respiratory related health problems are obesity hypoventilation syndrome, sleep apnea,Asthma,and pulmonary hypertension .Musculoskeletal system problems

are Osteoarthritis,Impaired mobility and flexibility, Gout, Lumbar disk diseases and Chronic low back pain etc. And also obesity is important known preventable causes of cancer such as Endometrial, breast, cervical, ovarian, uterine, and gallbladder cancer among women. Colorectal cancer is common in both genders. Prostate cancer is common in men. Psychological health risk are associated with obesity are Depression, Lowself esteem, Risk of suicide, and Discrimination etc,**(Sharon L. Lewis, 2009).**

NEED FOR THE STUDY

In worldwide many countries have experienced inobesity rates have been increased over the last 10 – 20 years,over the past decade levels have increased on average between 10 -40% .In England the prevalence of obesity has doubled since 1980. **(SeidellandFlegal, 1997).**

Based on current trends, it is predicted that levels of obesity will continue to rise unless action is taken now. The WHO recently stated the growth in the number of severely overweight adults is expected to be double that of overweight during 1995 – 2025.**(WHO, 1998).**

Obesity prevention is clearly most cost effective than treatment, both in terms of economic and personal costs. Health care providers and policy makers need to appreciate the importance of obesity and its prevention, and develop effective polices and programmers to prevent obesity.**(Gopalan C,2000).**

Obesity is a serious medical condition which needs urgent attention throughout the world. Obesity is harder to treat in adults than in children. The control of obesity centers around weight reduction .This can be achieved by dietary changes, increased physical activity and a combination of both.**(WHO, 2002).**

The proportion of energy dense foods such as simple carbohydrates and fats should be reduced; Thefiber content in the diet should be increased through the consumption of common unrefined foods adequate levels of essential nutrients in the low energy diets should be ensured, and reducing diets should be as close as possible to existing nutritional patterns. **(Tasher T, 1986)**

Now a day's body image has become an important part of our life. Body image is a person perception,thoughtand feeling about his or her body.Personal appearance is very important to most of us. It may influence how we feel about ourselves and how we interact with others. **(Baron and Byrne, 2000).**

Body image is a product of learning. We don't have concept of body image at birth; it develops over our life time. Parents make the greatest contribution to our self image.**(RichardonI, Rehr,2001).**

Body image is influenced by body weight. The study explored the effect of body mass index (BMI) on body image. They found that respondents with high body mass index exhibit greater body dissatisfaction.**(MC CabeandRicciardeliI ,2001).**

Diet therapy is another way to reduce the body weight. A diet that includes adequate amounts of fruits and vegetables provides enough bulk to prevent constipation and meets daily vitamin A and C requirements. Lean meat, fish and egg provide sufficient proteins, as well as the B complex vitamin.Restricting dietary intake so that it is below energy requirements is an effective way to reduce body weight.**(Griffith JL,et.al,2005).**

Honey is opposite to sugar.Sugar actually makes fatter but honey is only sweet tasting substance.Honey is anti fat substance,it added with lemon juice is helpsto lose

weight .It is a one of the natural remedy for losing body weight**. (Online Baby info center 2010).**

The most stubborn fat in the body resides in the abdominal area. The diet and exercise are not enough to remove fatty deposits that accumulate around the stomach area.That people turn to cosmetic surgery such as tummy liposuction or tummy tuck.**(Med line plus2009).**

Increased physical activity isan important part of weight reducing program. Regular physical exercise is the key to increased energy expenditure. A reduction in 5- 10 percent of body weight is recommended as an initial goal.**(WHO, 2003).**

Above mentioned researches shows that obesity leads to cause physical, social, psychological problem. In present study an attempt had been made to see the body mass index, after aerobic dance therapy.

In this competitive world, many people find it hard to dedicate time for physical activities like exercises, although one of their first priorities is to stay in perfect shape. Here comes the easy method of maintaining a perfect figure dance aerobics. As the name suggests, dance aerobics is an exercise that combines the rhythmic steps of aerobics with graceful dance movements. It can be broadly divided into four types high-impact exercises, low-impact exercises, step aerobics and water aerobics. High impact exercises involve intense jumping actions that are synchronized with the rhythmic beats of the music being played.

Low impact exercises, the second type of dance aerobics, involves less jumping action, but more of footwork, which are coordinated with the rhythm of the music being played.

Dance exercise is an aerobic activity that works major muscles during sustained activity. Aerobic exercise forces heart and lungs to work harder, thereby strengthening cardiovascular system and decreasing risk for heart disease. Other benefits include weight loss and management, increased stamina and decreased low density lipo protein. Regular participation in dance exercise can help to fulfill the recommendation of 30 minutes daily adult aerobic activity.**(Online Mayo clinic 2010).**

Weightlifting is an example of weight-bearing exercise however, with dance exercise provides the necessary load required strengthening bones and muscles, improve balance and coordination, and decrease risk for developing osteoporosis. Even people with osteoporosis can improve their condition with a weight-bearing exercise such as dance.**(Online American Council on Exercise 2008).**

Group dance classes provide exercise and socialization in a fun and lively environment. Regular participation in dance therapy reduces in stress, enhances mood and improves energy levels. During aerobic exercise, body releases endorphins that improve mood and also function as pain-killers. Participants reported that aerobic dance exercises increased self-esteem.Seniors experience cognitive improvement and improved memory whether involved in group classes or by using computer or video dance programs.**(Online American Council on Exercise1995).**

Dance in terms of calorie burn. A person will burn 235 calories per hour through swing dance, 265 calories for ballroom dancing, and 280 calories for square dancing, 300 calories for ballet and 380 calories for belly dancing. Meanwhile, salsa dancing can help burn 420 or more calories per hour and Zumba 540 calories or more.

The many dance forms provide varying levels of caloric burn.**(Online Indians women health 2010).**

Aim for losing them 1 to 2 pounds (0.5 to 1 kilogram) a week, although initially might lose weight more quickly than that make significant changes just be sure that changes are health supporting. To reduce 1 to 2 pounds a week,need to burn 500 to 1,000 calories with the help of consuming low caloric diet and doing regular exercise.

The study was to test the hypothesis that a low impact aerobic dance is a useful exercise mode for weight loss in obese middle-aged women. The data of this study indicates that our weight-loss program with a low impact aerobic dance is as useful as jogging or cycling in improving body composition and aerobic power for mildly obese middle-aged women.**(Tanaka K 2009).**

Dancing is a great way to fun at home or out with friends. Regular dance exercise can help and protect from heart disease and stroke, high blood pressure, non insulin diabetes, obesity, back pain, osteoporosis, and can improve mood and help to better manage stress. The greatest overall health benefits, experts recommend that to do 20 to 30 minutes of aerobic dance therapy three or more times a week and some type of muscle strengthening activity and stretching at least twice a week.**(Online Mayo clinic 2009).**

During muscular exercise, when large amounts of lactic acid escape as aresult of glycolysis.When the glycogen stored in the muscle where converted in to glucose by the process of glycolysis and energy is released, thus reducing weight of the person.**(Ambigashanmugam.2005).**

Based on the incidence of obesity and health in various regions and researchers experiences in the community, obesity leads to cause physical, social, psychological problem. In present study an attempt had been made to see the body mass index, after aerobic dance therapy among obese women.

STATEMENT OF THE PROBLEM

An experimental study to assess the effectiveness of video assisted aerobic dance therapy on reduction of body mass index among obese women residing in selected villages at Tirunelveli district.

OBJECTIVES

➢ To assess the pretest level of BMI among obese women of experimental group and control group.

➢ To find out the effectiveness of Aerobic Dance Therapy on reduction of BMI among obese women in experimental group and control group.

➢ To compare the pre-test and post-test level of BMI among obese women in the experimental group.

➢ To associate the post test level of BMI among obese women in experimental group with their selected demographic variables.

➢ To associate the post test level of BMI among obese women in control group with their selected demographic variables.

HYPOTHESES

All hypotheses were tested at 0.05 levels**.**

H$_1$ Mean post test level of BMI among obese women in experiment group will be significantly lower than the mean post test level of BMI among obese women in control group.

H$_2$ There will be a significant difference between pre test and post test level of BMI among obese women in experimental group.

H$_3$ There will be a significant association in the post test level of BMI among obese women of experimental group with their selected demographic variables.

H$_4$ There will be a significant association in the post test level of BMI among obese women of control group with their selected demographic variables.

OPERATIONAL DEFINITION

Assess

Systematically measuring and monitoring the height,weight and checking of BMI before and after video assisted Aerobic dance therapy.

Effectiveness

The changes expected to occur in the range of BMI among obese women as a result of the video assisted Aerobic Dance Therapy.

Video assisted Aerobic dance therapy

The Aerobic dance therapy is an active exercise with music .It contains low impact and high impact movements.In this study the Aerobic dance therapy was demonstrated with video CD and was asked to re-demonstrate every day one hour for the period of 20 consecutive days.

Body mass index

It refers to the level of BMI 25 to 39.99.

Women

If refers to the adult obese women with the age group above 25 years and the level of body mass more than 25to 39.99.

Obesity

It refers to the individual range of Body Mass Index more than 25 to 39.99.

ASSUMPTIONS

➢ Adult women may have the problem of 20 % to 40% of obesity and risk to develop cardiovascular disease, renal disease due to lack of physical activity.

➢ Aerobic dance therapy may reduce weight and also reduce a risk of cardiovascular disease among adult women.

DELIMITATION

❖ The study is delimited to the period of one month.

❖ The study is delimited to women only.

❖ The study is delimited to healthy adult obese women.

PROJECTED OUT COME:

❖ The finding of the study will help the nurses to plan the administration of Aerobic dance therapy in reduction ofBMI and improving the physical activity.

❖ Dance Aerobic will reduce the risk of developing heart disease, stroke, high blood pressure, non insulin diabetes mellitus, back pain, and osteoporosis.

❖ Dance aerobic will improve the psychological well being of the person.

CONCEPTUAL FRAMEWORK

Conceptual frame work refers to interrelated concepts that are assembled together in rational scheme by virtue of their relevance to a common theme(**Polit and Hunger- 1999).**

Theoretical model for this was derived from **Dorothy.E. Johnson Behavioral System Theory (1980).**

According to Johnson, nursing views the individual as a set of interconnected or inter dependent parts functioning as an integrated whole. In this study women's are behavioral system composed of seven systems. These subsystems carry out special function for the system as a whole. Dependency system is one among the subsystems which involves nurturing behavior from others that results in approval, attention, recognition. The physical structure is affected by biological, psychological and sociological factors and disturbance in any of the subsystem usually affects the other.

The step of the nursing process is incorporated with the **Dorothy Johnson Behavioral system Model**. Nursing process, the steps are entitled nursing diagnosis which parallels the assessment and diagnosis phase the second step nursing goal equals the planning phase and the third step equals to the implementation and evaluation step.

Assessment

Assessment is a process of collecting data about demographic profile (age, education. Occupation, monthly income, dietary habit, family type) level of daily activity, level of BMI, based on classification of BMI scale.

Diagnosis

Synthesis of the data provides basis for nursing intervention. After scrutinizing and analyzing the data that is collected by the use of BMI scale it was categorized into mild, moderate, and severe obese.

Nursing Goals :(Planning)

Planning occur when the women and nurse identify activities to improve the physical activity and bring about subsystem equilibrium.

Intervention

It involves putting plans into action to achieve enforcing regulatory controls to modify behavior, changing the structural requirement of a subsystem. Functional requirement in this study the physical activity (Aerobic dance therapy) administered to the obese women in the experimental group every day one hour for the 20 consecutive days to bring about changes in the BMI.

Evaluation

Evaluation refers to checking the subsystem identified as problematic for balance and overall system stability. In this study the investigator compared the physical activity of the experimental group women with the control group and to determine the physical activity the investigator used BMI scale.

