



A Cross – Sectional Study on Obesity Among Adult Women (>18Years) in A Semi – Urban Area in Chennai

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ABSTRACT

Aim: the objective of this study was to estimate the prevalence of obesity among semi-urban adult women and to identify the association between obesity and certain suspected risk factors

Methodology: An analytical cross-sectional study was conducted on 300 semi-urban adult women chosen by simple random sampling in Parivakkam area. After the completion of a questionnaire on age, diet, literacy and socio-economic status and other background variables, the weight and height of the individuals was measured. Data entry was done in SPSS and p values were based on chi-square values

Results: the prevalence of obesity was found to be 56.3% with a 95 % C.I of 50.51 – 61.99. Obesity was 2.29, 1.89 and 1.96 times more commonly seen among employed women, women currently living with spouse and women from upper socio-economic status (BG Prasad class 1, 2 and 3) respectively and these associations were statistically significant with p values of 0.038, 0.029, 0.02 respectively

KEYWORDS : obesity, B.M.I, adult, diet

INTRODUCTION

Obesity and overweight are creating a global epidemic. They are the risk factors for many non-communicable diseases. Rapidly changing diets and lifestyles are fueling the global obesity epidemic. Once being considered as a problem related to affluence, obesity is now growing fast in many developing countries¹. Internationally, a BMI, over 25 kg/m² is considered overweight. Due to genetic tendency of Indians towards abdominal obesity and its associated risk of related lifestyle diseases like Diabetes & Heart disease, Ministry of Health & Family Welfare along with the Indian Council of Medical Research released updated guidelines (in 2012) that a BMI over 23 kg/m² is considered overweight and 25 kg/m² as being obese². In women who have obesity there are more thyroid cancers, leukemias, multiple myeloma, and pancreatic cancers, 6% of those who are obese have trouble conceiving. When a pregnancy occurs, the chance of a serious event requiring hospitalization is 4-7 times greater for a woman with obesity compared to a woman who is lean. Children born to mothers who have obesity are more likely to be large. Large birth weight increases the risk of infants developing diabetes in later life³. The main purpose of this study was to estimate the prevalence of obesity among semi-urban adult women and to identify the factors associated with it.

STUDY METHODOLOGY

Study design

The study was done as a cross-sectional study with both descriptive and analytical components. The descriptive component was used to find the prevalence of obesity among the adult women in the semi-urban population. The analytical component was used to find the association between obesity and certain suspected risk factors.

Study setting and subjects

The study was conducted in a semi-urban population in Parivakkam area, a field practice area of ACS Medical College and Hospital. The data was collected over a period of one month from 2nd January to 3rd February 2015.

Selection and distribution of participants

Adult women aged above 18 years were included in the study. Only women who signed the informed consent form were included in the study. Pregnant women and physically handicapped women were excluded from the study. Families were chosen by simple random sampling and only one woman was chosen from each of the selected families.

Sample size and follow –up

Based on past literature the prevalence of obesity in women was estimated to be 38%⁴. With type 1 error of 5% and with limit of accuracy kept at 15% of the prevalence which amounts to 5.7, the minimum sample size required for the study was found to be 279 and hence it was decided to study 300 women.

Ethical Considerations

Since it was a questionnaire based study with measurement of height and weight, there were no ethical considerations. However an institutional ethics committee approval was obtained from ACS Medical College and Hospital for the conduction of the study.

Data Collection

The medico social workers took permission from the concerned authorities for conduction of the study. The interview schedule starts with the questions of the background information of the respondent like age, diet, marital status, type of house to a series of questions on family. The questionnaire was prepared in an easy way to ensure understandability of the study subjects. Translation to their regional language (Tamil) was also done.

Definition and classification of main study variables

Obesity: Any subject with a B.M.I of more than 25 was taken as obese and any subject with a B.M.I of more than 23 was classified as overweight^{2,4}.

Socio-economic classification: based on their per capita income,

subjects were classified into five classes as per modified BG Prasad classification²⁰¹³⁵.

Type of houses: Houses were classified as kutcha, pucca or semi – pucca based on literature⁶.

Educational status:The subjects were divided into five groups based on their educational status as illiterates, primary school completers, secondary school completers, graduates/diploma holders and post graduates/professionals⁷.

Data Analysis

The data entry and analysis were done using statistical package for social sciences (SPSS) version 16. The final data was summarized into percentages and analyzed by cross tabulations for various variables. Chi-square values were calculated wherever appropriate and p values were based on the 2 –tailed values. Associations were assessed through odds ratio and 95% confidence interval (95% C.I) of the odds ratio which was found using EPI Info version 7.1.1.

Results

A population based cross – sectional study was done in Parivakkam village to estimate the prevalence of obesity among 300 adult women and the following observations were made.

Socio- demographic profile of the study subjects

Most of the study population were following Hinduism (91.3%). There were more people in the 18 – 40 (59%) age group when compared to the above 40 age group. There were more women with primary school education and illiteracy in the study population when compared to higher educations and the details can be seen in table 1.

Overall prevalence of obesity

The prevalence of obesity among adult women > 18 years in Parivakkam was found to be 56.3% and the 95 % C.I of the prevalence ranged between 50.48% and 61.72%. Details can be found in table 2.

