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A Study on Outcome of Yoga Versus Aerobic Exercises in Over Weight Young Women

M. Soundarya[1] and V. Kavitha[2]
[1]BPT final year, school of physiotherapy (VISTAS).
[2]Asst.proffesor, school of physiotherapy (VISTAS).

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Corresponding Author Email:

Abstract

INTRODUCTION: The world health organization describes "escalating global epidemic" of obesity as "one of the today most bluntly visible yet most neglected health problem". Overweight is associated with severe health problems and early death due to diabetes, hypertension, cardiovascular diseases and other noncommunicable diseases. Hence managing weight is one factor in preventing such chronic diseases. Regular physical activity can improve quality of life. Hence in this study we can discuss the effectiveness of yoga versus aerobic exercise on overweight young women. **AIMS AND OBJECTIVES:** Study the effectiveness of yoga versus aerobic exercise in reducing weight of overweight young women and its effects on pulmonary function. **MATERIALS AND METHOD:** As per selection criteria 40 students were selected and divided into two groups randomly with 20 in each group. Group A started with yoga practice and group B started with aerobic exercises which helps in reducing weight. The material that used were weighing machine, inch tape, spirometer to measure BMI, waist hip ratio, pulmonary functions respectively. **RESULT:** Statistical analysis was done for comparison of both groups. After applying "t" test pre yoga practice and aerobics also post yoga and aerobics practice data Show highly significance difference between mean and standard deviation values of all parameters in group B (aerobics group). **DISCUSSION:** The result of this study suggests that overweight subjects who participated in aerobic group show more improvement in pulmonary functions and reduce BMI compared to subjects who participated in yoga group **CONCLUSION:** Our study concludes that regular practice of yoga and aerobic exercise is really helpful in weight reduction &improves the pulmonary functions.

Keywords
Spirometer; paired t test; yoga; Aerobics.

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INTRODUCTION

The world health organization describes the "escalating global epidemic of obesity as one of the today's most bluntly visible yet most neglected health problems (1).

In recent years' occurrence of overweight and obesity are very highly affecting both in developed and developing countries.

All studies reviewed found that physical exercise had beneficial effects in overweight and obese subjects. however, when it comes to inducing weight loss, the result indicate that physical exercise combined with changes in diet is the most effective form of treatment.

The causes of adult obesity and overweight include genetic predisposition lack of physical activities and other behavioral factors. Obesity is a major health concern worldwide.

Today 65% of the world's population lives in countries here overweight and obesity are responsible for more deaths. (1) In developed nations up to 10% of health care costs are spent on treating obesity related disorders.

The body mass index (BMI) and waist hip ratio play an important role in monitoring young adult and adolescents. it is age and gender dependent as it co-relates significantly with subcutaneous and total body fat in young adult. The obesity and overweight are measured by BMI. Body mass index is simple index of weight for height which is defined as weight in kilograms divided by the square of the height in meters (2) **ADAPTED FROM WHO CLASSIFICATION:**

NORMAL RANGE-18.50-24.99

OVERWEIGHT ->25.00

PRE-OBESE -25.00-29.99

OBESE ->30 (1)

Overweight are not only a problem of adults but also of the children and adolescent worldwide.

Overweight is associated with severe health problems and early death due to diabetes, hypertension, cardiovascular diseases and other communicable diseases (3).

As an overweight person has increased range in his or her BMI level higher the chances of getting pulmonary, renal, musculoskeletal, neurological, cardiovascular and endocrine systems complications. Treatment of obesity or overweight starts with comprehensive lifestyle management [(i.e.) diet, physical activity, behavioral modification, etc.]. Therefore, exercise training is considered as one of the key factors for weight management.

IMPORTANCE OF WEIGHT MANAGEMENT:

- **Reduce the risk of heart attack.**
- **Manage the weight**
- **Maintain a lower blood cholesterol level.**
- **Lower the risk of diabetes and cancers.**

Hence managing weight is one factor in preventing such chronic diseases. Regular physical activity can improve quality of life. Weight management plays a very important role in reducing obesity and the ultimate aim of the study is to create awareness against the complications of overweight and the importance of weight management.