CHAPTER II

REVIEW OF LITERATURE

Review of literature is defined as a critical summary of review on a topic of interest, often prepared to put a research problem in contest (**Polit& Beck,2006**).

The review of literature in the research report is a summary of current knowledge about a particular practice problem and includes what is known and not known about the problem. The literature is reviewed to summarize knowledge for use in practices or to provide a basis for conducting a study **(Burns, 1997)**.

This study examined the effects of Aerobic dance therapy on reducing Body Mass Index response related to obese women. From the collected review of various associatedliterature and research studies, topics can be divided as follow;

Section A: Literature related to prevalence and complications of obesity.

Section B: Literature related torole of exercises on obesity.

Section C: Literature related to effect on Aerobic dance therapy on obesity.

SECTION A: Literature related to prevalence and complicationsof obesity.

Novalbos Ruiz JP,et.al,(2000). Conducted a cross sectional study to assess the association between modifiable factors with the prevalence of obesity in youth population.Thousand two hundred and eighty three school children between the age group of 3 to 16 years were selected as samples.The result shown that more sedentarybehaviorespecially in girls over 12 years of age (66.7%) wereassociatedwithoverweight. The study concluded that the level of physical activity

is close to the obesity.

Fay W,(2001). Has conducted a study to examine the weight control program on the food environment among the overweightadults.Ninety (N=90) samples were selected and the participants were weighed. The researcher measured the food availability and the food storage practices of the samples. The results shown that high fat availability house hold adults has gained weight (-0.5 + -2.3). The study concluded that food environmental changes were associated with the weight change.

Richardson AS,(2001). Conducted a cross sectional study to assess the effect of neighborhood fast food consumption on obesity.The samples (n= 150) were young adults aged 18-28 years.Urbanized stratified multivariate negative binomial regression models were used to examine the cross-sectional associations between neighborhood fast food availability and the fast food consumption.The result shown that fast food availability was associated withthe frequency of fast food consumption .The study concluded that a lifestyle attitude leads to cause obesity.

Leon, et, al.(2002) conducted a prospective study to examine the association between the changes in leisure time physical activity (LTPA) and the mortality in older adults. The samples were two thousand seven hundred and thirty two aged more than 60 years. The researcher had assessed the older adult's status of the obesity and functional limitation. The results shown that, the continuously active or increased LTPA samples had low risk of mortality(45%). The study concluded that the increasing or maintaining LTPA is associated with greater life span in older adults.

CaffreyJL,et.al.(2004). Conducted a prospective study to assess the role of body mass index (BMI) associated with the increased risk of developing asthma among adolescent girls. The samples (n= 52) were examined and the researcher has

done a follow up for the period of 12 months. Logistic regression analysis was used to evaluate the relationship of BMI and the risk of acquiring asthma. The study results shown that the higher BMI were at an increased risk of developing asthma during 12 months follow up.The study concluded that increased BMI exaggerates the risk of acquiring asthma.

TrimarcoB(2007). Conducted a comparative study to assess a significant association between hypertension and obesity.The samples(n =80) were selected. The researcher has checked the blood pressure of the obese persons continuously for the period of 9 months. The study results shown that the obesity may predict the development of hypertension at any time in life.

DeschC,et.al,(2009).Conducted a comparative study to assess the pregnancy outcome among obese women.Samples (n =102) were selected by using purposive sampling technique. Fisher exact testand Mann- Whitney U test statistics was used for analyzing the samples. The result shown that the maternal obesity (>30 kg/m2) was associated with higher rates of cesarean delivery.The study was concluded that nonobese weight status before conception may reducethe maternal complications,such as pregnancy related hypertension and cesarean delivery.

Bennett PH,(2010). Conducted a study to assess the effect of obesity on incidence of non insulin dependent diabetes mellitus (NIDDM).The samples (n=1057) were obese person.The result shown that the incidence of diabetes mellitus was in 24.8 for the people with less than 5year of obesity,35.2 for people with 5-10 year of obesity,and 59.8 for people with at least 10 years of obesity. The studyconcluded that the obesity was inversely associated with fasting serum insulin concentration and fasting plasma glucose concentrations(p less than 0.001).

Renders CM. (2010). Conducted a cross sectional study to assess the effects of demographic characteristics and energy related behaviors on obesity among primary school children in the city of Zwolle, at Netherland. Data collection consists of height, weight, and waist circumference, parental questionnaire on socio demographic characteristics, dietary pattern and activity behavior of their child. The multivariate logistic regressions used for analysis.The result shown that the prevalence of obesity was significantly higher (16.5% vs 10.6%,p<0.05) among school children.The study concluded that socio demographic factors and unhealthy behaviors were associated with obesity.

SECTION B:Literaturerelated to role of exercise on obesity

Donnelly JE, et,al., (2000) conducted a long term cohort study to compare the effects of continuous Vsintermittent aerobic exercise on body weight composition among obese females. The sample has received continuous aerobic exercise for 3 days per week, 30 minutes per session for the period of 18 months. The results shown that the weight loss was 2.1% among continuous aerobic exercise group than the intermittent aerobic exercise group(1.5).

Kayser RE (2000) conducted a experimental study on effectiveness of aerobic exercise training to reduce the body mass index among 40 obese persons. The samples (33 women, 7 men) were randomly selected and they underwent exercise training program for 3 sessions per week. The study was conducted for the period of 12 weeks for each session samples were burn 300/kcal. The dependent variable was body weight and fat. The results shown that body weight was significantly decreased by 15.3+/-6.7kg (P< or = 0.05) and body fat significantly decreased by 14.9+/-5kg (P< or = 0.05) for the 40 subjects.

Shinkais,et,al.,(2000). Conducted a purposive study to assess the effectiveness of aerobic exercise on body composition for the period of 12 weeks. The seventeen samples were randomly assigned. The exercise group has participated in an aerobic training program over 45-60minutes/day. The study results shown that the samples had weight loss approximately 4.5kg among exercise group mainly due to fat loss.

Cisnerose, FJ.et,al., (2001). Conducted a purposive study to assess the aerobic exercise program and diet on body composition in obese persons. The samples were (8 women, 2men) were participated 12 weeks (3- 5 days/week)aerobicexercise.The study results shown that the significant mean decrease in body weight was 7.7kg. The study was concluded that a combination of aerobic exercise and hypo caloric diet can favorably affect body composition.

Fragale (2001). Conducted a randomized prospective study to assess the effect of aerobic exercise on weight reduction among obese women. The samples (n=31) were randomly assigned. The samples were received aerobic exercise for more time and lost weight. After the intervention the study concluded that the improvement in exercise time was significantly correlated with weight loss.

Sartorio Amharic MV, et.al., (2001) conducted a experimental study on effectiveness of aerobic exercise for reducing obese body mass. The samples (n=60)were randomly selected (41 females and 19 males) with the age group of 18-68 years and body mass index 40.8+/-4.8kg/m2 for the duration of 3weeks .The samples were underwent 30 min of indoor jogging and dynamic aerobic standing and floor exercises for the period of 5days/week. The result shown that there was a significant weight loss (-4.5%; p<0.001).The study concluded that low intensity aerobic exercise was effective on reducing body mass index.

Wadden TA (2001). Conducted a randomized trail study to assess the effects of lifestyle activity vs structured aerobic exercise among obese women.The samples(n=40) were randomly assigned for the period of 16 weeks. The samples had received aerobic exercise and low fat diet (1200kcal/day). The result shown that mean (SD) weight loss during the 16 week treatment program was 8.3. In that 3.8 kg for the aerobic group,and 4.2kg for the lifestyle group. The aerobic group lost significantly lost less fat free mass(0.5(1.3)kg) than the lifestyle group (1.4(1.3)kg; p =.03).The study concluded that a program of diet plus life style activity may offer loss.

SECTION C: Literature related to effect on Aerobic dance therapy on obesity

Heelan, KS.et,al., (2001). Conducted a purposive study to assess the aerobic dance exercise program and diet on body composition in obese persons. The samples were (8 women, 2men) were participated 12 weeks (3- 5 days/week) aerobic dance exercise.The study results shown that the significant mean decrease in body weight was 7.7kg. The study was concluded that a combination of aerobic dance exercise and hypocaloric diet can favorably affect body composition.

Jacobsen (2001). Conducted a randomized prospective study to assess the effect of aerobic dance exercise on weight reduction among obese women. The samples (n=31) were randomly assigned. The samples were received aerobic dance exercise for more time and lost weight. After the intervention the study concluded that the improvement in aerobic dance exercise time was significantly correlated with weight loss.

Coon PJ, et.al., (2001). Conducted a experimental study on effectiveness of aerobic dance exercise for reducing obese body mass. The samples (n=60)were randomly selected (41 females and 19 males) with the age group of 18-68 years and body mass index 40.8+/-4.8kg/m2 for the duration of 3weeks .The samples were underwent 30 minutes of indoor jogging and dynamic aerobic dance standing and floor dance exercises for the period of 5days/week. The result shown that there was a significant weight loss (-4.5%; p<0.001).The study concluded that low intensity aerobic dance exercise was effective on reducing body mass index.

Narici MV(2001). Conducted a randomized trail study to assess the effects of lifestyle activity vs structured aerobic dance exercise among obese women.The samples(n=40) were randomly assigned for the period of 16 weeks. The samples had received aerobic dance exercise and low fat diet (1200kcal/day). The result shown that mean (SD) weight loss during the 16 week treatment program was 8.3. In that 3.8 kg for the aerobic dance group,and 4.2kg for the lifestyle group. The aerobicdance group lost significantly lost less fat free mass(0.5(1.3)kg) than the lifestyle group (1.4(1.3)kg; p =.03).The study concluded that a program of diet plus life style activity may offer loss.

Brunn JM, et.al.,(2002). Conducted a randomized purposive study on effects of aerobic dance exercise in body weight and composition. The samples (n = 120) were randomly selected as sedentary, overweight men and women. The samples were randomly assigned into 3 groups. Group 1- high intensity movements, Group 2-Low intensity movements, Group moderate intensity of aerobic dance exercise.The samples werecounseled not tochange their diet and were encouraged to maintain the body weight.The result shows that high intensity group has lost significantly

morebody mass and fat mass (-4.8) respectively than the moderate intensity group (Body mass -0.9, fat mass -2.).The low intensity group(Body mass -0.6, fat mass -1.0). The study was concluded that a higher amount of activity is necessary for weight maintenance.

Tomohiro Okura(2003). Conducted an experimental study to assess the effectiveness of aerobic dance exercise on abdominal fat reduction in response to weight loss among obese persons. The samples (n=90) were randomly assigned into two groups, Diet only (DO)group,diet plus aerobicdance (DA)for the period of 14 weeks. The study result shown that theintra- abdominal IF reduction wassignificantly(p<0.005) greater for the DO group (-49.3cm2) than DA group(-37.8cm2).

Schlundt DG et,al.(2004). Conducted an experimental study on effectiveness of aerobic dance exercise and weight loss among sedentary obese women. The samples (n= 40) were received aerobic exercise for the period of 12 weeks. The study result shown that dance exercisers lost more weight and body fat than non exercisers.

Nakata Y, (2005). Conducted an experimental study to assess the effectiveness of aerobic dance exercise on abdominal fat reduction in response to weight loss among obese persons. The samples(n=209) were randomly assigned into two groups, Diet alone (DA)with intra- abdominal fat(IF) obesity, diet plus dance exercise (DE) with IF obesityfor the period of 14 weeks. The study result shown that theintra-abdominal IF reduction wassignificantly(p<0.001) greater for the DE group (-49.3cm2) than DA group(-37.8cm2).

