Research Article

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STHOULYA (OBESITY) WITH SPECIAL REFERENCE TO BMI: A SURVEY STUDY

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ABSTRACT

Body mass index is a valuable parameter to assess the different nutritional statuses. Information of a total of 60 Ayurveda students of Sri Ganganagar College of Ayurvedic Science & Hospital, Rajasthan, were collected for a descriptive cross-sectional survey study to assess BMI. In this study, 34 (56.7%) were male, and 26 (43.3%) were female. The mean BMI of male students were 22.98 (standard deviation 1.131) and of female students was 22.97 (standard deviation 1.668). The prevalence of overweight was 16 (47%), and obesity was 2 (6%), normal weight 16 (47%) in male students, while in female students, 14 (54%) were normal weight, 9 (35%) were overweight, 3 (11%) were obese. But no underweight students were found in male & female. However, this study showed that overweight & obesity is an emerging problem for both male and female medical students.

Keyword: Sthoulya, Medo Roga, Nindita Purusha, Obesity, BMI

INTRODUCTION

Lifestyle disease is a malediction of the 21st century. Sthoulyata, or obese person, is one of the Nindita Purush described by Acharaya Charak[1]. The impact of Sthoulya like reduced life expectancy, decreased sexual urge, excessive sweat, hunger, thirst & weakness[2]. It occurs due to over intake of heavy (Guru), sweet (Madhur) food, avoidance of physical activity.

Obesity in students, especially in young adults, is an emerging hazard. According to WHO, 39% of young adults were overweight in 2016, and 13% were obese. A recent study shows that more than 1.9 billion adults are overweight, and 650 million are obese worldwide. Obesity is a risk factor for cardiovascular disease, type 2 diabetes, arthritis, certain types of cancer, and cancer recurrence [3]. Approximately 2.8 million deaths are reported due to being overweight or obese. The prevalence rate of overweight and obesity in India is increasing faster than the world average due to changing lifestyles, industrialization, urbanization with the associated increasing rate of consumption of high calorie and high-fat foods coupled with low levels of energy expenditure in the form of insufficient physical activity in young adults.

METHODOLOGY

A descriptive cross-sectional survey study was conducted in the P.G Department of Swasthavritta & Yoga, Sri Ganganagar College of Ayurvedic Science & Hospital, Rajasthan, in September 2021. The study population consisted of a total of 60 Ayurveda students. Inform consent was taken before the study. A structured proforma was used to collect and record information on age, sex, height in centimetres and weight in kilograms of each subject. Body Mass Index (BMI) was calculated using the formula weight (kg)/height^2 (m^2). According to WHO criteria for Asian populations [4], the cut-off points are BMI less than 18.5 was considered underweight, 18.5-22.99 average weight, 23-24.9 was overweight and 25 or above obese. The data obtained were compiled and analyzed using SPSS 20 software for the Windows version. Data was presented in the form of a pie chart & graphs. Descriptive statistics were used in terms of numbers and percentages.

RESULT

Sixty Ayurveda students participated in the study with ages ranging from 25 to 35 years. Among them, 34 (56.7%) were male, and 26 (43.3%) were female (Figure 1). The mean BMI of male students was 22.98 (standard deviation 1.131) and of female students was 22.97 (standard deviation 1.668) in (Table 1 and Figure 2). In the study, the prevalence of overweight was 16 (47%), and obesity was 2(6%), the average weight of 16(47%) in male students (Figure 3). While in female students, 14(54%) were average weight, 9(35%) were overweight, 3(11%) were obese (Figure 4). But in both categories, no underweight students were found.

DISCUSSION

In the present study, most of the students' regular weigh or near to overweight (BMI <23), while we observe the data the overweight students are more male (47%) than female (35%), but the Obesity rate is more in female (11%) than male (6%). Our study is only limited to Ayurveda students. So, it shows only the peak of the iceberg.

Table 1: Mean BMI of students

Gender	Number	Mean	Std. Deviation
Male	34	22.9878	1.13163
Female	26	22.9704	1.66889
Total	60	22.9803	1.37709