Association between obesity and certain suspected risk factors

Obesity was 2.29 times more commonly seen among employed women when compared to unemployed women and this association was also found to be statistically significant (P value = 0.038*). Obesity was 1.89 times more commonly seen among women currently living with spouse when compared to single, widowed and separated/divorced women and this association was also found to be statistically significant (P value = 0.029*). Obesity was more among the higher classes of modified BG Prasad classification 2013 when compared to the lower classes (fig 1). Obesity was 1.96 times more commonly seen among modified BG Prasad classification 2013 classes 1,2,3 women when compared to BG Prasad classes 4, 5 women and this association was also found to be statistically significant (P value = 0.02*). Details can be seen in Table 3. Obesity was 1.11 times more commonly seen among women consuming mixed diet when compared to women who were vegetarians, Obesity was 1.46 times more commonly seen among women in the above 40 age group when compared to women who were in the 18 – 40 & Obesity was 1.48 times more commonly seen among literates when compared to women who were illiterates however these associations were not statistically significant. Details can be seen in Table 3

Discussion

The prevalence of obesity was found to be unusually high in the present study (56.3%) but the results were slightly lower than those of a study done on the streets of a five city study group, though the study had a lower prevalence of obesity it concluded that the overall prevalence of B.M.I >23 was 50.8%⁸(which was taken as the definition of overweight in the current study). Many of the other studies showed a lower prevalence of obesity when compared to the current study, which could be because the guidelines for defining obesity have been revised recently broadening the definition of obesity and not many studies are available with the revised guidelines . Obesity was more prevalent among higher socio-economic status individuals when compared to the lower socio-economic groups and this association was statistically significant (P value = 0.02*) and this was similar to the results of a study done in a urban slum of Chennai which showed a statistically significant association between socio-economic

status and obesity¹, this could also explain the statistically significant association between being employed and obesity. Obesity was 1.89 times more common among women currently living with spouse when compared to those who were not and this association was statistically significant (P value = 0.029*) and this was comparable to the results of a nationwide survey conducted in Iran⁹ that concluded that obesity was twofold higher among married women when compared to single women. At the end of the study health education on healthy life-styles and necessary life-style modifications were given to all the participants.

The unusually high prevalence of obesity in the current study area, emphasizes on the need for prioritizing it over the other health issues. Obesity is one of the most important modifiable risk factor for many non – communicable diseases and can lead to a lot of morbidity on its own as well. Health awareness camps should be conducted in the under-served regions to emphasize on the importance of weight reduction for health reasons, more than for cosmetic reasons (usual assumption) and also to teach self – monitoring of weight.

TABLE 1: Socio Demographic Profile of the study subjects

Variable	Number out of 300	Percentage
Age		
18-40	177	59 %
>40	123	41%
Religion		
Hindu	274	91.3%
Christian	26	8.7%
Education Status		
Illiterate	87	29%
Primary School	147	49%
Secondary School	34	11.3%
Grad/Diploma	27	9%
Post. G/Prof.	5	1.7%

TABLE 2: PREVALENCE OF OBESITY IN ADULT WOMEN OF SEMI-URBAN CHENNAI

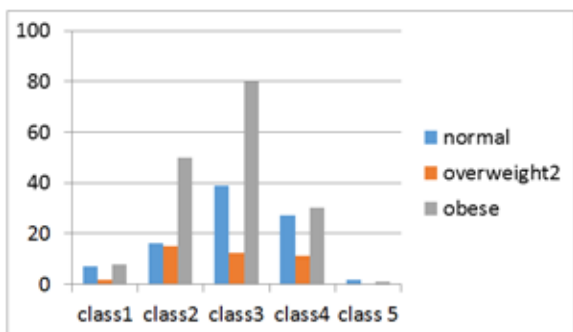
Respondents	Frequency (out of 300)	Percentage (%)	95% CI
Yes	169	56.3	50.48– 61.72
No	131	43.7	

TABLE 3: Association between obesity and certain suspected risk factors

VARIABLE	Classification of variable	Number of Respondents with obesity out of the total number in that group	Odds Ratio (95%CI)	Chi square value	P value
Employment	Yes	156(out of 266)	2.29 (1.10-1.89)	4.31	0.038 *
	No	13(out of 34)			
Marital status	Living with spouse	138(out of 230)	1.89 (1.1-3.24)	4.77	0.029*
	Not living with spouse	31(out of 70)			
BG Prasad	(class 1,2,3)	138(out of 229)	1.96 (1.14-3.35)	5.42	0.02*
	(class 4,5)	31(out of 71)			

Diet	Non-veg	162(out of 287)	1.11 (0.36-3.39)	0.01	0.92
	Veg	7(out of 13)			
Age	> 40	76(out of 123)	1.46 (0.91-2.33)	2.16	0.14
	18 - 40	93(out of 177)			
Type of House	Pucca	95(out of 166)	1.08 (0.69-1.72)	0.05	0.82
	Semi pucca& Kutcha	74(out of 134)			
Education Status	Literate	126(out of 213)	1.48 (0.90-2.45)	2.00	0.16
	Illiterate	43(out of 87)			

Fig :1 Distribution of B.M.I with respect to B.G prasad S.E classification



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