Carleton RA (2006). Conducted a comparative study to assess the effectiveness of 8 week aerobic dance program and walk and jog exercise training program on reduction of body weight. The samples (n=22) were 24-48 years randomly assigned aerobic dance program, walk jog program (n=24) & sedentary control group (n=15). The study result shown that there was a similar improvement in aerobic power as a walk jog program. The study was concluded that an aerobic dance program is an effective alternative to a traditional walk jog training regimen.

Tanaka k,et,al.,(2009). Conducted a study to assess the effectiveness of low impact aerobic dance for weight loss among obese middle aged women. Sixty Japanese women, aged 50.9 +/-6.7 years (initial %fat = 35.2+/- 5.3%), were participated in 1-month weight-loss program consistingof diet and exercise prescription. The samples were divided into the following two groups: aerobic dance group and jogging and/or cycling group. The result shown that, body mass (-3.1 and -3.3 kg respectively) and %fat (-6.1 and -5.3% respectively) significantly decreased (P< 0.05) in both groups, The study concluded that weight loss program with a low impact aerobic dance was useful as jogging or cycling in decreasing the body weight among obese middle aged women.

CHAPTER III

RESEARCH METHODOLOGY

Research methodology refers to the techniques used to structure a study and to gather and analyze information in a systematic fashion (**Polit&Hungler, 2008**). Methodology includes the steps, procedures and strategies for gathering and analyzing the data in the research investigation.

This chapter consists of research design, variables in the study, setting of the study, population, sample size, sampling technique, criteria for selection of sample, development and description of the tool, scoring key, content validity, pilot study, reliability, data collection procedure and plan for data analysis.

RESEARCH APPROACH

Quantitative research approach was adopted for this study..

RESEARCH DESIGN

Research design adopted for this study was a true experimental pre test, post testcontrol group design. As the study fulfills the criteria such as manipulation, control and randomization. It can be diagrammatically represented as;

GROUP	Pretest	Intervention	Post Test
Experimentalgroup (R)	O_1	X	O_2
Control group (R)	O_1	-	O_2

Fig 2: Schematic Representation of True Experimental Design.

Key

    O_1 **-**   Observation level of BMI before intervention of experimental

                           Andcontrol group.

    X   **-**   Aerobic Dance Therapy to the experimental group.

    O_2 -   Observation levelof BMI of experimental and control group

                           after 20 days.

    R   -   Randomization.

The Aerobic Dance Therapy was given to the experimental group for a period of 20 days and the post intervention BMI level were assessed after the intervention. In the control group no intervention was given, BMI was assessed after 20 days.

VARIABLES

The variables of the study were as follows:

Independent variables

Aerobic Dance Therapy.

Dependent variables

Body Mass Index.

SETTING OF THE STUDY

The setting of the study refers to the area where the study was conducted. Tirunelveli district has divided into 4 zones. By using lottery method investigator have selected southern zone. The total number of villages in south zone was 40 villages. Thiruvannathapuram village and Natham village were selected randomly from the above villages. In those two villages Thiruvannathapurm village

wasassigned in experimental group and Natham village was assigned in control group by simple random sampling technique.The distance between two villages was 4 kilometers. This arrangement helped the investigator to carry out intervention for the experimental group and also reduces the interruption from the control group.Thiruvannathapuram village covers a total population of 2600 and Natham village covers a total population of 2900.Majority of the people belongs to low socio economic status, coolie, and selfemployment work were the main source of income of these people.

POPULATION

The study population comprised of adult obese women.

SAMPLE

The sample includes the adult obese women who had the level of BMI 25 to 39.99 and residing in selected villages at Tirunelveli district. Obese women who fulfilled the inclusive criteria.

SAMPLE SIZE

The sample size for the study was 60.Thirty samples were randomly selectedfor experimental group from Thiruvannathapuram village, 30 samples were randomly selected for control group from Natham village.

SAMPLE TECHNIQUE

The investigator conducted a survey to find out the adult obese women with the level of BMI 25 to 39.99 in twodifferent villages. Total population of the Thiruvannathapuram village was 2600 and the total women in this village were 900 out of 900,there were 140 school going children,182 were adolescent girls, and

532women were above 25years.In that 200 were obese women. Out of 200, there were 150 obese women comes under inclusive criteria. From this accessible population investigator had selected 30 samples for experimental group by simple random sampling method. Another village was Natham village. Total Population of this village was 2900 and the total women in this village were 1100. Out of 1100 there were 220 school going children,250 of them were adolescent girls and 450 of them were above 25 years. In that 140 were obesewomen. Out of 140, there were 130 obese women comes under inclusive criteria. From this accessible population investigator had selected 30 samples for control group by simple random sampling technique.

CRITERIA FOR SAMPLE SELECTION

The following were the criteria for the selection of the sample.

Inclusive criteria

  ❖ Adult obese women with the age group of above 25 years.

  ❖ willingness to participate

  ❖ Those who were available during the data collection.

  ❖ Obesity with BMI range of 25 to 39.99.

Exclusive criteria

  ❖ Adult obese women with serious systemic illness.

  ❖ Adult obese women with Hormonal problems.

  ❖ Women weretaking steroid drugs.

DEVELOPMENT AND DESCRIPTION OF TOOL

The tool consisted of two sections:

SECTION A:DEMOGRAPHIC DATA

Comprised of demographic data of the samples which consists of 6 items such as age, education, occupation, income, dietaryhabit, type of family.

SECTION B: MEASURING WEIGHT

Kanchan electronic weighing machine

The calibrate a standard plat form scale by moving the large and small weight to zero

The balance beam should be made level and steady by adjusting the calibrated.

> ➢ Instruct the individual stand on to scale.
>
> ➢ The individual should stand center of platform and not lean or hold on to support.
>
> ➢ Read digital display and record the weight.

SECTION C:MEASURING HEIGHT

Inch tape

> ➢ Instruct the person to stand erect, without shoes against a wall to which a measuring tape has been affixed.
>
> ➢ Be sure the feet are together and the heels, buttocks, shoulders, and head are touching the wall.
>
> ➢ Record the height in centimeter

SECTION D:BODY MASS INDEX

Obesity is often expressed interms of body mass index(BMI).Body mass index is simple index of weight for height that is commonly used to classify under weight, over weight and obesity in adults.

It is defined as the weight in kilogramsdivided by the height in meterssquare.

BMI calculation based on BMI scale

$$BMI = \frac{WEIGHT\ IN\ KG}{HEIGHT\ IN\ M^2}$$

Level of BMI and scoring key

CATECOREY	BMI RANGE	SCORING KEY
Normal range	18.5 – 24.9	0
Mild obese	25 to 29.9	1
Moderate obese	30 to 34.9	2
Severe obese	35 – 39.99	3

ASPECTS ON INTERVENTION

- ❖ Investigator assembled the samples in a common hall.

- ❖ Explained about the importance of Aerobic dance therapy and its mechanism of weight reduction.

- ❖ Proper place arrangement was done for all the samples.

- ❖ Explained the Aerobic dance therapy movementsincluding high impact movements and low impact movements.

- ❖ The Aerobic Dance Therapy was demonstrated through video CD and motivated the samples to do the Aerobic dance every day one hour morning at 10.30am to 11.30am.

- ❖ The investigator had also done the Aerobic dance along with samples. It was also one way of encouragement to the samples.

The Aerobic dance exercise CD was submitted to the experts for establishing content validity. The Experts were included one medical expert and three nursing experts in the field of community health nursing. Based on the suggestion of the expert some modification was made in the Aerobic dance therapy.

CONTENT VALIDITY

Validity refers to the degree to which an instrument measures what it is intended to be measure.**(Polit and Hungler 1999)**

The validity of the tool was obtained from five experts.Two Medical experts; three Nursing experts in the field of community health nursing.Slight modifications were done in the method of scoring as per the suggestion of the experts in the tool.

RELIABILITY OF THE TOOL

The tool used in this study was standardized one.

PILOT STUDY

It is a rehearsal for the main study. The researcher got permission from Principal and Research ethical committee of Sri. K. RamachandranNaidu College of nursing and HOD of community health nursing. A formal permission was obtained from the deputy director of health, at Tirunelveli District. The pilot study was conducted in Padapakurichi village and Pottal village for the period of one week (1.03.2011 to 06.03.2011) from 9 am to 6 pm. The concerned ward councilor was also informed and their co-operation was also obtained. The sample size was six obese women and they were selected by usingsimple random sampling technique, in that three of them were allotted to experimental group from Padapakuruchi village, and three of them were control group from Pottal village. Pre intervention BMI status was assessed based on BMI score. Rapport was established with the participants and a brief introduction about the study was given.

Consent was obtained from each sample and reassurance was provided that the collected data would be kept confidential. The data related to demographic

variables were collected from the samples. Video assisted Aerobic dance therapy was demonstrated by the investigator to the obese women in the experimental group and was asked them to re-demonstrate everyday 1 hour for the period of one week.

Likewise, in the control group data were collected from the obese women and BMI status were recorded. No intervention was given. BMI status of the obese women was recorded on the 6th day as same as in the experimental group.

From the result obtained it was noted that the obese women of the experimental group showed reduction in their weight. There was no changes noted in the weight of the control group.

This shown the effectiveness of Aerobic dance therapy. The pilot study confirmed that no modification was required in the tool. It was found to be feasible and adequate for the main study.

PROCEDURE FOR DATA COLLECTION

The researcher got permission from Principal and research ethical committee and HOD of community health nursing department, Sri K. Ramachandran Naidu College of Nursing. Before the data collection a formal permission was obtained from the deputy director of health, at Tirunelveli Districts for conducting main study.

The data were collected from 02.04.2011 to 30.04.2011, between 8.00 a.m. to 4 pm, six days in a week.Tirunelveli district has divided into 4 zones. By using lottery method investigator have selected southern zone. The total number of villages in south zone was 40 villages. Thiruvannathapuram village and Natham village were selected randomly from the above villages. In those two villages Thiruvannathapurmvillage was randomly assigned in experimental group and Natham

village was assigned in control group. Thiruvannathapuram village samples were randomly selected in to experimental group and Natham village sampleswere randomly selected in to control group based on the inclusive criteria.Theweight of the women was measured by using the electronic weighing machine and height was measured by using the inch tape and categorized normal, mild, moderate and severe obese based on BMI score. After obtaining the consent from the adult obese women.The researcher collected the demographic data from the samples.

The researcher gathered the samples in common hall and gave psychological support and explained about the aerobic dance therapy, high impact movements and low impact movements,and its effects on reducing body mass to the experimental group.Video assisted Aerobic dance therapy was demonstrated by the investigator to the obese women in the experimental group and was asked to re-demonstrate everyday 1 hour for the period of 20 consecutive days.Posttest was done after 20th day. There was significant reduction in BMI level of the obese women in the experimental group in the post intervention level of BMI compared to the pre intervention BMI level. It showed that there was significant reduction of BMI level of the obese women.

For the control group BMI level was assessed on the 1st and 20th day similar to the experimental group and no intervention was given. The result shown that thechanges in the BMI level were not significant.

PLAN FOR DATA ANALYSIS

After the data collection the collected data were organized, tabulated, summarized and analyzed according to the objectives of the study analyzed by using both descriptive and inferential statistics.

Descriptive Statistics

1. Frequency and percentage distribution were used to analyze the demographic data.

2. Frequency and percentage distribution of pre test and post test level of BMI among obese women of experimental group and control group.

3. Mean and Standard deviation were used to assess the effectiveness of video assisted aerobic dance therapy on reducing body mass index amongobese women.

Inferential Statistics

1. Unpaired't 'test was used to compare the effectiveness of aerobic dance therapy on reduction of body mass index amongobese women of experimental and control group.

2. Paired't' test was used to compare the effectiveness of aerobic dance therapy on reduction of body mass index among obese women of experimental group.

3. Chi-Square test was used to find out the association of the effectiveness of aerobic dance therapy on reduction of body mass index among obese women with their selected demographic variables of experimental and control group.