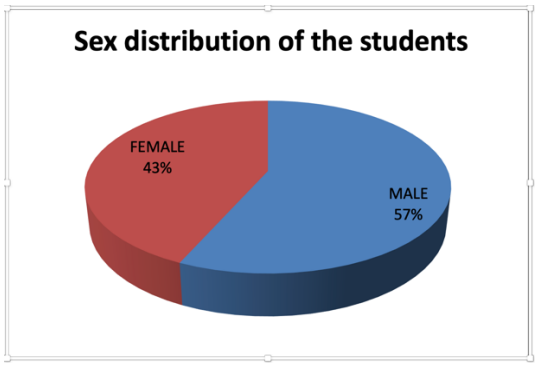

Figure 1: Sex distribution of the students

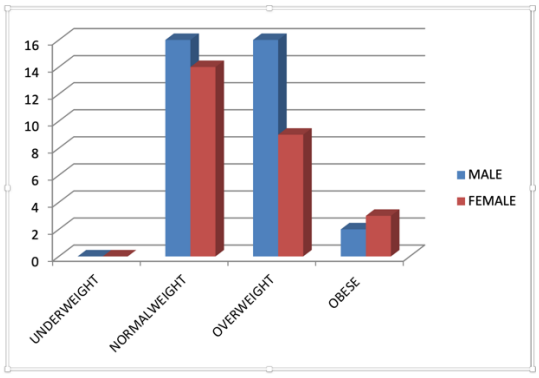

Figure 2: BMI distributions of the students

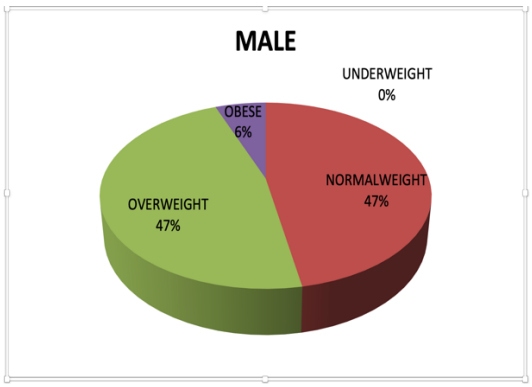

Figure 3: BMI distributions of male students

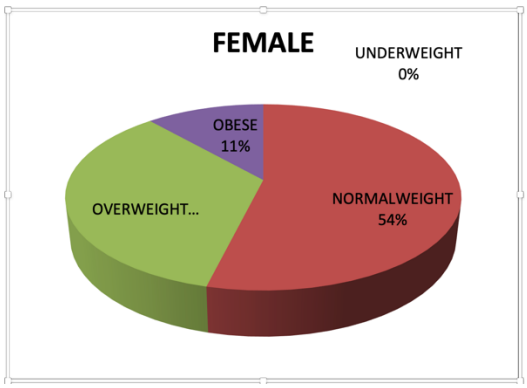

Figure 4: BMI distributions of female students

Obesity & trend of overweight become increase in Indian population. One study shows that 27.8% of all Indians will become overweight and 5.0% obese by 2030 [5]. Another study perceives that around 20% of rural Indian adults will be overweight or obese by 2030[6]. The present study shows the prevalence rate of obesity is higher in females than males. The previous study forecast that overweight increased from 8.4% to 15.5% among women, and the obesity increased from 2.2% to 5.1% between 1998 and 2015 [7]. Adult Indian population aged between 20-69 years overweight will more than double, and the prevalence of obesity will triple between 2010 and 2040[8]. Obesity also severely impacts unemployment, social disadvantages, and reduced socioeconomic productivity[9].

Obesity will impact the economy, mental health & sociocultural status. Anxiety and obesity are the two most common health complaints and are often co-occurring some time. Being overweight also increases anxiety and depression. The relationship between obesity and mental health is reciprocal. Some mental health conditions like bipolar disorder, chronic stress, anxiety, and depression can cause weight gain. The diet linked to Obesity is hypercaloric (in particular, high-sugar, high refined fat) developed the mental disorder, such as anxiety, via their effects on neuroendocrine stress and the neural circuit that supports the regulation of emotions[10].

Obesity has a significant impact on national economies by reducing productivity and life expectancy and increasing disability and health care costs. There are two types of expenses related to obesity. One is direct, which includes surgery, laboratory and radiological tests, and drug therapy; another is indirect costs, which are the value of lost work, increased insurance premium, and decreased wages[11]. Over 70 percent of countries, mainly lower and lower middle income, face a double burden: a high prevalence of undernutrition and obesity. The estimated economic costs of obesity vary considerably from region to region. For example, the United States range from US$89 billion to US$212 billion in total costs; in China, 3.58 and 8.73 percent of the gross national product (GNP) in 2020 and 2025, respectively; and Brazil it is increased from US$5.8 billion in 2010 to US$10.1 billion in 2050 [12]. A study shows the impact of obesity and overweight on GDP range from 0.45% to 1.62% of total GDP [13].

CONCLUSION

In this study, we see a significant percentage of overweight & obese people. Interestingly prevalence of obesity in females is higher than in males. It is a matter of concern that increase the number of overweight & obesity in medical students.

Good health and happiness are things we all deserve at every age. Overcome the challenges people with obesity can face in changing behaviour, healthy lifestyle, healthy food habit & Awareness program. Simplifying the causes of obesity & to find out the easy solutions by one word - eat less, be more active.

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