NEED OF THE STUDY:

The need of this study is to create awareness regarding the weight management and physical activity to reduce weight and to improve pulmonary function.

AIMS AND OBJECTIVES OF THE STUDY:

To compare the effect of yoga and aerobics on reducing overweight

To determine the effect of yoga and aerobics on pulmonary function

METHODOLOGY:

- STUDY TYPE:

Experimental study

- SAMPLE SIZE: 40
- SAMPLING TECHNIQUE:

Randomized control trail [lot method]

- STUDY SETTING:

School of physiotherapy VISTAS

- STUDY DURATION:

4 weeks

- STUDY SETUP:

Study setup was done in school of physiotherapy, Vels university, VISTAS.

INCLUSION CRITERIA:

- Female subjects with age group 19-25
- Women with BMI ranging between 25.0-29.9

EXCLUSION CRITERIA:

- Females with cardio pulmonary diseases
- Females with any orthopedic or neurological conditions.
- Females having problems with renal system.

pregnant females.

- Females with hypertension.
- Females with menstrual problems.
- Females with history of spinal surgery or any surgery or any other major surgeries impeding physical activity to a significant level.
- Females with history of hyper/hypothyroidism and juvenile diabetes.

MATERIALS REQUIRED:

- Inch tape
- Weight machine
- Skipping rope
- Stop watch

OUTCOME MEASURES:

- BMI
- Waist hip ratio
- Spirometer

PROCEDURE:

The procedure was explained to each participant according to group that is about yoga postures to group A and aerobic exercises to group B.

The intervention was done for 45 minutes to one hour daily each day for a period of 4 weeks. They were instructed to do all the exercise programs till their tolerance level.

GROUP -A:

In group A subjects were taught pranayama, sun salutations, and yoga postures (asana) which helps to reduce weight in standing sitting and lying 45 min to one hour daily for 4 weeks.

Standing: Trikonasana, padahasthasana

Sitting: padmasana, vajrasana, paschimottanasana,

Lying: Bhujangasana, Dhanurasana, chakarasana, savasana Pulse rate and respiratory rate was taken pre and post to exercise daily. Maximum pulse rate of 130 per minute was not exceeded. Pre and post values of BMI and waist hip ratio was taken. Pre and posttest values of BMI wait hip ratio and pulmonary function test were taken daily.

GROUP-B:

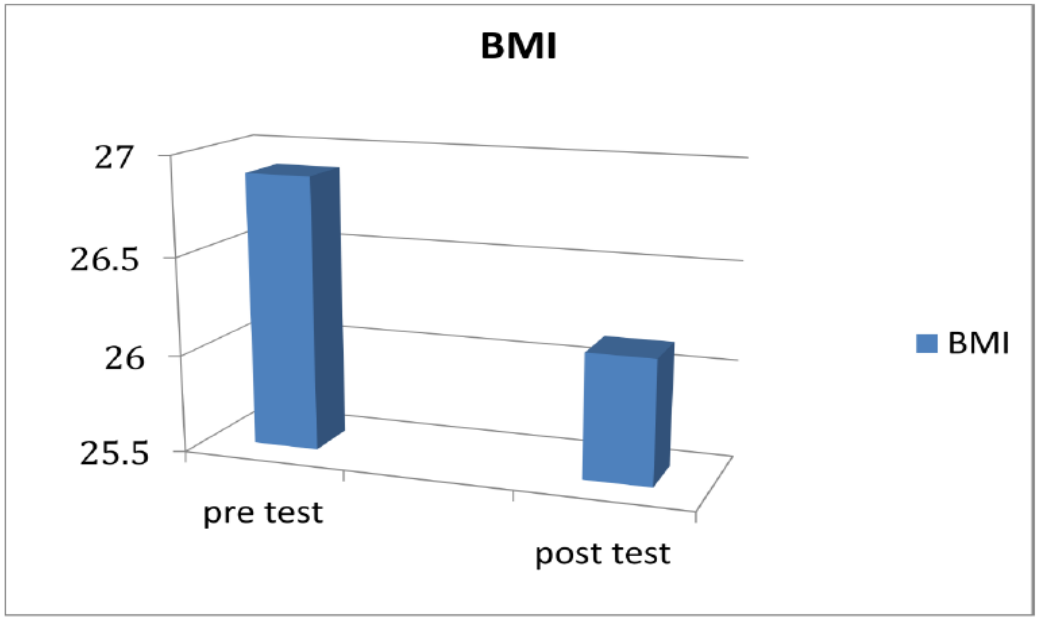
In group B, initial warm up and stretching -5 minutes breathing exercise-3 minutes, brisk walking(60m)-10minutes, rest period-2 minutes' spot jogging -3 minutes' rest period-2minutes, stair climbing (length 26 cm, height 14 cm ascending and descending)-10 minutes, Rest period-2 minutes, rope jumping-10minutes and ended with cool down and stretching -5 minutes. Pulse rate and respiratory rate was taken pre and post to exercise daily. Maximum pulse rate of 130 per minute was not exceeded. Pre and post values of BMI and waist hip ratio and pulmonary function test was taken