PROTECTION OF HUMAN RIGHTS

The proposed study was conducted after the approval of research committee of the college. Permission was sought from the deputy director health atTirunelveli District. The oral consent of each individual was obtained before data collection. Assurance was given to the study participants regarding the confidentiality of the data collection.

RESEARCH APPROACH
(Quantitative approach)

RESEARCH DESIGN
True experimentalpre test and post test control group design

POPULATION
Obese women

TARGET POPULATION
Adult Obese womenlevel of BMI more than 25 to 39.99

DEMOGRAPHC DATA;

1. Age

2. Education

3 Occupation

4 Income

   5Dietaryhabit

6 Type of family

ACCESSIBLE POPULATION
Obese women residing in selected villages at Tirunelveli district.

SAMPLE SIZE AND SAMPLING TECHNIQUE
60 Obese women by simple random sampling technique.

PRETEST BMI level

DATA COLLECTION PROCEDURE
Tool- BMI scale

EXPERIMENTAL GROUP n=30

CONTROL GROUP n= 30

INTERVENTION
Aerobic dance therapy

NO INTERVENTION

POST TEST BMI level

ANALYSIS AND INTERPRETATION DESCRIPTIVE AND INFERENTIAL STATISTICS

FINDINGS

Fig:3Schematic Representation Research Methodology

CHAPTER– IV

ANALYSIS AND INTERPRETATION

Data analysis is the systematic organization and synthesis of research data, and the testing of research hypothesis is using those data. **(Polit&Hungler,2003).**

This chapter deals with the analysis and interpretation of collected data from the 60 adult obese women with level of BMI more than 25 to 39.99 in selected villages at Tirunelveli District. The data has been tabulated and analysed according to the objectives.

Analysis is the method of organizing, shorting and scrutinizing data in such a way that research question can be answered**.(Polit, 2005).**

The data has been tabulated and organized as follows;

ORGANIZATION OF DATA

The organization of data is present under the following sections.

Section – A: Assessment of demographic characteristics of the samples.

❖ Frequency and percentage distribution of samples based on demographic variables such as age, educational status, occupation, dietary habit, family income, and type of family in the experimental and control group**.**

Section –B: Assessment of body mass indexamong obese women of experimental and controlgroup.

❖ Frequency and percentage distribution of pre and post test level of body mass index among obese women in the experimental group.

❖ Frequency and percentage distribution of pre and post test level of body mass index among obese women in the control group.

Section –C:Comparison of BMI among obese women for the experimental and control group.

❖ Comparison of mean and standard deviation of pre and post test level of BMI among obese women in the experimental group.

❖ Comparison of mean and standard deviation of pre test level of BMI among obese women between the experimental and control group.

❖ Comparison of post test level of BMI among obese women between the experimental and control group.

Section –D: Association of post test level body mass index among obese women of theirexperimental and control group with their demographic variables.

❖ Association of post test level of BMI among obese womenwith the demographic variables of experimentalgroup.

❖ Association of post test level of BMI among obese women with the demographic variables of control group.

SECTION -A

Assessment of demographic characteristics of the samples.

Table1: Frequency and percentage distribution of samples based on demographic variables such as age, Educational status, Occupation, dietary habit, Family Income and Type of Familyin the experimental and control group.

(n=30+30)

S.NO	Demographic variable	Experimental group		Control Group	
		F	%	F	%
1.	**Age in years**				
	25 yrs-30 yrs	10	33.34	8	26.66
	31 yrs -36 yrs	10	33.34	11	36.66
	37yrs - 40 yrs	8	26.66	4	13.34
	Above 40yrs	2	6.66	7	23.34
2.	**Educational status**				
	Illiterate	7	23.34	3	10
	Primary education	6	20	10	33.34
	Secondary education	8	26.66	12	40
	Graduate	4	13.34	3	10
	Others	5	16.66	2	6.66
3.	**Occupation**				
	Private sector	2	6.66	5	16.66
	Business	6	20	5	16.66
	House wife	14	46.67	13	43.34
	Public sector	5	16.66	4	13.34
	Collie.	3	10	3	10
4.	**Family Income**				
	<Rs. 3,000	5	16.66	3	10
	Rs. 3,000-5,000	5	16.66	7	23.33
	Rs. 5,001- 7,000	10	33.34	10	33.34
	Rs. 7001- 10,000	7	23.34	7	23.33
	Above Rs. 10,000.	3	10	3	10
5.	**Dietary habit**				
	Non- vegetarian	13	43.33	15	50
	Vegetarian	4	13.34	7	23.33
	Ova vegetarian	13	43.33	8	26.67
6.	**Type of family**				
	Joint	17	56.66	20	66.67
	Nuclear	13	43.34	10	33.33

Above table depicts the frequency and percentage distribution of demographic variables of age, educational status, occupation, income, food pattern, type of family in the experimental and control group.

While considering the age, majority of obese women 10 (33.34%) were between the age group of twenty five to thirty years and 10 (33.34%) were between the age group thirty one to thirty six years and 8(26.66%) were between the age group of thirty seven to forty years and 2 (6.66%)were between the age group of above forty years in the experimental group, whereas 8 (26.66%) were between the age group of twenty five to thirty years, and 11(36.66%)were between the age group of thirty one to thirty six years, and 4(13.34%) were between the age group of thirty seven to forty years and 7 (23.34%) were the age group of above forty years in the control group.

With regard to educational status classification, 7 (23.34%) were illiterate, and 6 (20%) were in primary education, and 8 (26.66%) were in secondary education, and 4 (13.34%) were in graduate, and 5 (16.66%) were other educational status in the experimental group where as 3 (10%) were illiterate, and 10 (33.34%) were in primary education, and 12 (40%) were in secondary education, and 3 (10%) were in graduate, and 2 (6.66%) were in other educational status in the control group.

With respect to occupation 2 (6.66%)were in private sector, and 6 (20%) were in business, and 14(46.67%) were in housewives, and 5 (16.66%) were in public sector, and 3 (10%) were in coolie in the experimental group, where as 5 (16.66%) were in private sector, and 5 (16.66%) were in business, and 13 (43.34%) were in housewives, and 4 (13.34%) were in public sector , and 3(10%) were in coolie in control group.

With regard to family income 5 (16.66%) were in less than three thousand, and 5 (16.66%) were in three thousand to five thousand, and 10 (33.34%) were in five thousand one to seven thousand, and 7 (23.34%) were in seven thousand one to ten thousand, and 3 (10%) were in above ten thousand in the experimental group. Whereas 3 (10%) were in less than three thousand, and 7 (23.33%) were in three thousand to five thousand, and 10 (33.34%) were in five thousand one to seven thousand, and 7 (23.33%) were in seven thousand one to ten thousand, and 3 (10%) were in above ten thousand in thecontrol group.

With regard to dietary habit 13 (43.33%) were in non vegetarian, and 4 (13.34%) were in vegetarian, and 13 (43.33%) were in ova vegetarian in the experimental group. Whereas15 (50%) were in non vegetarian, and 7 (23.33%) were in vegetarian, and 8 (26.67%) were in ova vegetarian in the control group.

