Environment & Ecology 29 (2) : 559—560, 2011
 ISSN 0970-0420

Obesity Prevalence in Rural Adults of Dharwad

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Abstract

The prevalence of obese grade I (BMI 25—30) and grade II (BMI 730) were almost same between 13—60 year groups. A dechine of obesity was found among elderly (760 years). The prevalence of obese grade I was higher in females except in 60 + years. About 18.4% of normal subjects were abdominal obese followed by under-nourished (5.3%), obese grade I (4.8%) and grade II (1.46%).
Key words : Obesity, Prevalence, Rural adults.

Obesity is widely prevalent in several developing countries, particularly those in rapid transition and is affecting both children and adults. In India, however, the documented information on obesity prediction is scanty. Hence, the present investigation was carried out to study the obesity prevalence in rural adults of Dharwad.

Methods

A total of 350 families from Dharwad were randomly chosen for the study, out of which 1,101 subjects belonging to 19 to 60+ years were covered for anthropometric measurements. The parameters studied for the investigation were height, weight, waist and hip circumference. The body mass index (BMI) and waist to hip ratio were computed later to screen them for general (1) and abdominal obesity (2) respectively.

Results and Discussion

The prevalence of obese grade I and grade II were almost same between 13—60 year groups. However, an obvious decline of obesity (grade I) was evident among elderly (>60 years), with an absence of grade II obesity. The prevalence of obese grade I was higher in females except in 60+ years. It was important to document a 10 fold increase in prevalence of abdominal obesity in females in 19—40 years and four fold in 41—60 year group (Table 1).

About 18.48% of normal subjects were abdominal obese followed by undernourished (5.31%), obese grade I (4.85%) and grade II (1.46%) category. Prevalence of abdominal obesity decreased with the increase in age among indernourished, normal and

Table 1. Prevalence of obesity by different criteria. N=1101. Figures in parentheses indicate percentage.

	Age groups (years)								
	19—40			41—60			60+		
Criteria	Male	Female	Gender combined	Male	Female	Gender Combined	Male	Female	Gender combined
Body Mass Index									
Obese grade I	25 (2.29)	21 (1.92)	46 (4.21)	26 (2.38)	18 (1.65)	44 (4.02)	5 (0.46)	6 (0.55)	11 (1.01)
Obese grade II	2 (0.18)	9 (0.82)	11 (1.01)	5 (0.46)	7 (0.64)	12 (1.10)	–	–	–
Waist to Hip Ratio									
Abdominal obesity	18 (1.65)	189 (17.29)	207 (18.94)	17 (1.56)	76 (6.95)	93 (8.51)	12 (1.10)	17 (3.56)	29 (2.65)

Table 2. Percentage of adults with high WHR (abdominal adiposity) by grades of BMI according to age and gender. Ob-Obese, NOb-Non obese. Figures in parentheses indicate percentage. WHR : Waist to hip ratio. WHR >0.95 in males and >0.80 in females obese.

		Percentage of subjects with high WHR											
	Grades	19—40 years				41—60 years				60+ years			
	of	Male		Female		Male		Female		Male		Female	
Details	BMI	Ob	NOb	Ob	NOb	Ob	NOb	Ob	NOb	Ob	NOb	Ob	NOb
Undernourished	<18.5	–	56 (5.12)	39 (3.57)	77 (7.04)	–	19 (1.74)	13 (1.19)	18 (1.65)	2 (0.18)	6 (0.55)	4 (0.27)	3 (0.27)
Normal	18.5-25.0	9 (0.82)	245 (22.42)	129 (11.80)	137 (12.53)	8 (0.73)	87 (7.96)	40 (3.66)	35 (3.20)	8 (0.73)	21 (1.92)	8 (0.73)	5 (0.46)
Obese grade I	25.0-30.0	7 (0.64)	18 (1.65)	13 (1.19)	8 (0.73)	9 (0.82)	17 (1.56)	17 (1.56)	1 (0.09)	2 (0.18)	3 (0.27)	5 (0.46)	1 (0.09)
Obese grade II	>30.0	2 (0.18)	–	8 (0.73)	1 (0.09)	–	5 (0.46)	6 (0.09)	1	–	–	–	–
Total		18 (1.19)	319 (29.18)	189 (17.29)	223 (20.20)	17 (1.56)	128 (11.71)	76 (6.95)	55 (5.03)	12 (1.10)	30 (2.74)	17 (1.56)	9 (0.82)

obese grade II sublects. This trend was not evident in obese grade (category (Table 2).

A clear gender demarcation was evident, females registering a higher prevalence compared to their gender counterparts for all the BMI categories and in all the age groups except in 60+ year normal subjects. Per cen prevalence of abdominal obesity was almost same in 60+ year normal subjects of both the genders (0.73%).

Percentage of subjects belonging to obese grade I were almost equal in 19—40 and 41—60 year group. This age specific prevalence during the formative years might be attributed to the stabilized life of the age group.

Rural population is involved in moferate physical activity viz., agricultural chores. But today even the agriculture is mechanized. Hence, the alarming prevalence of 4% in rural area needs intervention.

Higher prevalence of abdominal obesity compared to general obesity might be because of syndrome X, which can be explained by starvation gene theory (3). It is related to the starvation gene factor in Indians caused by prolonged drought over the years. So Indian genes had adapted to survive long periods of drought by consuming fats and carbohydrates slowly to make them last longer. Now though our bodies get adequate supplies of food, these genes are still in action as they take long time to adapt. So food consumed continues to be metabilized slowly resulting in the dysfunctional biochemical profile that constitutes syndrome X.

Conclusion

The prevalence of abdominal obesity was higher compared to general obesity. Abdominal obesity does not always go hand in hand with general obesity. Abdominal obesity could be also present in the absence of general overweight or obesity. Abdominal obesity would thus appear to be different with respect to its pathogenesis and possible implications.

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