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An experimental study on obesity and weight management with special reference to yoga practices

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Abstract

Purpose: Obesity is recognized as worldwide health problem by W.H.O. Every third person in the world is suffering from this health problem. The objective of this paper is to find a cure for obesity through Yoga.

Design Methodology Approach: A group of 20 people was undertaken as experimental group. The experimental group practiced Yoga for six days in a week for three months.

Findings: Weight loss was noticed in the experimental group. It was revealed that Yoga positively helped obese people in weight loss. Problems emerging due to obesity were also getting cured through Yoga automatically.

Paper Type: Empirical Research Study.

Keywords: Obesity, yoga, health problem

Introduction

According to W.H.O., a person with a BMI equal to or more than 25 is considered as overweight. And a person with BMI of 30 or more is obese. BMI (Body Mass Index) is calculated as a person's weight in (kg.) divided by the square of his/her height (in meters). There are approximately more than 2 billion people are obese in the world, which is 30% of total population. This no. is continuously rising. Obesity increases the risk of serious health problems. Over 3 million people die because of obesity every year. Due to increased risk of morbidity, obesity is now recognized as a disease. The main causes of obesity are overeating and physical inactivity. It also means that the amount of energy intake & the energy expenditure is imbalanced. Obesity causes stress, depression, low self-esteem, decreased energy level, breathing problems, sleeping problems, joint pain, heart diseases, diabetes, high BP, high cholesterol, skin problems, stone and breast & uterus cancer etc. In human body, 'Adipocytes' aka lipocytes (fat cells) are the cells which bear fat. In the obese people these cells are bigger in size and larger in number. Side-effects of some drugs & medicines can also cause obesity. Some other reasons of obesity also include hormonal problems, hereditary and psychological factors. Yoga is an old science, which is practiced worldwide for health benefits and to cure health problems. In case of obesity, Yoga makes a person active, provide mental stability and cure hormonal imbalances. Asanas like Nokasana, Tadasana, Kati-chakrasana, Padhasana, Hastotanasana, Bhujangasana, Halasana, Dhanurasana, Ardha-Matsyaendrasana, Paschimottanasana, Savangasana, Ushtrasana, Drut-Halasan, Shashank-Bhujangasana, Udraakarshana etc. are helpful in curing obesity. Pranayama (Breathing techniques) like Bhastrika, Nadi-Shodhana and Bharamari, practice of Yoga-Nidra and cleansing processes like Neti (Jala, Sutra, Rubber), Kunjal and Shankha-Pakshalana are also helpful in the treatment of obesity. With Yoga, food habits and active lifestyle also plays a vital role in obesity management.

Literature review

S. Dhananjai *et al.* (2013) [3] have conducted a study on reducing psychological distress and obesity through Yoga. 272 patients took part in this, later divided into two groups i.e., experimental and controlled group. It was found that the study support Yoga as an effective therapy to improve anxiety and depression symptoms as well as obesity in the subjects.

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P.B. Rshikesan *et al.* (2016) [7] have done a randomized controlled trial on Yoga practice for reducing the male obesity and weight related psychological difficulties. 80 subjects were enrolled but only 72 completed the trial. The subjects practiced IAYT (Integrated Approach of Yoga Therapy) for 14 weeks and then 3 months at home. It was found that anthropometric and psychological parameters such as Wt, percentage body fat, PSS for improved. S.S. Rathi *et al.* (2018) [5] have researched about development and validation of Integrated Yoga Module for obesity in adolescents. The Yoga practices for this module were designed as per Yoga texts and the experience of Yoga experts. And it was validated by 16 Yoga experts by using Lawshe's content validity formula. Nisha Shinde *et al.* 2013 [8] conducted a study on Yoga and aerobic exercises in obesity and its effect on pulmonary function. 60 subjects were selected and further divided into 2 groups. One group did aerobic exercises and another one did Yoga practice. It was found that regular practice of Yoga is really helpful in weight reduction & improves the pulmonary functions. Dr. Annpoorna K & Dr. Vasantlaxmi K (2013) [1] researched about the effects of Yoga therapy on obesity and quality of life in women. 25 females voluntarily participated in the study. They practiced Yoga twice a day for 3 months. It was found that Yoga practice is helpful in weight reduction and improving quality of life. Sunita Rani (2017) [4] researched about obesity and its control Yoga practice. Bhujangasana, Halasana, Surya Namaskara, Kapalhati, Tadasana and Marjariasana are explained in this paper. It was concluded that 30-60 minutes daily Yoga practice is useful for health and altering obesity. Vijay Tundwala *et al.* conducted a study on effect of Yoga and various asanas on obesity, hypertension and dyslipidemia. 150 patients were selected for the study further divided into 2 groups of 75 each i.e., controlled and experimental. Experimental group practiced Yoga for 3 months. It was found that there was significant decrease in the parameters of obesity viz. BMI and WHR. Jennifer Rioux and Cheryl Ritenbaugh (2013) [6] narrated a review about the quantity and quality of clinical trials of Yoga as an treatment for obesity. They found out that Yoga appears to be an appropriate and potentially successful intervention for weight maintenance, prevention of obesity and risk reduction for diseases in which obesity plays a significant

