Research Paper

Asian Journal of Home Science December, 2011 Volume 6 Issue 2 :162-165

Body mass index, waist to hip ratio and body fatness correlation in urban adults of Dharwad

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ABSTRACT

IThe objective of the present investigation was to study the correlation between Body Mass Index, Waist to hip ratio and body fatness in urban adults of Dharwad. A total of 1013 subjects aged between 19-60+ years belonging to 340 families were covered for the study. The parameters studied for the investigation were height, weight, waist circumference and hip circumference which were recorded once during the study period. There was a significant positive correlation with Body Mass Index and all other body fat components in all the age groups except for per cent body fat in female obese grade II subjects of 41-60 years and male subjects of 41-60 years. A significant positive correlation of waist circumference with all the body fat components was evident except for fat free mass in all the age groups.

KEY WORDS : Body Mass Index, Waist to hip ratio, Percentage body fat, Fat mass, Fat Mass Index

How to cite this paper: Jayashree, S. and Rama K. Naik (2011). Body mass index, waist to hip ratio and body fatness correlation in urban adults of Dharwad. *Asian J. Home Sci.*, 6(2): 162-165.

Article chronicle: Received: 18.05.2011; Revised: 18.09.2011; Accepted: 20.10.2011

O ody Mass Index (BMI: weight in kg/height in meters2) B provides the most useful population level of measure of obesity. Within populations a BMI greater than 30 is associated with elevated blood pressure and an increased risk of Non Insulin Dependent Diabetes Mellitus (NIDDM) and Coronary Heart Disease (CHD). The criterion for the clinical diagnosis of abdominal obesity has been the use of waist to hip ratio (WHR). A high WHR is indicative of android obesity and has been directly related to hyperinsulinemia, impaired glucose tolerance, atherosclerosis, diabetes and gout. It is also associated with an increased risk of cardio vascular disease (CVD) even when the Body Mass Index is within the normal range. An attempt was made to study the correlation between Body Mass Index, Waist to hip ratio and body fatness in urban adults of Dharwad.

RESEARCH METHODS

A total of 1013 subjects belonging to 340 families were covered for the study. The parameters studied for the investigation were height, weight, waist and hip circumference using standard procedures suggested by Jelliffe (1966). The anthropometric measurements were recorded once during the study.

The classification as given by Garrow (1987) was used to classify them into obesity.

Measures of body fat:

Using the anthropometric measurements, three measures of body fat composition *viz.*, Percentage Body Fat (PBF), Fat Mass (FM) and Fat Mass Index (FMI) were calculated for obese subjects and for an equal number of normal subjects.

BMI classification	
BMI Class	Presumption diagnosis
<18.5	Undernourished
>18.5-25.0	Normal
25.0-30.0	Obese grade-I
>30.0	Obese grade-II
The abdominal obesity wa	s judged by waist-to-hip

ratio (Lean et al., 1995).

WHR = Waist circumference (cm)/Hip circumference (cm)

Reference range: Male ≥ 0.95 Female > 0.80

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Percentage body fat (PBF):

PBF was calculated using BMI as a criterion, as