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Effect of Therapeutic Lifestyle Changes (TLC) in Patients with Obesity

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Abstract: The study was undertaken to evaluate the "Effect of Therapeutic Lifestyle Changes (TLC) in Patients with Obesity". In this study, the researcher has selected only one aspect of therapeutic lifestyle changes, i.e., yoga, and the patients included in this study were obese patients. The objectives of the study were to assess the pre-test and post-tests weight of obesity patients in experimental and control group, to compare the mean pre-test and mean post-tests weight score of obesity patients among experimental and control group, to evaluate the effectiveness of Therapeutic Life Style Changes (TLC), i.e., yoga on weight among patients with Obesity, to find out the association between weight and selected demographic variable of obesity patients. The conceptual framework used for the study was J. W. Kenny's Open System Model. A true experimental time series pre-test post-test design was adopted for the study. A purposive sampling technique was followed to collect the samples. After collecting the sample the researcher followed the Probability sampling technique, i.e., simple random method to assign the patients of obesity as per sample size to the experimental and control group randomly by using flipping a coin method. The sample size of the study was 120 obese patients.Among 120 obesity patients 60 patients were in experimental group and 60 patients were in control group. Yoga was demonstrated for experimental group and it was practiced by them daily, one to one and a half hours. No intervention was given to the control group, meanwhile. The weight of obesity patients was measured every fifteen days to observe the difference and it was continued up to 180 days.

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ANOVA repeated measures were applied to elicit the difference of weight within the group and between the groups. The finding implies that when compared with the control group the experimental group had a significant reduction in the weight of patients with obesity. There was also a significant association found in weight and smoking. The findings of the study infer that yoga is one of the therapeutic lifestyle interventions used to reduce weight among patients with obesity.

Key words: Obesity, TLC, Yoga, overweight, non-pharmacological intervention.

Introduction

Obesity is a major global health concern, significantly contributing to chronic diseases such as Type II diabetes, cardiovascular disorders, hypertension, and certain types of cancer. It is commonly linked to lifestyle choices, including poor dietary habits and physical inactivity. With over 1.5 billion people globally affected by obesity, and more than 40 million overweight children under five, addressing this condition has become urgent.

Lifestyle modification strategies, known collectively as Therapeutic Lifestyle Changes (TLC), are endorsed by global health authorities such as the American Heart Association and the Obesity Society. TLC encompasses dietary changes, regular physical activity, and stress management techniques. Among these, yoga has shown promise due to its dual benefits on physical and psychological health.

Various studies underscore the importance of lifestyle modifications in managing obesity. Sedentary behavior and increased consumption of processed foods have contributed significantly to the prevalence of obesity and related disorders. Research highlights yoga as a holistic intervention that not only aids weight loss but also improves lipid profiles, cardiovascular health, and mental well-being.

For example, Sengupta (2012) and Tundwala et al. (2012) demonstrated that yoga significantly reduces BMI, triglycerides, and blood pressure. Acupuncture, another non-pharmacological approach, has also shown efficacy in weight management, though yoga is often preferred due to its accessibility and additional psychological benefits.

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Research objectives:

1. To assess the pre-test and post tests weight of obesity subjects in experimental and control group.
2. To compare the Mean pre-test and Mean post-test weight score of obesity subjects among the experimental and control groups
3. To evaluate the effectiveness of Therapeutic Life Style Changes (TLC) i.e. yoga on weight among patients with Obesity.
4. To find out the association between weight and selected demographic variable of obesity subjects.

Hypotheses:

H1- There will be a difference between pre-test and post-test mean weight of obesity patients in experimental and control group.
H2- There will be a significant difference in weight of patients with obesity those who receive Therapeutic Lifestyle Changes (TLC) i.e. yoga and who do not receive.
H3-There will be a significant association between weight and selected demographic variables of obesity patients.

Summary of Physiological Effects of TLC

Table 1 shows the Therapeutic life style changes -Summary of Physiological Effects

Parameter	Effect
LDL	↓
HDL	↔/↑
Triglycerides	↓
Blood Pressure	↓
Glucose	↓
Weight	↓

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Methodology

This study utilized a true experimental design with time series and pre-test/post-test methodology. The experimental group received the yoga intervention, while the control group did not receive any treatment. Participants were randomly assigned using a simple random technique (coin flip method) to ensure unbiased group allocation.