role. Somdutta Tiwari & Sudhanshu Verma (2016) [9] conducted a study on corporate personnel to see the impact of Yoga on obesity management. 45 subjects were taken as experimental group. They practiced Yoga for 30 days. It was found that kunjla kriya can help the people suffering from obesity. Puja Rani Bhardwaj and Abhishek Kumar Bhardwaj (2015) [2] researched about therapeutic applications of Yoga for weight reduction in obese population. They concluded about how Yoga works to control obesity.

Objectives

The objective of this paper is to study the effects of Yogic Asanas, Pranayama, Mudras, Bandhas and Yogic cleansing processes on obesity. This paper attempts to study the effects of Yoga practice on obese subjects belong to Class I Obesity (BMI-30.0–34.9).

Materials and Methods

20 people from Rishikesh were undertaken as the experimental group. Some subjects were working while others were home-makers or partial workers. Every participant of this group was affected by Class I Obesity. Descriptive statistics was used for analysis of this study. All subjects of this study were volunteers. Some of the subjects were constantly inactive while others were doing some efforts for their body by themselves. But, all of them wanted to participate in this research so that they can do some Yoga practice on daily basis for weight-loss, obesity management and better health.

Intervention

In this empirical research study, a Yogic regime was set for the experimental group consisted of Yoga Asanas, Pranayama, Mudras, Bandhas and Shat-Karmas in order to get full results. The experimental group practiced this set of Yogic practices for 90 days, except Sundays. In this research, single experimental group design was used to achieve the objectives. Data was collected in the form of questionnaires before the study and after the 90th day Yoga practice. Post questionnaire data was analyzed, in order to find out if there is any difference or not due to the intervention.

Table 1: Intervention schedule

| S. No. | Yogic Practice | Timing | Names of the practices |
|----------------------------|---------------------------------|--------|---|
| 1 | Meditation | 10 | Guided Meditation |
| 2 | Prayer | 5 | Gayatri-Mantra + Beginning Prayer |
| 3 | Shukshma vyayam | 10 | Joint movements & stretching |
| 4 | Surya namaskar (Sun Salutation) | 10 | A set of 12 Asanas (Pranamasana + Hasta-uttanasana + Uttanasana + Ashwa-sanchalanasana + Adhomukha-shvasana + Ashtanaga-Namaskara + Bhujangasana + Adhomukha-shvasana + Ashwa-sanchalanasana + Uttanasana + Hasta-uttanasana + Pranamasana) |
| 5 | Asanas | 20 | Tadasana, Padhastasana, Paduttansana, Nauka-sanchalana, Chakkichalana, Pawanmuktasana, Naukasana, Marjariasana, Sarvangasana, Halasana, Dhanurasana, Paschimottanasana |
| 6 | Mudras | 10 | Vipritkarni Mudra, Yoga Mudra |
| 7 | Pranayama | 15 | Bhastrika Pranayama, Nadi Shodhana Pranayama, Bhramari Pranayama |
| 8 | Yogic cleansing processes | 5 | Kapalbhati, Agnisara |
| 9 | Bandhas | 5 | Uddiyana Bandha, Jalandhara Bnadha |
| 10 | Chanting | 5 | Om chanting |
| 11 | Relaxation | 10 | Yoga-Nidra |
| Total Time of the Practice | | | 1 hour 45 minutes |

Tools

For body weight measurement, a weighing machine was used and for height measurement, an inch-tape was used.

Procedures

This research was conducted in Rishikesh (Uttarakhand) India. 20 subjects, half of them were females and other half males, were selected through purposive sampling and were assigned as experimental group of the present study. Their ages were between 20 to 45 years. All subjects of this experimental group had followed their set of Yogic practices during the course of study. Before and after the study the outcome measures were assessed to find the difference if any.

