ISSN: 2458 – 868X

International Journal of Medical Science and Innovative Research (IJMSIR)

IJMSIR : A Medical Publication Hub

Available Online at: www.ijmsir.com

Volume – 1, Issue – 1, May – June 2016, Page No. : 11 - 14

An Incidence factor for Overweight People of Urban and Rural Areas in Kerala

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Abstract

The Overweight or obesity is the most important public Health problem and major risk factor for many diseases especially in women. The present study aimed to determine the prevalence of overweight in urban and rural women of Kerala. In this study, 1000 women (500 each belonging to urban and rural areas of Kerala) ranging in age 26-46 years onwards was examined. Data was collected by questionnaires and height and weight was measured using standard protocols to calculate the body mass index (BMI). The prevalence of overweight or obesity was more found in urban women as compared to rural women of Kerala. On the basis of BMI classification it has been concluded that prevalence of various grades of thinness is lower in urban women than rural women of Kerala.

Keywords: Kerala, Health, Overweight, Urban, Rural, WHO, BMI, CVD.

1. Introduction

Worldwide the prevalence of overweight and obesity is increasing at an alarming rate. Weight gain and fat storage were viewed as a sign of health and prosperity in the ancient days. Today, however, in all countries over the world, as a standard of living continues to rise, weight gain and obesity is posing a growing threat to health (WHO, 1999). Obesity refers to the presence of excess or abnormal weight of the body due to excess amount of fat in the body. Obese women were particularly more susceptible to diabetes, and diabetes, in turn, puts women dramatically in the increased risk of cardiovascular diseases (CVDs). In postmenopausal women, obesity sometimes substantially increases the risk of various cancers such as breast cancer and endometrial cancer. Overweight and obesity are associated with elevated mortality from all causes in both men and women and with the increasing weight risk of death rises. According to WHO (2010) more than 1 billion people are overweight, with 300 million meeting the criteria for obesity (World Health Organization, 2010). Disturbances in the menstrual cycle are frequently associated with overweight or obesity. Many studies revealed that 30% to 47% of overweight and obese women have irregular menses (Practice Committee, 2008). Once considered a problem related to affluence obesity is now fast growing in many developing countries and in poor neighborhoods of the developed countries (WHO 2000, 2003). Even in countries like India, which are typically known for high prevalence of under nutrition, significant proportions of overweight and obese now coexist with the undernourished (Pop kin, 2002). According to WHO (2004) people may become obese or overweight because they increase their consumption of foods which contain high levels of sugar and fat and their daily energy intake is more than their physical activities. Each year overweight/obesity is the underlying cause of death for 2.8 million people according to World Health Organization, 2012 (WHO, 2012).It is the fifth leading cause of risk for

death (WHO, 2009).In India more than 100 million individuals are noticed as obese. India is in midst of an obesity epidemic, which has serious health ramifications (Bhalwar, 2009). Obesity is often expressed in terms of body mass index (BMI) (Park, 2009). The World Health Organisation promulgated body mass index as a useful epidemiological measure of obesity. Various studies have now established the relationship between obesity, overweight and underweight (Matusik et al., 2007). In the developing countries such as India, overweight/obesity is emerging as a major health problem now a day (Shetty, 1999). Kerala is an economically advanced state of the country. The socioeconomic development in Kerala has created various changes in dietary intake, patterns of food consumption and physical activity levels. They all have contributed to the problem of increasing overweight and obesity in Keralain population, especially among women. Therefore, in the present study, an attempt has been made to study the prevalence of overweight among women residing in urban and rural areas of Kerala.

2. Materials And Methods

The present cross-sectional study has been conducted on a total of 1000 ever married females of two instinct groups, viz. Urban (500) and rural (500) ranging in age 36 to 46 years onwards. Data was collected during January, 2013 to November, 2015 from various urban and rural areas of Kerala including Mansa and Patiala districts. The anthropometric measurements - height (cms) and weight (kg) have been taken for each subject by the standard techniques given by Lohman et al., 1988. For the prevalence of overweight or obesity in urban and rural women, body mass index (BMI) is calculated through following equation.

$$BMI = Weight\ (kg) / (Height\ in\ cm)^2.$$

3. Results

The present study has included 1000 subjects (urban=500 and rural=500). The results have been presented in the form of tables and figures. Each table represents the age group, mean, standard deviation (SD) and standard error of mean (SEM). To observe the differences in both urban and rural women, test of significance (t-test) have been applied. For data analysis three age groups (26-35 years, 36-45 years and 46 years onwards) were made for each urban and rural woman. Table 2 shows the mean, SD and SEM values of height and weight of urban and rural women. The age group 26-35 years were taller (154.81cm and 154.49 cm respectively) among all the age groups in both urban and rural women of Kerala. In case of weight the individuals in 46 years onwards of the age group have been found to be heaviest among urban (67.96 kg) and rural (63.72 kg) women. Height in urban and rural women decreases with age, whereas weight in urban and rural women increases with age. Differences in height were statistically non significant among all the three age groups of both urban and rural women. The values of weight were higher in urban women than compared to their rural counterparts. The differences in weight were found to be statistically significant for 36-45 years and 46 years onwards of the age group with greater values in urban females (Table 2).