The population comprised adults aged 18 to 65 years with a BMI greater than 25 kg/m². A total of 120 participants were selected using purposive sampling, and later randomized into two equal groups: experimental (n=60) and control (n=60). The study was conducted at three centers: Aviskar Yoga Center, Pathanjali Yoga Academy, and the outpatient department of K.S. Hegde Medical Academy, Mangalore.

Participants included in the study were adults between 18 to 65 years of age, having a Body Mass Index (BMI) greater than 25 kg/m². Both male and female subjects were considered eligible for participation.

Subjects were excluded if they had a history of cardiac problems, thyroid or other endocrine disorders, or had undergone surgeries related to obesity such as bariatric procedures. Additionally, those who were on medication for obesity, or who had physical limitations that prevented them from safely performing yoga postures, were also excluded from the study.

The experimental group followed a structured yoga regimen developed in consultation with yoga experts. The daily session lasted between one to one-and-a-half hours and included Asanas: Tadasana, Trikonasana, Pavanamuktasana, Pacchimuktasana, Bhujangasana, Dhanurasana, Pranayama: AnulomaViloma, Ujjayi, Relaxation: Shavasana.

Yoga was practiced consistently for six months. Participants maintained a daily log to ensure adherence.

Baseline data were collected using a semi-structured interview schedule and clinical assessment tools. Weight measurements were taken biweekly using standardized weighing machines. The tools were validated by a panel of nine experts from nursing, medicine, and yoga fields. Reliability testing showed a high reliability coefficient of 0.97.

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Data analysis was conducted using SPSS v16.0. Descriptive statistics were used for demographic data. Inferential statistics, including 2x10 Repeated Measures ANOVA and ANCOVA, were applied to determine the effectiveness of the intervention. Kruskal-Wallis tests were used to assess associations between weight and various demographic variables.

Results

Weight Comparison between Groups

The mean baseline weight in the experimental group was 76.15 kg, decreasing progressively to 71.21 kg by the end of six months. In contrast, the control group showed minimal changes, starting at 77.20 kg and ending at 77.40 kg. Repeated Measures ANOVA revealed statistically significant weight reductions in the experimental group ($p < 0.001$), while the control group remained statistically unchanged.

Table 2: Mean Weight Changes Over Time

Day	Experimental (Mean ± SD)	Control (Mean ± SD)
Day 0	76.15 ± 13.3	77.20 ± 9.0
Day 60	74.56 ± 13.1	77.30 ± 9.0
Day 120	72.86 ± 13.0	77.37 ± 8.9
Day 180	71.21 ± 12.9	77.40 ± 8.7

A clear downward trend in the experimental group's weight over time, while the control group's trend remained flat. ANCOVA results further confirmed that these differences remained significant even after controlling for dietary adherence.

Association with Demographic Variables

Kruskal-Wallis tests showed no significant associations between weight and demographic variables such as age, gender, marital status, religion, family type, education, income, diet, and domicile. However, a statistically significant association was found between weight and smoking habits.

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Conclusion

The study concludes that yoga, as a therapeutic lifestyle change, is significantly effective in reducing weight among obese individuals. The intervention not only resulted in measurable weight loss but also promoted a holistic sense of well-being. The structured yoga regimen led to a gradual and sustainable reduction in body weight over six months.

This finding has far-reaching implications. In a world increasingly plagued by lifestyle-related diseases, yoga presents an affordable, accessible, and sustainable solution. It bypasses the side effects often associated with pharmacological treatments and promotes mental clarity, stress relief, and physical fitness. Importantly, yoga requires minimal equipment and can be practiced in a variety of settings, making it a versatile tool for public health interventions.

The lack of association with most demographic variables also highlights yoga's universal applicability. Regardless of gender, age, or socioeconomic status, yoga has the potential to benefit all individuals struggling with obesity. The only significant behavioral factor impacting weight was smoking, underscoring the multifactorial nature of obesity and the importance of addressing concurrent unhealthy habits.

Given these outcomes, integrating yoga into mainstream obesity management programs could prove transformative. It offers a pathway to not only weight loss but also to improved quality of life and long-term health maintenance. Therefore, yoga should be promoted more aggressively within public health policies and healthcare systems focused on chronic disease prevention and management.

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