With respect to family type 17 (56.66%) were in joint family, and 13 (43.34%) were in nuclear family in the experimental group. Whereas 20 (66.67%) were in joint family, and 10 (33.33%) were in nuclear family in the control group.
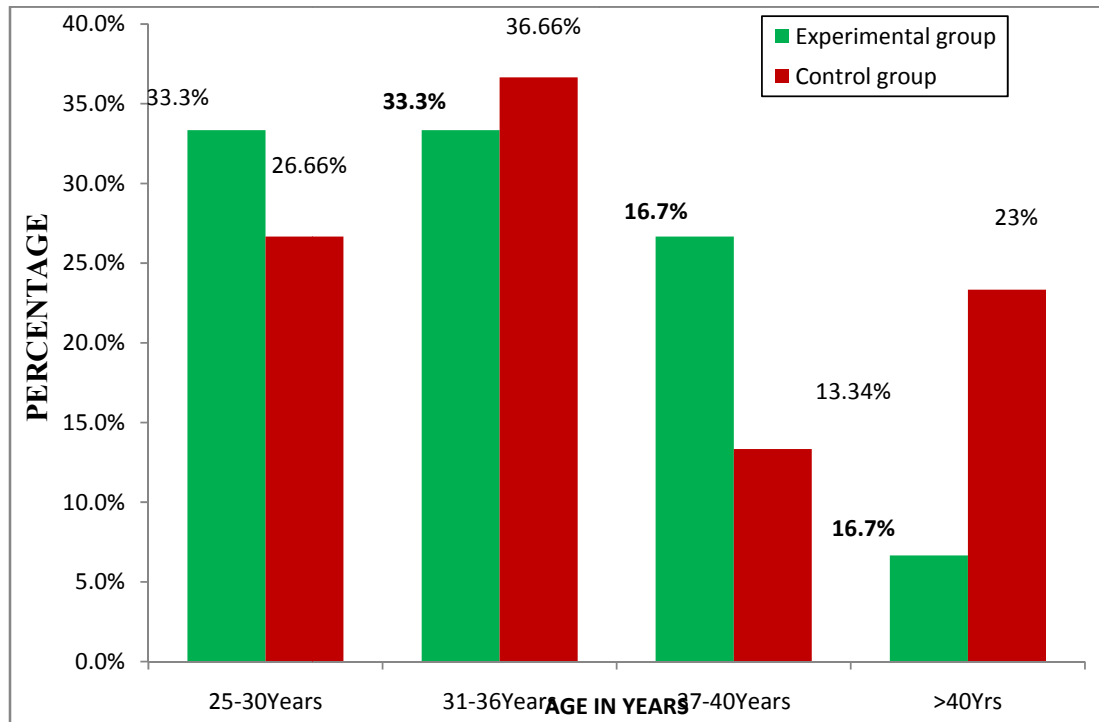
Figure: 4 Percentage distributions of samples according to age in years
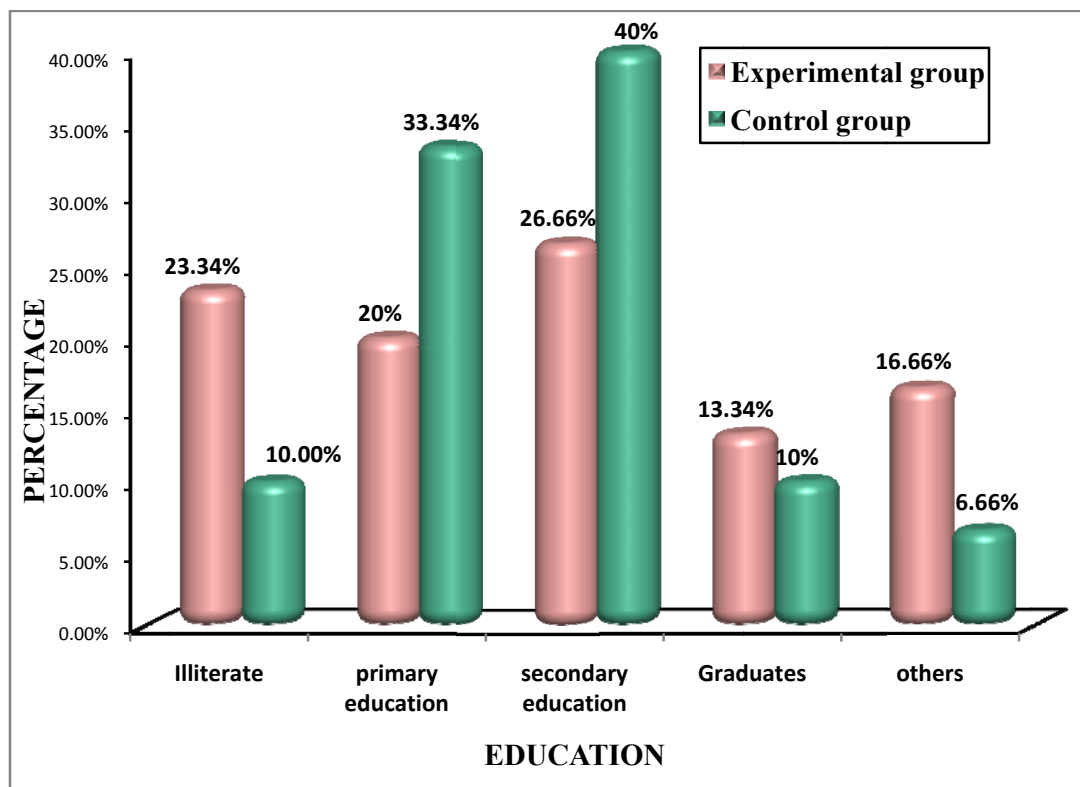
Figure:5 Percentage distributions of samples based on education
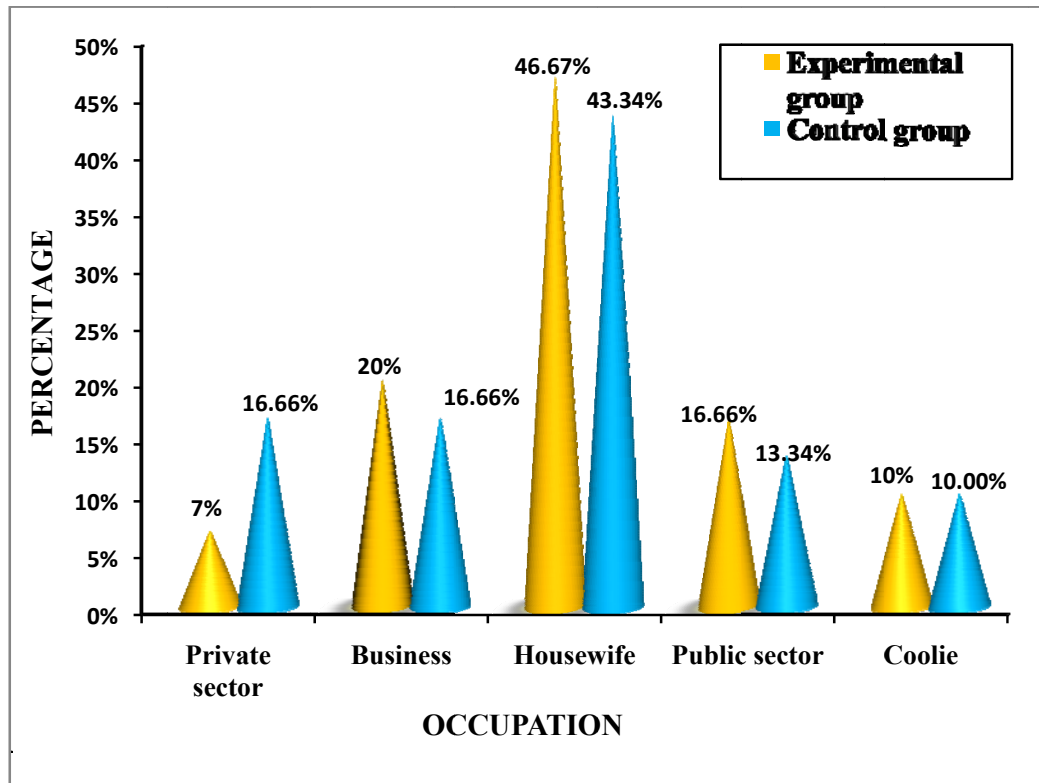
Figure: 6 **Percentage distributions of samples based on occupation**
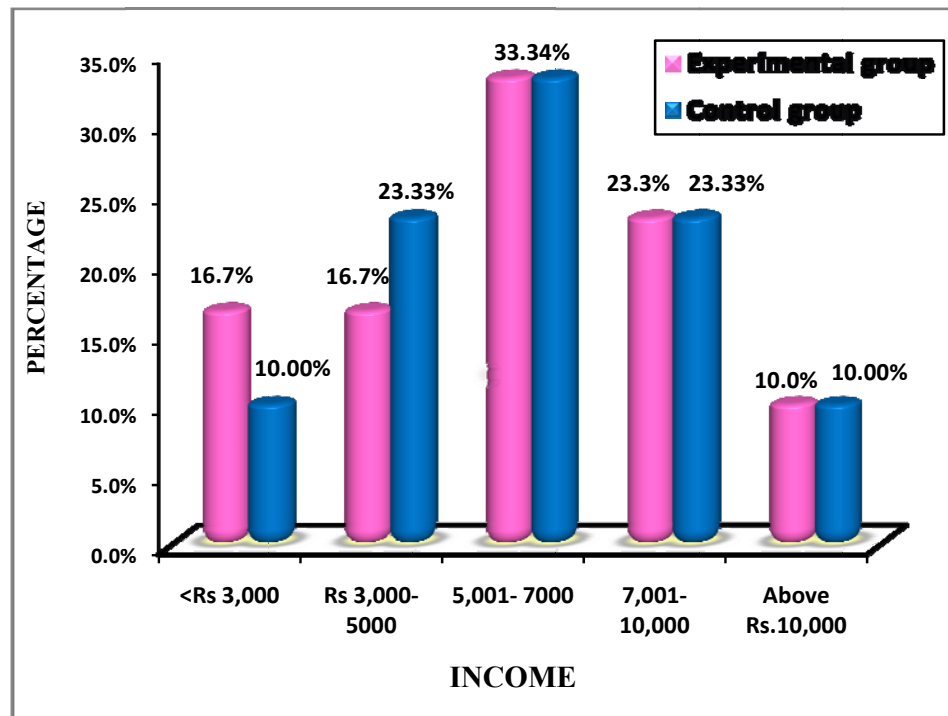
Figure: 7 **Percentage distributions of samples based on income**
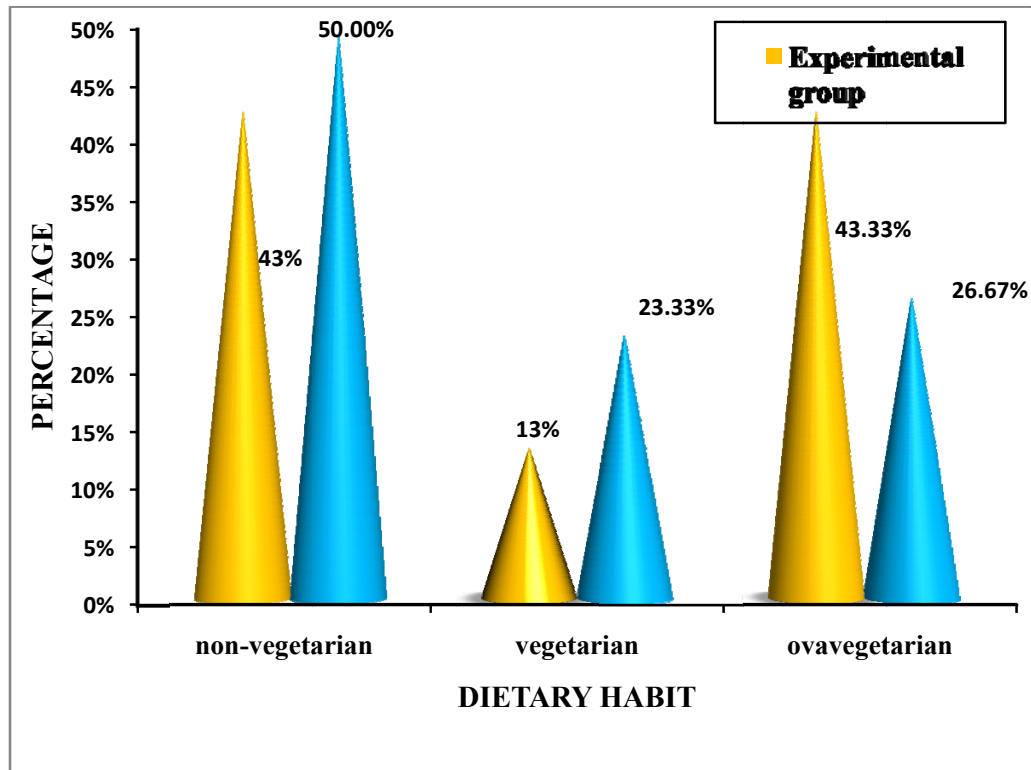
Figure:8 **Percentage distribution of samples based on Dietary habit**
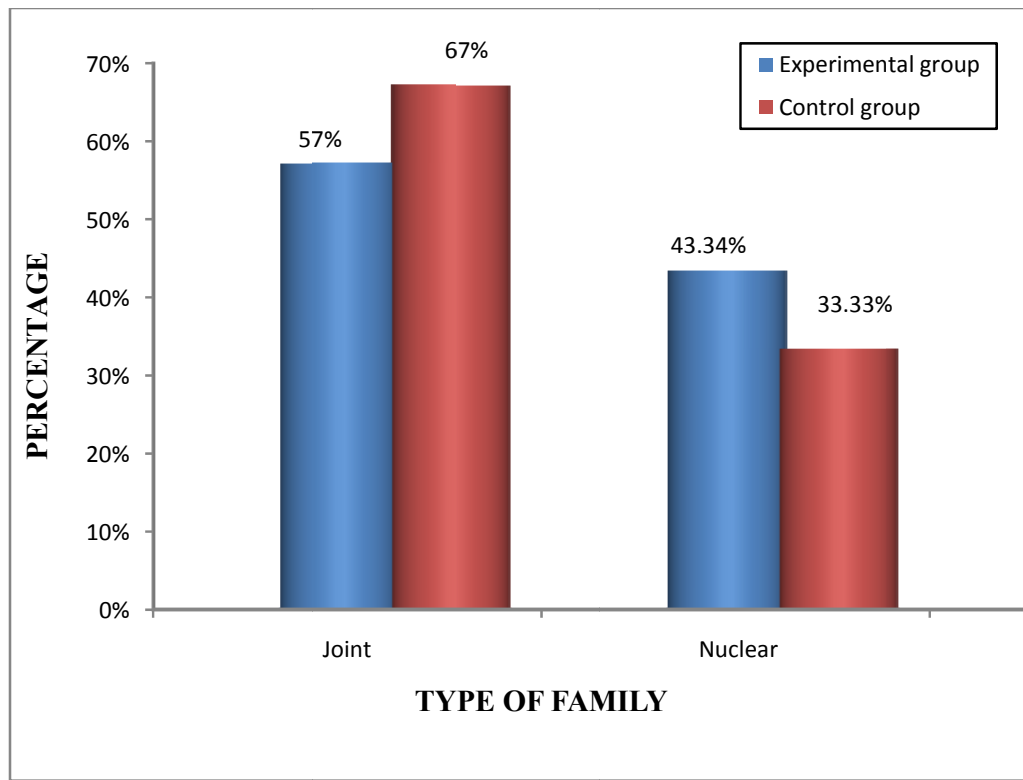
Figure: 9 Percentage distributions of samples based on Type of family

SECTION B

Assessment of level of BMI among obese women of experimental andcontrol group.

Table- 2: **Frequency and percentage distribution of pre andpost test level ofbody mass index among obese women in the experimental group.**

n =30

S.No	BMI Score	Pre test		Post test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	Normal	-	-	1	3.3
2.	Mild obese	3	10	23	76.7
3.	Moderate obese	18	60	5	16.7
4.	Severe obese	9	30	1	3.3

Above table shows the frequency and percentage of pre and post test level of obese body mass index among obese women in the experimental group.