RESULT:

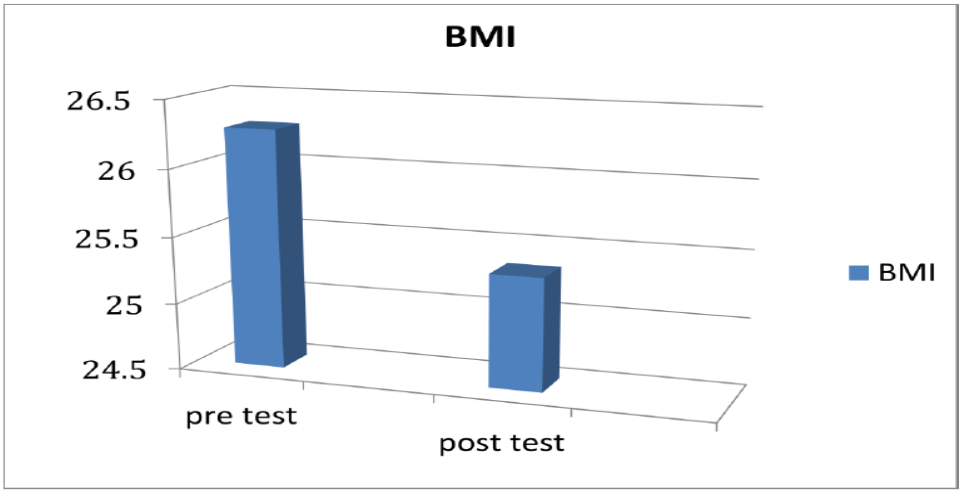
According to mean value difference of group A (0.76) has much less improvement than group B (0.94) in outcome measure BMI.

According to p-value of BMI group A (0.0300) by conventional criteria this difference is considered to be statistically significant and p-value of Group-B (0.0090) by conventional criteria this considered to be statistically very significant. p-value of outcome measure of waist hip ratio Group-A (0.8473) and Group-B (0.7658) by conventional criteria this difference is considered to be statistically not significant. p-value of outcome measure of pulmonary function group A (0.063) by conventional criteria this is considered to be statistically significant and p-value of group B (0.01) by conventional criteria this is considered to be highly significant.