Result and Discussion

The objective of this research study was to find out the effects of Yoga Asanas, Pranayama, Mudras, Bandhas & Yogic cleansing processes on obesity in participants, who are suffering from Class I Obesity. The participants deliberately followed the set Yogic Regime for 90 days, in order to achieve the objective of the study. The data was collected before & after the study, in the form of questionnaires and then analyzed. The data collection before the intervention is as follows:

Table 2: Before

| S. No. | Weight (in Kg.) | Height (in cm.) | BMI (Body Mass Index) |
|--------|-----------------|-----------------|-----------------------|
| 1 | 92 | 170.68 | 31.6 |
| 2 | 85 | 167.64 | 30.2 |
| 3 | 86 | 164.59 | 31.7 |
| 4 | 98 | 176.78 | 31.4 |
| 5 | 82 | 161.54 | 31.4 |
| 6 | 95 | 173.73 | 31.5 |
| 7 | 87 | 165.59 | 31.7 |
| 8 | 88 | 164.59 | 32.5 |
| 9 | 93 | 167.64 | 33.1 |
| 10 | 105 | 179.83 | 32.5 |
| 11 | 87 | 165.59 | 31.7 |
| 12 | 89 | 168.80 | 31.2 |
| 13 | 94 | 170.68 | 32.3 |
| 14 | 93 | 167.64 | 33.1 |
| 15 | 103 | 176.78 | 33.0 |
| 16 | 110 | 179.83 | 34.0 |
| 17 | 86 | 161.54 | 33.0 |
| 18 | 85 | 158.25 | 33.9 |
| 19 | 84 | 158.49 | 33.4 |
| 20 | 80 | 158.49 | 31.8 |

In this table, the data collection before the intervention of Yogic regime was listed & analyzed. The data had shown clearly that the participants of this study were seriously obese. The subjects were clearly in risky stage of obesity, and weight loss was a necessity for them in order to lead healthy lives. Weight management was necessary for them to prevent further growing health problems due to obesity. The participants were at the doors of dangerous & extreme stage of last level of obesity.

After the intervention of Yoga practices for 90 days, for 1 hour 45 minutes daily (except Sundays), the data was collected once again. The data after the intervention is as follows:

Table 3: After

| S. No. | Weight (in Kg.) | Height (in cm.) | BMI (Body Mass Index) |
|--------|-----------------|-----------------|-----------------------|
| 1 | 87 | 170.68 | 29.9 |
| 2 | 82 | 167.64 | 29.2 |
| 3 | 80 | 164.59 | 29.5 |
| 4 | 90 | 176.78 | 28.8 |
| 5 | 75 | 161.54 | 28.7 |
| 6 | 89 | 173.73 | 29.5 |
| 7 | 82 | 165.59 | 29.9 |
| 8 | 82 | 164.59 | 30.3 |
| 9 | 84 | 167.64 | 29.9 |
| 10 | 98 | 179.83 | 30.3 |
| 11 | 82 | 165.59 | 29.9 |
| 12 | 82 | 168.80 | 28.8 |
| 13 | 90 | 170.68 | 30.9 |
| 14 | 87 | 167.64 | 31.0 |
| 15 | 95 | 176.78 | 30.4 |
| 16 | 100 | 179.83 | 30.9 |
| 17 | 81 | 161.54 | 31.0 |
| 18 | 77 | 158.25 | 30.7 |
| 19 | 79 | 158.49 | 31.5 |
| 20 | 70 | 158.49 | 27.9 |

After 90 days of continuous Yoga practices, the data was collected once again and analyzed as above. Favorable outcomes were noticed in this data. The participants showed positive results. Yoga really helped the participants in weight management. Many of the participants loosed a lot of weight due to the practice sessions of Yoga and some of them even loosed their weights in a manner that they were no more lie in the category of Class I Obesity & now fall down under 'overweight' category in BMI chart. The findings also revealed that the participants were healthier than before in every manner. Because of the daily Yoga practice, many other health problems related to obesity were also started curing & subjects were relieved of excess weight and other daily life problems created by it.

Conclusion

The lives of people are becoming inactive day by day in today's time. This fact is leading the world to growing numbers of health problems. Obesity is one of those problems, which is present in huge number of population. It is one of the biggest health problems worldwide. Obesity gives birth to many other health problems also. Yoga is a great physical exercise to keep the body fit. Many people around the world are considering Yoga in their daily life to stay healthy and fit. In this research study 20 people from Rishikesh (Uttarakhand) India were selected. All the subjects were affected by Class I Obesity and on the gates of last dangerous stages of obesity. A special Yogic regime was set for obesity management including Asanas, Pranayama, Mudras, Bandhas and Yogic cleansing processes. This specific set of Yoga practices was strictly followed by the subjects for 90 days except Sundays. The Yoga practice session was of 1 hour and 45 minutes daily and all the subjects followed it dedicatedly. The data was collected two times i.e. before & after of the study through questionnaires and analyzed through descriptive statistics. After the intervention of the daily Yoga practice, positive results were noticed in the participants. Most of the subjects loosed their

weights from 2 to 10 kg. Other problems related to obesity also started curing automatically. Yoga has been proven as a cure for obese people. It can be seen as a great therapy for obesity management & weight loss. This study will provide the further path for research upon the effect of specific Yoga exercises on obese people & for weight management. This research study will also be helpful for future research related to finding the cure of different diseases through Yoga. Yoga will be seen as a great tool in disease management in future research studies.

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