With regard to the pretest level of body mass index among obese women in experimental group none of subjects had normal range, 3(10%) subjects hadmildobese 18 (60%) subjects had moderate obese,9 (30%) subjects had severe obese. whereas in the post test level of body mass index among obese women in the experimental group, 1(3.3%) subject had normal range of BMI, 23(76.7%) of subjects had mild obese, 5(16.7%) subjects had moderate obese,1(3.3%) subject had sever obese.
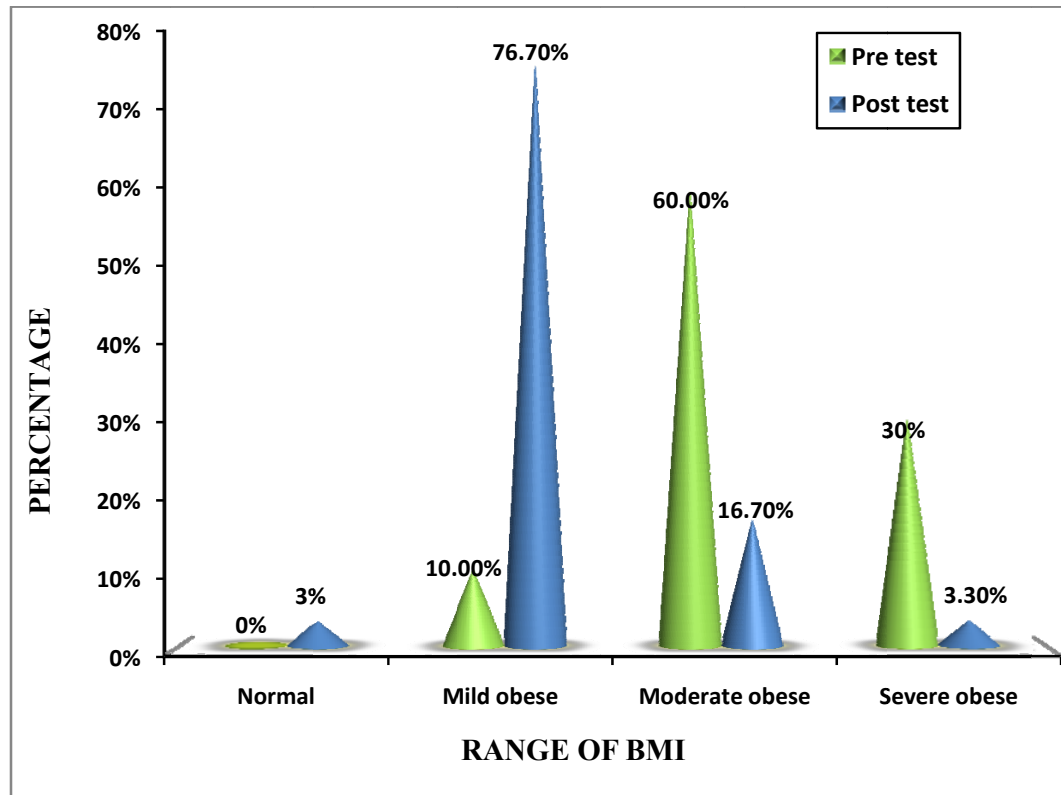
Figure: 10 Frequency and percentage distribution of pre and post test level of body mass index among obese women in experimental group.

Table -3 Frequency and percentage distribution of pre and post test level of BMI among obese women in the control group.   (n =30)

S.No	BMI Score	Pre test		Post test	
		Frequency	Percentage (%)	Frequency	Percentage (%)
1.	Normal	-	-	-	-
2.	Mild obese	8	26.67	8	26.67
3.	Moderate obese	17	56.67	17	56.67
4.	Severe obese	5	16.67	5	16.67

Above tableshows the frequency and percentage of pre and post test level of body mass index among obese women in the control group.

With regard to the pretest level of body mass index among obese women in the control group none of the subjects had normal BMI, 8(26.67%) subjects had mild obese, and 17(56.67%) subjects had moderate BMI range, 5 (16.67%) subjects had severe obese. whereas in the post test level of BMI in the control group,noneof subjects had normal BMI,8(26.67%) of subjects had mild obese, and 17(56.67%) of subjects had moderate obese, 5 (16.67%) of subjects had severe obese.

SECTION C

Comparison of BMI among obese women between the experimental and control group.

Table – 4 :Comparison of mean and standard deviation of pre and post test level of BMI among obese women in the experimental group.

S.No	Test	Mean	Standard deviation	Mean difference	't' Value
1.	Pre test	3.2	0.6	1	12.04 S
2.	Post test	2.2	0.5		

S- Significant

Above tableshows the pre and post test level of body mass index among obese women in the experimental group.

The pre testmean score was 3.2 with standard deviation of 0.6 and the post test mean value was 2 .2 with standard deviation of 0.5. The calculated 't' value was 12.04 which shows that there was a significant difference between the pre and post test level of body mass index among obese women in the experimental group at $p<0.05$ level of significance.

Table - 5: **Comparison of mean and standard deviation of pre test level of BMI among obese womenbetween the experimental and control group.**

S.No	Group	Mean	Standard deviation	't' Value
1.	Experimental group	3.2	0.6	1.82 NS
2.	Control group	2.9	0.65	

NS- Non significant

Above table reveals the comparison of pre test level of body mass index betweenexperimental and control group.

With regard to theexperimental group the pre testthe mean score was 3.2with standard deviation of 0.6. In control group the mean value was 2.9 with standard deviation of 0.65. The calculated 't' value was 1..82 indicating that there was no significant difference in pre test level of body mass index among obese between the experimental and control group at p<0.05 level.

Table - 6: Comparison of post test level of BMI among obese womenbetweentheexperimental and control group.

S.No	Group	Mean	Standard deviation	't' Value
1.	**Experimental group**	2.2	0.5	4.45 S
2.	**Control group**	2.9	0.65	

S- Significant

Above table reveals the comparison of post test level of body mass index betweenexperimental and control group.

With regard to experimental group the post test mean value was 2.2with standard deviation of 0.5. The mean difference was 1. In control group the mean value was 2.9with standard deviation of 0.65. The calculated 't' value was 4.45 indicating that there was a significant difference in post test level of body mass index among obese womenbetween the experimental and control group at p<0.05 level

SECTION D

Association of post test level of body mass index among obese women of the experimental and control group with their selected demographic variables.

<u>Table -7:</u>Associationofpost test level of BMI among obese women with their selecteddemographic variables of experimental group.   n= 30

S.NO	Demographic variable	BMI Score								χ^2 Value
		Normal		Mild obese		Moderate obese		Severe obese		
		F	%	F	%	F	%	F	%	
1.	**Age in years**									22.88
	25 yrs-30 yrs	1	3.33	6	20	3	10	-	-	df=9
	31 yrs -36 yrs	-	-	10	33.33	-	-	-	-	S
	37yrs - 40 yrs	-	-	7	23.33	1	3.33	-	-	
	Above 40yrs	-	-	-	-	1	3.33	1	3.3	
2.	**Educational status**									9.11
	Illiterate	-	-	5	16.66	1	3.33	1	3.33	df=12
	Primary education	1	3.33	4	13.33	1	3.33	-	-	NS
	Secondaryeducation	-	-	6	20	2	6.66	-	-	
	Graduate	-	-	3	10	1	3.33	-	-	
	Others	-	-	5	16.66	-	-	-	-	
3.	**Occupation**									17.55
	Private sector	-	-	1	3.33	-	-	1	3.33	df=12
	Business	-	-	4	13.33	2	6.66	-	-	NS
	House wife	1	3.33	11	36.66	2	6.66	-	-	
	Public sector	-	-	4	13.33	1	3.33	-	-	
	Collie.	-	-	3	10	-	-	-	-	
4.	**Family Income**									8.66
	<Rs. 3,000	-	-	3	10	2	6.66	-	-	df=12
	Rs. 3,000-5,000	-	-	5	16.66	-	-	-	-	NS
	Rs. 5,001- 7,000	1	3.33	7	23.33	1	3.33	1	3.33	
	Rs. 7001- 10,000	-	-	5	16.66	2	6.66	-	-	
	Above Rs. 10,000.	-	-	3	10	-	-	-	-	
5.	**Food pattern**									6.7
	Non- vegetarian	1	3.33	11	36.66	-	-	1	3.33	df=6
	Vegetarian	-	-	3	10	1	3.33	-	-	NS
	Ovavegetarian	-	-	9	30	4	13.33	-	-	
6.	**Type of family**									2.17
	Joint	1	3.33	13	43.33	2	6.66	1	3.33	df=3
	Nuclear	-	-	10	33.33	3	10	-	-	NS

SSignificant,**NS** - Non significant**.**

So these study findings shows that there was no significant association of post test level of BMI among obese women in the experimental group with their demographic variables such as education, occupation,income, dietary habit, family type at $p<0.05$ level except age.

Table 8: Associationpost test level of BMI among obese women with selected demographic variables in the controlgroup.n = 30

S.NO	Demographic variable	BMI Score								χ^2 Value
		Normal		Mild obese		Moderate obese		Severe obese		
		F	%	F	%	F	%	F	%	
1.	**Age in years**									3.95
	25 yrs-30 yrs	-	-	2	6.66	4	13.33	2	6.66	df=9
	31 yrs -36 yrs	-	-	2	6.66	7	23.33	2	6.66	NS
	37yrs - 40 yrs	-	-	2	6.66	1	3.33	1	3.33	
	Above 40yrs	-	-	2	6.66	5	16.66	-	-	
2.	**Educational status**									3.09
	Illiterate	-	-	1	3.33	2	6.66	-	-	df=12
	Primary education	-	-	2	6.66	6	20	2	6.66	NS
	Secondary education	-	-	4	13.33	6	20	2	6.66	
	Graduate	-	-	1	3.33	2	6.66	-	-	
	Others	-	-	-	-	1	3.33	1	3.33	
3.	**Occupation**									2.6
	Private sector	-	-	1	3.33	3	10	1	3.33	df=12
	Business	-	-	1	3.33	3	10	1	3.33	NS
	House wife	-	-	4	13.33	8	26.66	1	3.33	
	Public sector	-	-	1	3.33	2	6.66	1	3.33	
	Collie.	-	-	1	3.33	1	3.33	1	3.33	
4.	**Family Income**									3.93
	<Rs. 3,000	-	-	1	3.33	1	3.33	1	3.33	df=12
	Rs. 3,000-5,000	-	-	1	3.33	5	16.66	1	3.33	NS
	Rs. 5,001- 7,000	-	-	4	13.33	5	16.66	1	3.33	
	Rs. 7001- 10,000	-	-	2	6.66	4	13.33	1	3.33	
	Above Rs. 10,000.	-	-	-	-	2	6.66	1	3.33	
5.	**Food pattern**									1.81
	Non- vegetarian	-	-	5	16.66	7	23.33	3	10	df=6
	Vegetarian	-	-	2	6.66	4	13.33	1	3.33	NS
	Ovovegetarian	-	-	1	3.33	6	20	1	3.33	
6.	**Type of family**									2.42
	Joint	-	-	6	20	10	33.33	4	13.33	df=3
	Nuclear	-	-	2	6.66	7	23.33	1	3.33	NS

NS- Non significant

So these study findings shows that there was no significant association ofpost test level of BMI among control group with their demographic variables like age, education, occupation,income, dietary habit,and family type at p<0.05 level.

CHAPTER-V

DISCUSSION

This chapter deals with the result of the data analysis to evaluate the effectiveness of Aerobic dance therapy in reduction of BMI among the obese women residing in selected villages at Tirunelveli District. The discussion is based on the objectives of the study and hypothesis specified in the study.

MAJOR FINDINGS

- ❖ Majority of the obese women 10 (33.34%) were between the age group of 25-36 years in the experimental group.

- ❖ Majority of the obese women 11 (36.66%) were between the age group of 31-36 years in the control group.