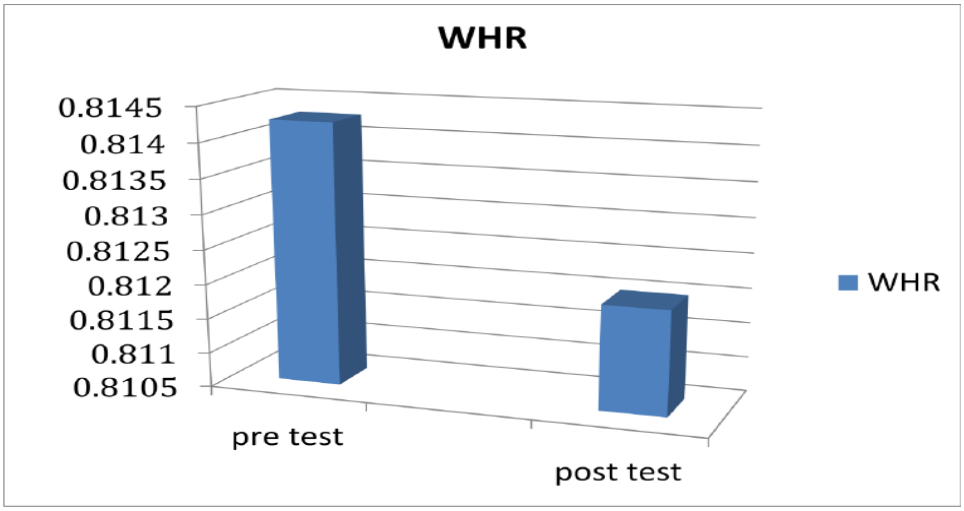
BAR DIAGRAMS



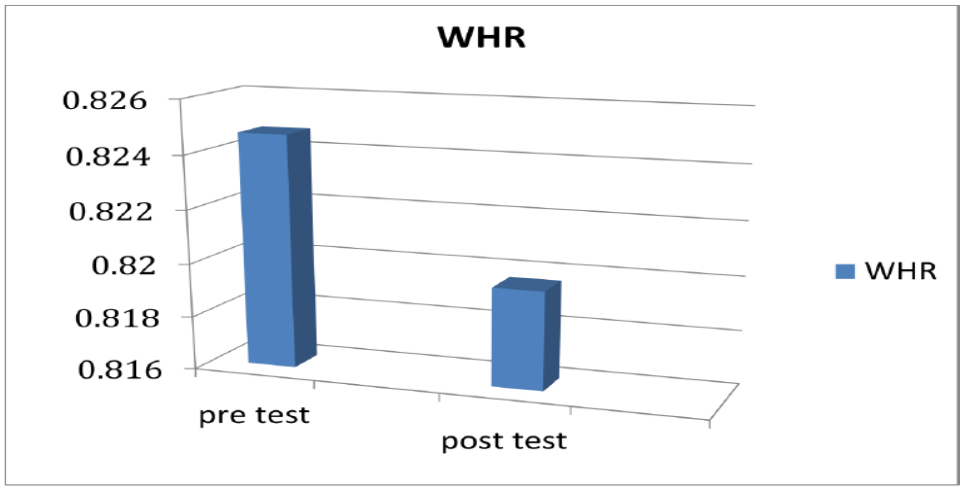
Group-A (Yoga)



Group-B (Aerobic exercise)

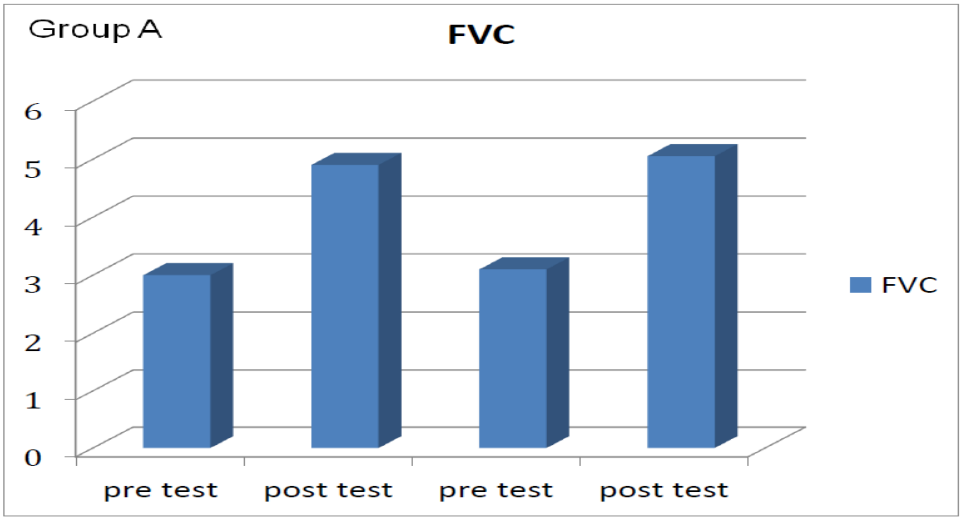


Group-A (Yoga)