4. Body Mass Index (BMI)

A combination of weight and height, which is very popular in public health screening, is the body mass index (BMI). Body Mass Index (BMI) is also known as Quetlet's Index and is calculated as follows:

$$BMI = Weight\ (kg) / (Height\ in\ cm)^2$$

Table 3 show mean, SD and SEM values for Body Mass Index (BMI) of urban and rural women of Kerala. It has been observed that urban women in the age group of 46 years onwards possess maximum body weight (28.56) for given height than rural women (27.00). With the

increasing age, there is a general trend of increase in body mass index among all the three age groups of urban and rural women of Kerala. Urban women have greater mean values of BMI at all the three age groups than the rural women. Statistically significant differences have been found for BMI at the age groups of 36-45 years and 46 years onwards among urban and rural women (Table 4).

Further, using the WHO (2002) criteria of BMI classification, cases from the present study of both urban and rural women have been categorized into different grades of body mass index (BMI) (Table 5). Most of the women among all the three age groups from both urban and rural women fall under Grade-1-overweight category. Within this grade, highest number of urban women are from 36-45 years (59.78%) followed by 46 years onwards (54.40%) and 26-35 years (51.80%) of the age groups. Out of the total sample of urban women, 15.11% of women of age group of 26-35 years, 29.05% of age group 36-45 years and 37.36% of women of 46 years onwards age group fall under the Grade-2-overweight category. The urban women from all the three age groups, i.e. 26-35 years (28.06%), 36-45 years (18.38%) and 46 years onwards (8.24%) fall under the normal range of BMI. Very few women fall under the various grades of thinness. Only 1.44% of women of the age group of 26-35 years fall under Grade-1- thinness. The women of the age group of 26-35 years (0.72%) and 36-45 years (0.56%) of the age group fall under Grade-2-thinness category. None of the women among all the three age groups in urban women fall under Grade-3-thinness category according to BMI classification. Most of the rural women fall under Grade-1 verweight category (Table 6). Within this grade, highest number of women from the age group of 46 years onwards (57.71%) followed by 26-35 years (50.81%) and 36-45 years (50.00%) of the age groups. Rural women from all the three age groups such as 26-35 years (15.13%), 36-45 years (16.43%) and 46 years onwards (21.71%) fall under Grade-2-overweight. Only 0.71% from 36-45 years and 1.14% from 46 years onwards of the age group among rural women fall under Grade-3-overweight category. Out of the total sample, 27.03% of women in the age group of 26-35 years, 29.28% of 36-45 years and 17.71% of the age group of 46 years onwards fall under normal category of BMI classification. Very few rural women fall under various grades of thinness. Rural women from the age group of 26-35 years (0.54%) and (1.62%) fall under Grade-3-thinness and Grade-2-thinness. Only 1.43% of women from the age group of 36-45 years fall under Grade-2-thinness respectively. From the age group of 26-35 years (4.86%) followed by 36-45 years (2.14%) and 46 years onwards (1.71%) of the age group of rural women lie under Grade-1-thinness according to BMI classification.

5. Discussion

In this study, urban women had higher rate of overweight and obesity than rural women according to BMI. Prevalence of overweight or obesity was reported in more urban women than rural women (Mendez et al., 2005). Urban women of New Delhi were observed as obese (40%) as compared to rural women (36%) (Reddy et al., 2002). In most of the highly developed countries, overweight exceeded 50% in urban women and 40% in rural women (Martinez et al., 1999).

6. Conclusion

Body mass index (BMI) is a convenient index to use for adults because it allows comparisons of weight between

adults of different statures. Urban women have higher mean values of BMI in all the three age groups as compared to their rural counterparts.BMI classification (WHO, 2002) indicates that most of the women from rural areas fall under the normal range of BMI as compared to women from the urban areas. It shows that 2.88% of urban women were found to

be overweight and obese as compared to rural women

It shows that 2.88% of urban women were found to be overweight and obese as compared to rural women (1.14%). Many rural women were lying in the category of underweight (4.86%) than the urban women (1.44%). The present study reveals that the prevalence of overweight and obesity were seen among urban women as compared to rural women based on BMI classification and prevalence of various grades of thinness is lower in urban women than rural women of Kerala.

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