- ❖ Majority of the obese women 8(26.66%) were in secondary education in the experimental group.

- ❖ Majority of the obese women 12(40%) were in secondary education in the control group.

- ❖ Majority of the obese women 14(46.67%) were belongs to house wives in the experimental group.

- ❖ Majority of the obese women 13(43.34%) were belongs to house wives in the control group.

- ❖ Majority of the obese women 10(33.34%) were getting the income of Rs.5,001 – 7,000 the experimental group.

- ❖ Majority of the obese women 10(33.34%) were getting the income of Rs.5,001 – 7,000 the control group.

- ❖ Majority of the obese women 13 (43.33%) were non vegetarian in the experimental group.

- ❖ Majority of the obese women 15 (50%) were non vegetarian in the control group.

- ❖ Majority of the obese women 17 (56.66%) were living in joint family in the experimental group.

- ❖ Majority of the obese women 20 (66.67%) were living in joint family in the control group.

- ❖ The calculated 't' value between the post test level of BMI among the experimental group and control group was 4.45.

- ❖ The calculate 't' value with in the per test and post test level of BMI among the experimental group was 12.04.

The result of the study has been discussed based on the objectives stated for the study.

The first objective of the study was to assess the pre test level of BMI among obese women in the experimental and control group.

Regarding the pre test level of obese body mass index among the experimental group in the pre test, none of the subjects had normal range, 3 (10%) subjects were mild obese, 18(60%) subjects were moderate obese, 9(30%) subjects were severe obese.

In the pre test level of control group, none of the subjects were normal range, 8 (26.67%) subjects were mild obese, and 17(56.67%) subjects were moderate obese, 5(16.67%) subjects were severe obese.

The second objective of the study was to find out the effectiveness of Aerobic dance therapy on reduction of BMI among obese women in experimental group and control group.

The control group showed a mean value of 2.9 with standard deviation 0.65 in the post test level. The calculated 't' value was (1.79).

The experimental group showed a mean value of 2.2 with standard deviation 0.5 in the post test level. The calculated 't' value was 4.45.

This indicating that there was a signification difference in post test level of BMI among obese women between experimental and control group at <0.05 level was retained.

From above analysis and interpretation the hypothesis (H1), "There was a significant difference in post-test interventional level of BMI among obese women in experimental and control group" was accepted.

The present study findings are supported by the findings of the study carried out by **Tanaka. K (2009)** on the effect of 4 weeks of aerobic dance therapy on reduction of body weight among obese women after the intervention body weight of the experimental group was significantly reduced than the control group.

The third objective of the study was to compare the pre test and post test level of BMI among obese in the experimental group.

The pretest mean score was 3.2 with standard deviation of 0.6 and the post test mean value was 2.2 with standard deviation of 0.5. The mean difference was 1. The calculated 't' value was 12.04 which shows that there was a significant difference

between the pre and post test level of BMI among obese women in the experimental group at P>0.005 level of significant.

From the above analysis and interpretation the hypothesis (H2), "There was a significant difference in pre-test and post-test level of BMI among obese in the experimental group was accepected".

The fourth objective of the study was to associate the post test level of body mass index of the experimental group with their selected demographic variables (age, economic status, education, occupation, dietary habit and type of family).

The association of demographic variables such as educational status, economic status, occupation, education, dietary habit, type of family except age of obese women and video assisted aerobic dance therapy are not having any association with reduction of BMI in the experimental group (p>0.05).

Hence the research hypothesis stated earlier that "there was a significant association of post test level of BMI among obese women with their selected demographic variables of experimental group was rejected.

The fifth objective of the study was to associate the post test level of body mass index of the control group with their selected demographic variables (age, economic status, education, occupation, dietary habit and type of family).

The association of demographic variables such as educational status, economic status, occupation, dietary habit, type of family except occupation of obese women and video assisted aerobic dance therapy were not having any association with reduction of BMI in the control group (p> 0.05).

Hence the research hypothesis stated earlier that "There was a significant association of post test level of BMI among obese women with their selected demographic variables of control group was rejected".

CHAPTER VI

SUMMARY, CONCLUSION, IMPLICATION, LIMITATIONSANDRECOMMENDATIONS

This chapter deals with summary, findings, conclusion, implications, recommendations and limitations, which creates a base for evidence based practice.

SUMMARY

This study was under taken to assess the effectiveness of video assisted Aerobic dance therapy on reduction of body mass index among obese women residing in selected villages at Tirunelveli district.

Obesity is the second leading cause of preventable death. Obesity is a societal problem as much as a complex medical concern, due to adverse health conditions related to weight gain and the associated expenses for health care.

Overweight and result from a complex interaction between genes and environment. Environmental factors play an important role in obesity. In today's culture there is greater access to food, particularlyprepackaged andfast foods, as well as soft drinks, which have poor nutritional quality. Eating outside of the home also restricts the ability to control the composition and quality of food.

Lack of physical exercise is another factor that contributes to weight gain and obesity. There is a reduction in physical activity, both in the workplace and at home.Elimination of physical education programs in elementary and secondary

schools and increased time spent playing video games and watching TV have contributed to the increase in sedentary habits.

Mortality rate rises as obesity increases, especially when obesity is associated with visceral fat.In addition to these problems, obese patients have a reduced quality of life.

Increased physical activity is an important part of weight reducing program. Regular physical exercise is the key to increased energy expenditure. In present study an attempt had been made to see the body mass index, after aerobic dance therapy.

In this competitive world, many people find it hard to dedicate time for physical activities like exercises, although one of their first priorities is to stay in perfect shape. Here comes the easy method of maintaining a perfect figure - dance aerobics.

Theobjectives of the study were

> To assess the pretest level of BMI among obese women of experimental and control group.

> To find out the effectiveness of Aerobic Dance Therapy on reduction of BMI among obese women in experimental group and control group.

> To compare the pre-test and post-test level of BMI among obese women in the experimental group.

> To associate the post test level of BMI among obese women in experimental group with their selected demographic variables.

> To associate the post test level of BMI among obese women in control group with their selected demographic variables.

Research hypothesis of the study were

H₁ Mean post test level of BMI among obese women in experiment group was significantly lower than the mean post test level of BMI among obese women in control group.

H₂ There was a significant difference between pre test and post test level of BMI among obese women in experimental group.

H₃ There was a significant association in the post test level of BMI among obese women of experimental group with their selected demographic variables.

H₄ There was a significant association in the post test level of BMI among obese women of control group with their selected demographic variables.

The assumptions of the study were

➢ The adult women may have the problem of 20 % to 40% of obesity and risk to develop cardiovascular disease, renal disease, due to lack of physical activity.

➢ Aerobic dance therapy may reduce weight and also to reduce a risk of cardiovascular disease   among adult women.

The review of literature related studies which provided a strong foundation for the study. It provides the basis for the conceptual frame work and formation of the tool. The review of literature for the study was related to three heading. They are literature related to prevalence and complication of obesity,literature related torole of exercises on obesity,literature related to effect on Aerobic dance therapy on obesity.

The conceptual frame work of this study was based on**Modified Dorothy Johnsons Behavioral model** Theory and it provided a complete frame work for achieving the central purpose of the study. The methodology adopted for the study was true experimental research design.The independent variable of the study was

Aerobic Dance Therapy and body mass index was the dependent variables. In this study BMI was recorded and obesity was categorized in to mild, moderate, severe based on modified BMI scale.

The study was conducted in selected villages atTirunelveli District. The data were collected from 02.04.2011 to 30.04.2011.simple random sampling technique was adopted for the selection of the samples. The total samples of the study consisted of 60 obese women from selected villages. The samples were equally divided into experimental group and control group. Tool used for this study was BMI scale. Weight and height of the women in both group was recorded and categorized into mild, moderate, and severe obesity based on BMI scoring before the intervention. The Aerobic Dance therapy was demonstrated to the experimental group and was asked to re-demonstrate every day one hour for the period of 20 days and no intervention were given to the control group. Level of BMI was assessed in both the group after 20 days of intervention by using the same tool. The collected data was analyzed and interpreted based on descriptive and inferential statistics.

The findings of the study revealed that the calculated't' value was 4.45 which showed highly statistical significance in the post test level of BMI among obese women between the experimental group and control group at p<0.05 level. Hence the hypothesis stated that there was a significance difference in post test level of BMI among obese women between the experimental and control group at p<0.05 level was retained.

Association ofpost test level of BMI among obese women with their selected demographic variables of experimental group and control group showed that there was no statistical significance except age.Hence the hypothesis stated that there will

be significant association of post testlevel of BMIamong obese women ofexperimental group and control group with their selected demographic variables at p<0.05 was rejected.

CONCLUSION

The present study were assessed the effectiveness of video assisted aerobic dance therapy on reduction of BMI among obese womenin selected villages atTirunelveli District. The result showed that there is a significant association between the aerobic dance therapy on reducing BMI among obese women. On the basis of this study the investigator were concluded that aerobic dance therapy reduces the level of BMI among obese samples. Therefore the investigator felt that more importance should be given to the assessment of BMI range among obese samples by using BMIassessment scale following which selected nursingintervention can be given as a physical activity measure to enhance reduction of BMI among obese samples. It can be easily performed by the individual, cost effective.

IMPLICATIONS

The investigator has derivedfollowing implications from the studyis vital, concern in the field of nursing education, nursing administration and nursing research.

NURSING PRACTICE

The nurses have a vital role in providing safe and effective nursing care to maintainideal body weight among obese individual. This can be facilitated by motivating the nurses to

1. Have an in-depth knowledge on importance of physical activity.

2. Aerobic dance therapy can be practiced by the nurses in day to day activities.

3. The nurses should develop skills in providing efficient nursing care for weight reduction for obese individual.

4. She should provide various other remedies also to reduce body mass index.

5. Staff development programs for imparting education and training regarding complementary and alternative therapy.

NURSING EDUCATION

1. Educate the students about various complementary and alternative therapies for weight reduction in obese person.

2. Encourage the students for effective utilization of evidence based practice.

3. The nurse educators need to be equipped with adequate knowledge regarding complementary and alternative therapies.

4. The students should be provided with adequate exposure in relation to practice of complementary and alternative therapy.

5. Conduct workshops or conferences for students regarding the use of complementary and alternative therapy in day today nursing practice.

NURSING ADMINISTRATION

1. The nurse administrator should teach their subordinate about aerobic dance therapy.

2. Conduct in-service program and continuing education program on maintaining ideal body weight.

3. Provide opportunities for nurses to attend training program on complementary and alternative therapies on maintaining ideal body weight.

4. Collaborate with governing bodies to formulate standard protocols and policy to emphasize complementary and alternative therapies.

5. Conduct in-service education program in effectiveness of complementary and alternative therapies.

NURSING RESEARCH

1. Nurse researcher should disseminate the findings of the studies through conference, seminar and publishing in professional journals.

2. The findings of the research study will help in building and strengthening the body of knowledge.

3. As a nurse researcher, promote more research on effective measuresto maintenance of ideal body weight.

4. As there is a limited study on this area, nursing researcher should encourage and conduct further researches related to complementary and alternative therapy on reduce obese body mass index.

5. Evidenced based nursing practice must take higher profile in order to increase the knowledge about maintenance of ideal body weight.

LIMITATIONS

During the period of study the limitations faced by the investigator are as follows,

1. Due to time constraints, the investigator was unable to take larger samples for the study.

2. The sample size was too small. Hence the generalization must be done with Caution.

RECOMMENDATIONS FOR THE FUTURE RESEARCH

Based on the findings of the present study the following recommendations are made:

1. The similar study can be conducted with larger samples for better generalizations.

2. A comparative study can be conducted by using aerobic dance therapy and other non pharmacological intervention in weight reduction.