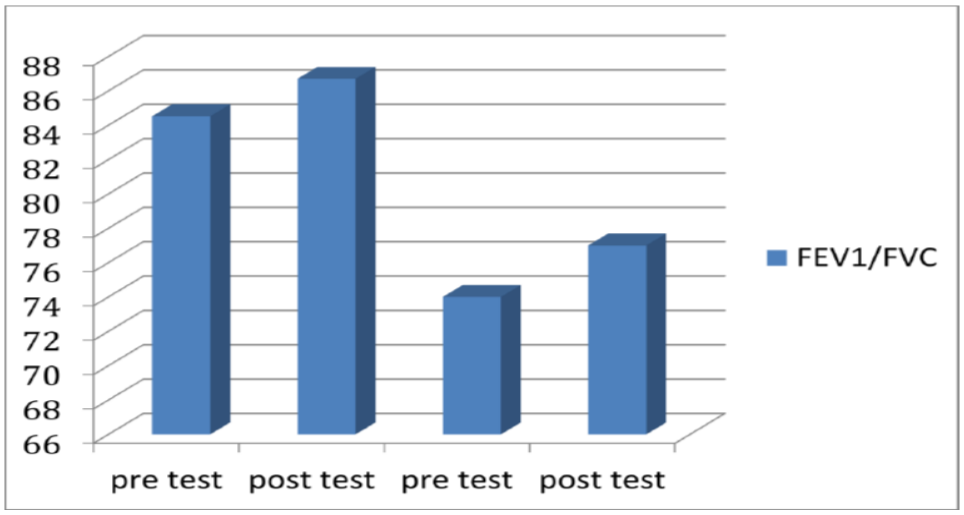
Group-B (Aerobic exercise)

FVC in both groups



Group A Group B

FEV1/FVC in both groups



Group A Group B

DISCUSSION:

The present study supports the experimental hypothesis and evaluated the effect of yoga versus aerobic exercise over the period of 4 weeks in overweight young omen.

The result of the study suggests that overweight subjects who participated in aerobic group (group B) show more improvement in pulmonary functions and reduce BMI compared to subjects who participated in yoga group (group A). Even though group B showed better reduction in waist hip ratio than group-A, the p-value is not statistically not significant.

In the study "A study to compare the effect of aerobic and resistance training on cardio vascular fitness in young obese sedentary female" by purvi k, changela aerobic training also increases energy expenditure and reduction of body weight and visceral adipose tissue and body fat percentage.

In another study "the effect of an eight-week rope skipping exercise program on interleukin-10 and C-reactive protein in overweight and obese adolescent" Iman zakavi et al- rope jumping was

effective in reducing BMI and fat percentage in individuals.

In a study "A comparitive of study of yoga and aerobic exercises in obesity and its effect on pulmonary function" shinde N shinde KJ, Hande D yoga along with pranayama and sun salutations can be used as complementary or adjunctive intervention in obesity for reduces the weight and improvement in pulmonary function.

But there were certain limitations especially less numbered sample group and dropped out of subjects during exercise protocol due personal problems. More over additional number of outcome measures could be added to measure body fat percentage, lipid profile and cardiac endurance.

Future research needed on yoga and an aerobic exercise with large sample. Many people were not aware of these exercises. There are hardly some studies on comparison of yoga and aerobics. More research needed to validate its effects.

CONCLUSION:

The above pretest and posttest mean value shows that both group ere effective in reducing BMI, waist hip ratio, as well as pulmonary function but group B shown statistically high significant than group A.

Hence regular practice of yoga and aerobic exercises helps in weight reduction and improvement of pulmonary functions.

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