INTRODUCTION

Obesity is a chronic nutritional disorder which is increasing in prevalence worldwide. Overweight and obesity have reached the epidemic proportion globally, thus posing a growing threat to the health of the young population. Studies have shown that yoga practices reduce anthropometric parameters and improve metabolic status.

BACKGROUND: Obesity is a complex disorder involving an excessive amount of body fat. Overweight and obesity have reached the epidemic proportion globally, thus posing a growing threat to the health of the young population. Studies have shown that yoga practices reduce anthropometric parameters and improve metabolic status.

OBJECTIVE: The aims of the study was to study the effect of classical hata yoga training program on anthropometric variables in healthy adults.

MATERIALS AND METHODS: In this interventional study with a pre-post design on 34 healthy adult participants, were taught classical hata yoga training module. Assessment were carried out on the 1st and 45th day of the program, using a BMI, waist, hip circumferences and mid-arm circumference were assessed.

RESULTS: Significant reduction in BMI, waist, hip and mid arm circumferences respectively ($p<0.00$).

CONCLUSION: This study provides evidence that classical hata yoga training is a preventive program for metabolic syndrome and obesity.

KEYWORDS

BMI- Body Mass Index, Mid-arm Circumference, Waist Circumference, Hip Circumference, Classical Hata Yoga.

MATERIAL AND METHODS

Thirty four participants who had enrolled in a forty five days classical hata yoga training program. Their ages ranged between 18 and 50 years (group average ±S.D., 31.4±9.3 years; 28 females and 6 males). We have fully explained the potential risks and benefits in the study before written informed consent was provided by participants, the study was approved by the ethics committee of the institution, Lakulish yoga university, located in Ahmadabad, Gujarat, India. The selection criteria included: absence of a disease which could have contributed to obesity (e.g., hypothyroidism, polycystic ovarian syndrome), and those with associated medical problems such as cardiac problems, uncontrolled hypertension, diabetes, osteoarthritis and on psychiatric medications were excluded. In this study we adopted a convenient sampling method to recruit the subjects who were undergoing forty five days Classical Hata yoga training program at Lakulish yoga university, Ahmadabad, Both genders, Age group 18 to 50 years, a single group pre-post design was used. The 45 days study was successfully completed by 34 participants.

DESIGN AND SETTING

The trial was a single group, pre-post trial. Participants were assessed on day 1 and day 45 of the forty five days classical hata yoga training program, when the assessment was completed, respondents were appreciated for their time and cooperation. The training program was held in a non residential Lakulish yoga university, located in Ahmadabad, Gujarat, India.

INTERVENTION

The forty five days classical hata yoga training program: a yoga teacher training program consisted of two sessions each day. The first session was between 08:30 hours and 11:30 hours for practice and the second session was between 12:00 hours and 13:30 hours for theory. In a day participants practiced shithilikarana vyayamas (loosening practices) followed by yogasanas and relaxation techniques with pranayama practices. The concepts used to develop a specific module of teaching for training program were taken from the classical hata yoga scripture of Lakulish yoga tradition [13], one of the oldest schools of hata yoga in India. Yoga is defined as mastery over the modifications of mind (Chitta Vritti Nirodha-definition of yoga by Patanjali). It helps to remove the unnecessary surges of neuromuscular activation resulting

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ABSTRACT

BACKGROUND: Obesity is a complex disorder involving an excessive amount of body fat. Overweight and obesity have reached the epidemic proportion globally, thus posing a growing threat to the health of the young population. Studies have shown that yoga practices reduce anthropometric parameters and improve metabolic status.

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from heightened stress responses that may contribute to aging.

ASSESSMENTS

BODY MASS INDEX

The body mass index (BMI) was calculated as the body weight (in kg), in light clothing and without shoes, divided by height (in m) squared. The body weight was measured using an electronic weighing machine (ESSAE-DIGI, Bangalore), which is accurate to 0 mm between 200 gms to 150 Kgs. The height (in centimetres) was measured using a scale graduated in millimeters.

WAIST CIRCUMFERENCE

Participants were lightly clothed and asked to stand upright with feet 25 to 30 cm apart and weight evenly distributed. A scale graduated in millimeters was fitted around the abdominal girth without compressing soft tissue. The waist circumference was measured to the nearest 0.1 cm in a horizontal plane midway between the inferior costal margin and the iliac crest. Waist circumference is considered a reliable measure in clinical practice [14].

HIP CIRCUMFERENCE

Hip circumference was measured around the pelvis at the point of maximal protrusion of the buttocks. The ratio of the waist circumference to the hip circumference was derived and is a ratio between the fat stored centrally inside the abdomen (waist circumference) and fat stored peripherally (hip circumference).

MID-ARM CIRCUMFERENCE

The mid-arm circumference was measured as the circumference of the non-dominant arm mid-way between the bony prominence of the shoulder (the acromion) and the elbow (the olecranon). This circumference includes muscle mass and a circumferential skin fold.

DATA ANALYSIS

The data taken on the last day and on the first day of the classical hata yoga training program were compared with t-test and wilcoxon signed rank test for paired data using SPSS version 16.0.

RESULTS:

Following 45 days of Classical hata yoga training program, there was a significant decrease in BMI, waist circumference, hip circumference, mid arm circumference (p<0.001, comparing the values at the end of the training with the values at the beginning; t-test for paired data/Wilcoxon signed-rank test). There was a reduction in waist/hip ratio, though it was not statistically significant. The groups mean data/wilcoxon signed-rank test). There was a reduction in waist/hip circumference, compared with baseline mid-arm circumference, compared with baseline.

Some limitations of the current study are the relatively small sample size, may not have been sufficient to obtain statistically significant results. A future study with a larger number of participants is necessary. Furthermore, obesity is a complex condition and thus treatment modicities should be of holistic in nature. The finding of the study demonstrate that classical hata yoga training is a suitable approach for preventing obesity, as indicated by improvements in BMI, waist, hip circumferences and mid-arm circumference, compared with baseline values. Future investigations are designed to establish and expand the results of the present study and to compare the preventive effects of classical hata yoga training with those of conventional approaches.

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CONFLICT OF INTEREST

None

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