A Study on Body Mass index of Yoga Practicing Individuals and its Association with Their Age

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Abstract

India is a multiethnic country, but ethnic differences in adiposity or the influence of lifestyle and ethnicity on obesity and cardio-respiratory health has been less explored in spite of India's diversity in terms of biological as well as socio-cultural backgrounds. Obesity is a major public health issue in India and worldwide and its prevalence is increasing. Prevention and intervention programs, frequently developed to target specific behaviors, might be more effective if comprehensive since behaviors rarely occur in isolation. The purpose of the study was to examine the Body Mass Index of Yoga Practicing individuals at Kuvempu University Jnansahyadri campus were included in the study. The study further assessed the relationship between Body Mass Index and Age of Selected Active individuals of Jnansahyadri campus. For the purpose of this study Sixty-one active individuals actively involved in regular physical activities during morning were selected from Kuvempu University Jnanasahyadri campus, Shankarghatta. In order to test hypothesis of this study health status was assessed with the help of Body Mass Index. Height was measured in meters with the help of a Stadiometer, weight with the help of Standard Weighing machine. The height and weight measured was utilized to calculate Body Mass Index. Descriptive statistics like Mean and Standard Deviation were employed and results on health status obtained. Further, percent analysis was carried out for understanding the health status of Active individuals. For understanding the relationship between Body Mass Index and Age of subjects Pearson Product Moment Correlation was employed. On the basis of the results of present investigation it can be concluded that a *large* proportion of active individuals are 'Over weight' (47.54%), *a small* proportion are 'Obese' (13.10%). 39.34% of the subjects were found to be 'Normal'. Further, there did not exist any relationship between Body Mass Index and Age in Yoga practicing individuals at Kuvempu University.

Key words: Obesity, Body Mass Index, Diabetes, Health, Non-communicable diseases

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Introduction

Obesity is a major public health issue in India and worldwide and its prevalence is increasing. The problem of obesity started early in India. The country has the second highest number of obese children – 14.4 million – in the world after China. A sedentary lifestyle and junk food are the main causes. Indian diets are

carbohydrate-heavy and oil-rich. What's distinctive about India, though, is that two cultural factors help obesity take root. One is the mental connection some Indians make between being fat and being "prosperous". In a poor country, being plump is seen as a sign that you eat well. India's embrace of the worst of both Eastern and Western ways is sending lifestyle illnesses such as obesity and diabetes skyrocketing. (Shetty, 2012).

Obesity has led to a host of other health woes growing at an alarming rate in India, including hypertension and diabetes. India is on track to own the unenviable title of diabetic capital of the world as soon as 2025 with more than 65 million Indians already suffering from the disease. Sadly, "diabesity" has become a common term in the Indian vocabulary (Pandya, Lakhani and Patel, 2011).

India is a multiethnic country, but ethnic differences in adiposity or the influence of lifestyle and ethnicity on obesity and cardio-respiratory health has been less explored in spite of India's diversity in terms of biological as well as socio-cultural backgrounds. Chronic non-communicable diseases such as hypertension, atherosclerosis, acute myocardial infarction, stroke, diabetes, obesity, and chronic kidney disease are the major cause of death not only in high income, but also in medium and low income countries (Gallieni, et. al., 2014).

Prevention and intervention programs, frequently developed to target specific behaviors, might be more effective if comprehensive since behaviors rarely occur in isolation. To best target such prevention programming, it is important to understand optimal behavior patterns and to place emphasis on the strategies that target more complex behavioral patterns rather than single behaviors. Yogic practices are believed to be effective in treating many health problems (Wolff, et. al., 2013). It has been found to be effective

in body weight management in various age groups and population (Pal, et. al., 2011).

In this context, the effects derived from practice of yoga in the rural locality of Kuvempu University was intended to be examined in the present study. The yoga practicing individuals at Kuvempu University were assessed for Body Mass Index and age to make inferences.

The objective of the study

1. The objective of the study was to examine the Body Mass Index of Yoga Practicing individuals at Kuvempu University Jnansahyadri campus.

2. The study further assessed the relationship between Body Mass Index and Age of Selected Yoga practicing individuals at Jnansahyadri campus of Kuvempu University.