3. A study can be conducted to assess the effectiveness of aerobic dance on improvement of cardiac and respiratory function, reduce arthritis pain, mental stress.

4. A study can be performed by developing a self-instructional module on weight reduction which enables the care givers to become aware of non-pharmacological interventions.

5. A further study can be conducted to assess the knowledge, attitude and practice towards obesity through the complementary and alternative therapies among nursing personnel.

ASSESSMENT	DIAGNOSIS	GOAL	IMPLEMENTATION	EVALUATION

DEMOGRAPHIC VARIABLES

(Age, Education, Occupation, Monthly income, Dietary habit &Type of family.)

Physical activity level,

Level of BMI based on BMI score.

Obesity with BMI level of >25

To reduce BMI and improve the physical activity

Video assisted aerobic dance therapy every day 1 hour for 20 consecutive days

EXPERIMENTL GROUP Reduced BMI & improvement in physical activity.

Mild obese

Moderate obese

Severe obese

CONTROL GROUP. Increasedor no change in BMI & less physical activity

Mild obese

Moderate obese

Severe obese
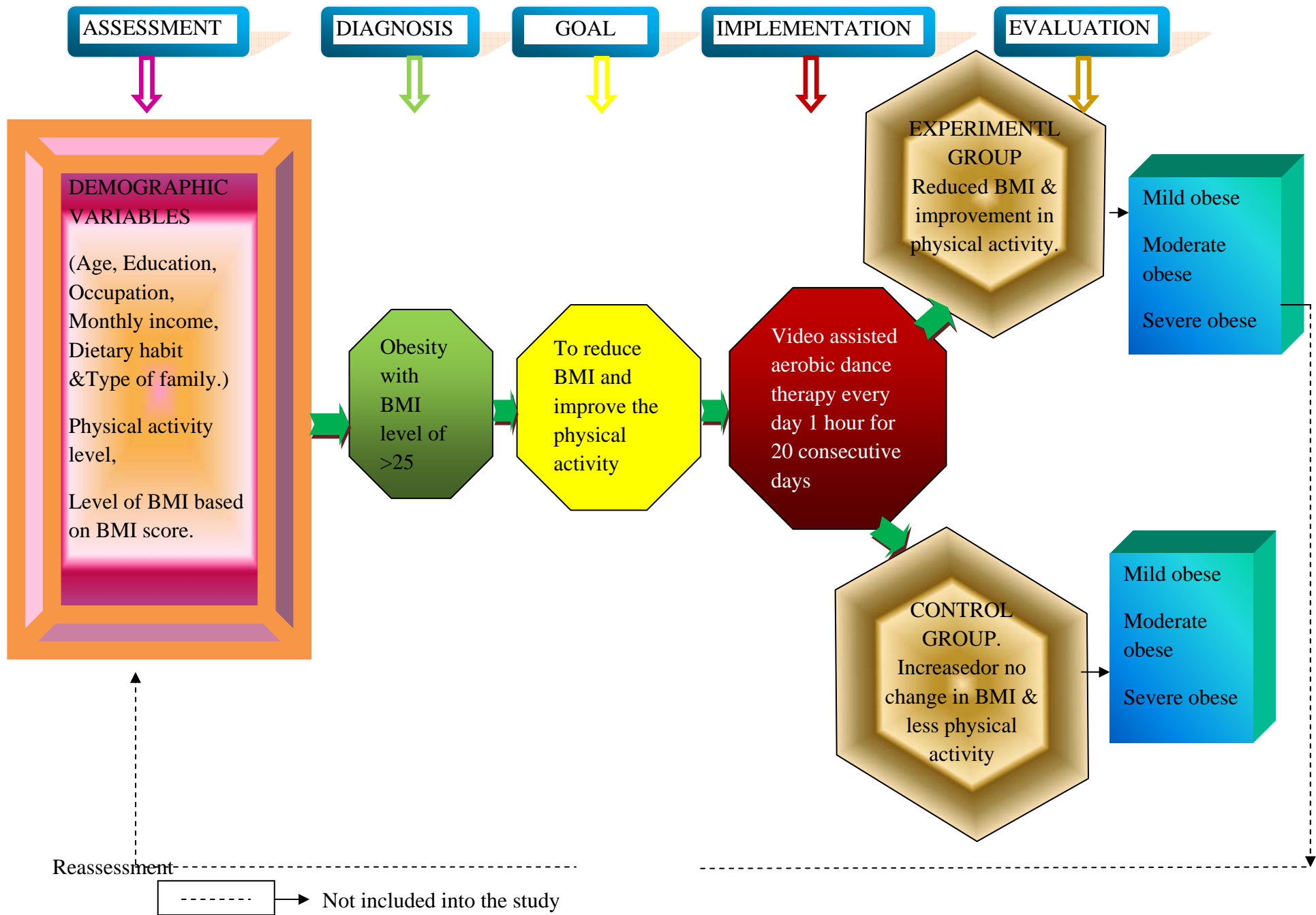
Reassessment

------- ➝ Not included into the study

Fig-1 CONCEPTUAL MODEL BASED ON DOROTHY JOHNSON BEHAVIOURAL MODEL (1980).

APPENDIX-A

GRANTING PERMISSION FOR CONDUCTING THE STUDY.

SRI K. RAMACHANDRAN NAIDU
COLLEGE OF NURSING

Approved by Govt. of Tamilnadu and Indian Nursing Council / T.N.C
Affiliated to the Tamilnadu Dr. M.G.R. Medical University

K.R. Naidu Nagar - 627 753, Paruvakudi Village, Post Bag No.1, Karivalam (via)
Sankarankovil (Tk), Tirunelveli (Dt), Ph. : 04636 - 260950, Fax : 04636 - 260377, E - Mail : srikrncon@yahoo.com

15.04.2011

To

The Medical Officer,

Primary Health Center,

PuthuMalai,

Tirunelveli District.

Mrs. G.Saraswathi is a bonafide student of our college studying in M.Sc (N) programme. As a partial fulfillment of the university requirement for the award of M.Sc (N) degree, She needs to conduct research project.

Her chosen research project is as follows **"A study to assess the effectiveness of Video Assisted Aerobic Dance Therapy on reduction of obesity Body Mass Index among women residing in selected villages at Tirunelveli District, April 2011"**.

Permission may kindly be granted to her for conduction of the study at your village. Further details of the proposal project will be furnished by the student personally, Confidentiality will be ensured in the research project.

.Thanking you

Yours faithfully

Principal
Sri K. Ramachandran Naidu
College of Nursing
K.R. Naidu Nagar - 627 753, Karivalam (Via)
Sankarankovil (T.K.) Tirunelveli Dt.,

துணை இயக்குநர் சுகாதாரப்பணிகள்,
திருநெல்வேலி

APPENDIX-B

LETTER SEEKING EXPERTS OPINION FOR CONTENT VALIDITY

From,

Mrs.SARASWATHI.G

Sri K.Ramachandran Naidu College Of Nursing,

Karivalam,(via),SankaranKovil,

Thirunelveli- (Dt)-627753.

To,

Respected madam,

Sub: Letter requesting opinion and suggestions from experts form experts establishing content validity of the tool.

I am Ist year M.sc(Nursing) student of Sri.K. Ramachandran Naidu College of Nursing, Thirunelveli. As part of my course I am doing a study on the topic mentioned below.

"A study to assess the effectiveness of video assisted Aerobic dance therapy on reduction of body mass index among obesewomenresiding in selected villages atTirunelveli District."

The dissertation is to be submitted to the Tamil Nadu Dr.M. G. R. University, as a partial fulfilment for the requirement of M.sc(Nursing)degree.

Hence I request you to kindly evaluate the tool items and give your valuable opinion and suggestion for improvement of this tool.

I would be highly obliged and thankful to hear from you.

Thanking you,

Signature and seal of validate,   Yourssincerely,

(Saraswathi. G)

APPENDIX-C

LIST OF EXPERTS FOR CONTENT VALIDITY

Medical experts

1. **Dr.Mr.Karunagarabrabhu, M.B.B.S.,**

    Medical Officer,
    Primary Health Centre,
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APPENDIX-D

CERTIFICATE OF ENGLISH EDITING

TO WHOMSOEVER IT MAY CONCERN

This is to certify that the dissertation work "**Experimental study to assess the effectiveness of video assisted Aerobic dance therapy on reduction of body mass index among obese women residinginselectedvillages atTirunelveliDistrict."**done by Ms.Saraswathi. G, M.sc(Nursing), in Sri K.Ramachanadaran Naidu college of Nursing,Sankarankovil (Tk), Thirunelveli(dist), is edited for English language appropriateness by**Mr.M.Senthilkumar,M.A,M.Ed.,(English),M.Phil.,**

Signature

APPENDIX-E

INFORMED CONSENT

I, Mrs.Saraswathi.G,IIYear, M.Sc(Nursing) student from Sri. K. Ramachandaran Naidu College of Nursing,Sankarankovil (Tk),Tirunelveli(dist).As a partial fulfilment of the nursing programme,I am conducting "**A study to assess the effectiveness video assisted aerobic dance therapy on reduction ofbody mass index among obesewomen residing inselected villages atTirunelveli District".** Kindly co-operate with me, by the study participants will be assessed by height and weight based oncategorise BMI score.I assure you that information obtained will be kept confidential. So, I request you to kindly co operate with me and participate in this study by giving your frank and voluntary consent.

Thank you,

APPENDIX-F

COPY OF THE TOOL

SECTIONA:DEMOGRAPHIC DATA

1. **Age in years**
   a) 25 – 30yrs
   b) 31 – 36yrs
   c) 37 – 40 yrs
   d) Above 40 yrs

2. **Educational status**
   a) Illiterate
   b) Primary education
   c) Secondary education
   d) Graduate
   e) Others

3. **Occupation**
   a) Private sector
   b) Business
   c) Housewife
   d) Public sector
   e) Coolly

4. **Family income**
   a) Less than Rs 3000
   b) Rs 3001 -5000
   c) Rs 5001 – 7000
   d) Rs 7001 -10000
   e) Above 10000

5. **Dietary habit**
   a) Nonvegetarian

b) Vegetarian

c) Ova vegetarian

6. **Type of family**

a) Joint

b) Nuclear

SECTION B:MEASURING WEIGHT;

By using Kanchan electronic weighing machine.

SECTIONC:MEASURING HEIGHT;

By using inch tape

SECTION D:BODY MASS INDEX;

Based on BMI calculation.

$$BMI = \frac{WEIGHT\ IN\ KG}{HEIGHT\ IN\ M^2}$$

Sample Number	Weight in kg	Height in meter^2	Level of BMI	Category

APPENDIX-G

SCORING KEY

Body Mass Indexwas classified in to 4levelsbased on the score given in the BMI assessment scale.

BMI range	Category	Scoring key
18.5 – 24.9	Normal range	0
25 to 29.9	Mild obese	1
30 to 34.9	Moderate obesity	2
35 to 39.9	Severe obesity	3

APPENDIX-H

INTERVENTION GUIDE FOR VIDEO ASSISTED AEROBIC DANCE
THERAPY AMONG OBESE WOMEN

Introduction:

      As a part of research study, the intervention chosen for this study was video assisted Aerobic Dance Therapy to women with obese body mass index.

Intervention:

      Aerobic Dance Therapy was demonstrated by using Video CD.

Procedure

Preliminaries:

- Assessed the pre-test level of BMI based on BMI scoring.

- The samples were assembled in a common hall.

- Explained the Aerobic Dance Therapy, Movements, and its effects on reducing BMI.

Intervention:

- Proper place arrangement was done for all the samples.

- Aerobic Dance Therapy was demonstrated through Video CD.

- Motivated the samples to do the Aerobic Dance everyday 1 Hour for 20 consecutive days.

Post Test:

      After 20th day level of BMI was assessed based on BMI scale.