Methodology

For the purpose of this study Sixty-one active individuals practicing Yoga regularly in the morning were selected from Kuvempu University Jnanasahyadri campus, Shankarghatta. Convenience sampling was employed to gather information on Body Mass Index from Yoga practicing individuals at Kuvempu University. Male and female active individuals were included in the study. Their age ranged between 45-55 years. These subjects were involved in yogic practices at morning in the Jnanasahyadri campus during the year 2020.

In order to test hypothesis of this study health status was assessed with the help of Body Mass Index. Height was measured in meters with the help of a Stadiometer and body weight with the help of Standard Weighing machine. The height and weight measured was utilized to calculate BMI with the formula as below:

$$BMI = \frac{\text{weight (kg)}}{\text{height (m}^2)}$$

The data required for this study was collected at Kuvempu University campus during spare time of the subjects. The tests for height and weight were administered with the assistance of a trained helper.

The stadiometer available at the Department of P G Studies and Research in Physical Education, Kuvempu University was utilized for measuring the height of subjects. Prior to height measurement the instrument was calibrated properly with a measuring rod. The subjects were directed to remove their foot wears if any. The subject was asked to stand with his/her back to the height rule. The back of the head, back, buttocks, calves and heels were touching the upright and the feet was held together. The subject was instructed to look straight and in some instances the assistance of trained helper was sought. The head piece of the stadiometer or the sliding part of the measuring rod was lowered so that the hair was pressed flat. Height was recorded to the resolution of the height rule.

The subjects stood on the weighing machine with minimal movement with hands by their side. Foot wears and excess clothing was removed.

The Norms for Assessment

The results obtained were compared with standard norms available and inferences derived. The following table provides Standard norms for Body Mass Index.

Descriptive statistics like Mean and Standard Deviation were employed and results on health status obtained. Further, percent analysis was carried out for understanding the health status of Active individuals. For understanding the relationship between Body Mass Index and Age of subjects Pearson Product Moment Correlation was employed.

Findings of the study

Percent analysis was carried out to find the percentage of Yoga Practicing Individuals belonging to various categories of Body Mass index. The results of percent analysis of Body Mass Index of Yoga Practicing Individuals are provided in table 2.

Table 1. Norms for assessing BMI

Category	BMI range – kg/m²
Very severely underweight	less than 15.0
Severely underweight	from 15.0 to 16.0
Underweight	from 16.0 to 18.5
Normal (healthy weight)	from 18.5 to 25
Overweight	from 25 to 30
Obese Class I (Moderately obese)	from 30 to 35
Obese Class II (Severely obese)	from 35 to 40
Obese Class III (Very severely obese)	over 40

Source: www.wikepedia.com

Table 2. Summary of percent analysis on Body Mass Index in Yoga Practicing Individuals of Kuvempu University

Category	Frequencies	Percentages
Underweight	00	00
Normal (healthy weight)	24	39.34
Overweight	29	47.54
Obese class I	07	11.47
Obese class II	01	1.63
TOTAL	61	100
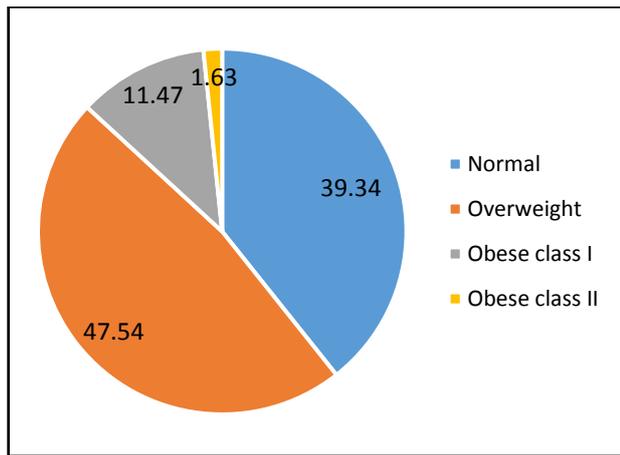
Figure 1. Graphical illustration of percentage wise results of Body Mass Index of Active individuals.

From table 2 it can be inferred that the Body Mass Index in majority (47.54%) of the Yoga Practicing individuals is 'Overweight'. Another 11.47% of the subjects are 'Obese class I' and a very less percent of the subjects are 'Obese class II' (1.63%); It is observed that 39.34% come under 'Normal' category. The above information is graphically presented in Figure 1 as below.

Table 3 provides descriptive results including Mean and Standard Deviation of Yoga Practicing Individuals on Body Mass Index.

**Table 3.** Descriptive results of Body Mass Index and age of Yoga Practicing Individuals

	Mean	Std. Deviation	N
Body Mass Index	26.08	3.51	61
Age (in years)	53.05	13.16	61

From table 3 it is evident that the Mean Body Mass Index of Active individuals at Kuvempu University is 26.08±3.51 and Age is 53.05±13.16. The results in the above table is normally distributed and exhibits acceptable homogeneity of sample. The above results were further subjected to Pearson product moment correlation. The results are provided in table 4.

Table 4. Summary of correlation between Body Mass Index and Age parameters of Yoga

		Age
Body Mass Index	Pearson Correlation	.031
	Sig. (2-tailed)	.309
	N	61

From table 4 it is clear that there is no significant correlation between Body Mass Index and Age of Yoga practicing individuals of Kuvempu University Jnanasahyadri campus. The above results are graphically depicted in Figure 2 as below.
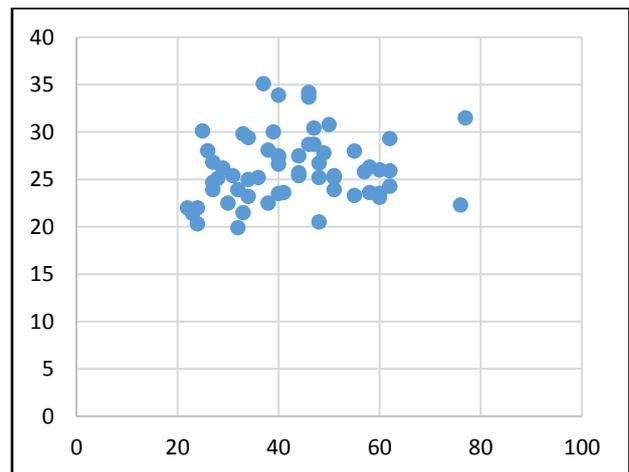
Figure 2. Graphical illustration of association between Body Mass INdex and Age of Active individuals at Kuvempu University

Discussion on findings

The present study reveals the fact that the yoga practicing individuals at Kuvempu University campus are having varied body composition status. The proportion of individuals with overweight and obesity are a matter of real concern. Within the limitations of the study it is observed that the yogic practices are not sufficient to obtain and maintain normal body mass index. The results of the study by Manna and Chowdhury (2020) to find

out the effects of 12 weeks of yoga practice on body composition showed significant improvements in body composition of children through regular practice of yogic asanas, pranayama, and meditation. This means that the improvements are age specific. In another study, Manna (2019) expected to discover the impacts of yoga on body composition and found that yoga practice may diminish body fat. It should be noted that the volume, intensity and frequency of practice are equally important to reap benefits from yogic practices. Pandit, et. al., (2019) studied the short-term impact of a brief lifestyle intervention based on yoga on body weight, BMI, body fat percentage & blood pressure. The researchers concluded that a seven-day yoga intervention does cause some reduction in weight, body fat mass, body fat percentage and Body Mass Index. Systematic selection and practice of yoga is another important aspect to be observed by the practitioners. Zorofi, Hojjati and Elmiyeh (2013) investigated the effect of one-month fasting along with yoga training on the body composition of novice female athletes. Yoga exercises along with fasting can help overweight people to experience ideal weight loss; also for the athletes who stop exercising in Ramadan, yoga can be used as an alternative to maintain their weight. This study reveals the importance of diet during yogic practice to obtain benefits. Also, it is found through the present investigation that there is no significant relation between age and body mass index of yoga practicing individuals. The benefits are age independent.

Conclusion

On the basis of the results of present investigation it can be concluded that a *large* proportion of active individuals are 'Over weight' (47.54%), *a small* proportion are 'Obese' (13.10%). 39.34% of the subjects were found to be 'Normal'. Further, there did not exist any relationship between Body Mass Index and Age in physically active individuals at Kuvempu University.

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