

Prevalence of hypertension and obesity among urban working women



Home Science

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ABSTRACT

WHO termed obesity as "New world syndrome" and hypertension as "Silent killer" by observing its consequences and it's increasing prevalence for the past few decades. This study was under taken to observe the prevalence of obesity and hypertension among urban working women in southern India by enrolling 120 working women in an educational institution, located at the centre of the city. Well structured questionnaire was developed and distributed to all the women to elicit their socio economic details, life style pattern and food habits. Their weight, height and blood pressure were recorded. Among the selected women obesity was prevalent among 80.2 per cent and the prevalence of hypertension was observed to be 48 per cent. The blood pressure was noticed to increase with increase in body weight of the individuals. The results stress the need of timely preventive measures for these new endemic disorders to reduce the burden of many chronic morbidity.

Coronary artery disease occurs almost a decade earlier in South Asians as compared to western counterparts. Coronary artery disease and diabetes are preceded by constellation of risk factors which include abdominal obesity, hypertension, dyslipidaemia, prediabetes and sedentary lifestyle as shown in various epidemiological and observational studies. For the past few decades, the prevalence of obesity and hypertension is increasing rapidly due to life style transition. (Walia et al., 2014).

Various studies revealed that it is more prevalent in urban areas when compared to rural areas and females are more prone to these risk factors than males. obesity can be seen as the first wave of a defined cluster of non communicable diseases called "New World Syndrome," creating an enormous socioeconomic and public health burden in poorer countries (Pednekar et al., 2008)

The problem is more acute among the non-poor than the poor in urban India. Hypertension is directly associated with risks of several types of cardiovascular diseases and according to WHO (2005), it was increased by 30 times among urban community people (Gouda & Prusty., 2014)

Urbanization and the adaptation of the westernized lifestyle is one of the reasons for a rapid epidemiological transition. Thus, the growing demand which now appears before the health sector is to address this rising urban epidemic and hence this study was undertaken with the objective to study the prevalence of obesity and hypertension in urban working women who are more likely to susceptible to these epidemic transitions.

Methodology

120 women working in an educational institution located at the centre of city, those who were interested in participating in the study were selected for this study. Well structured questionnaire was developed with three parts to elicit the information on socio economic details, lifestyle pattern and food habits and distributed to selected women.

Body weight was measured using a portable weighing balance. The scale was zeroed before weighing and light clothing was allowed to be worn. The height was measured for all the participants using a portable stadiometer. Using Weight and height BMI was calculated to all the participants.

The blood pressure of all the women was measured using Standard sphygmomanometer with the help of a medical practitioner. The blood pressure was measured in both the arms. An average

of three readings taken with the time gap of 2-3mts was recorded as the individual's blood pressure. The arm with the higher pressure was used to make the three measurements.

Results and Discussions

The results and discussions of the study are given below.

The socio economic status of the selected urban working women is given in Table-I

Table -I
Socio economic status of the selected urban working women

S No.	Particulars	Number	Per cent
1	Age		
	20yrs – 29 yrs	11	9
	30yrs – 39 yrs	31	26
	40yrs – 49 yrs	27	22
	50yrs – 59 yrs	37	31
2	Marital status		
	Married	107	89
	Unmarried	13	11
3	Educational qualification		
	Doctorate	26	22
	Post graduation	62	52
	Graduation	22	18
4	Higher secondary	10	8
	Occupation		
	Teaching	56	47
	Lab assistance	30	25
	Clerical	21	17
	Office assistance	13	11

Income level			
5	Rs.2500 – Rs.4500 (Low income)	5	4
	Rs.4501 – Rs.7500 (Middle income)	27	23
	Rs.7501 and above (High income)	88	73

The Table-I clearly says that majority of the respondents were above 30 years of age and only 9 per cent were found to be between 20yrs – 29yrs and most of them (89 per cent) of them were married. Greatest per cent (31 per cent) of subjects were found to be in the age group of 50yrs – 59yrs, followed by 30yrs – 39yrs (26 per cent), 40yrs – 49yrs (22 per cent) and 60yrs – 69 yrs (12 per cent). Maximum per cent (52 per cent) of them were Post Graduates followed by Doctorate (22 per cent) and graduates (18 per cent).

When we observe the occupational status and income level, it was noted that all were engaged in sedentary work and belonged to high income group. Among them, most of them (47 per cent) were college/school teachers, 25 per cent were lab assistance, 17 per cent were in clerical jobs and 11 per cent of them were office assistants.

According to HUDCO classification (2004) on income, more than three fourth of the women belonged to high income group (73 per cent) succeeded by middle income (23 per cent) and low income group (4 per cent).

From the Table-I, it was noted that the entire part of the respondents were involved in sedentary work irrespective of their age and educational qualification and most of them belonged to high income group.

Figure I illustrates the prevalence of hypertension among the urban working women.

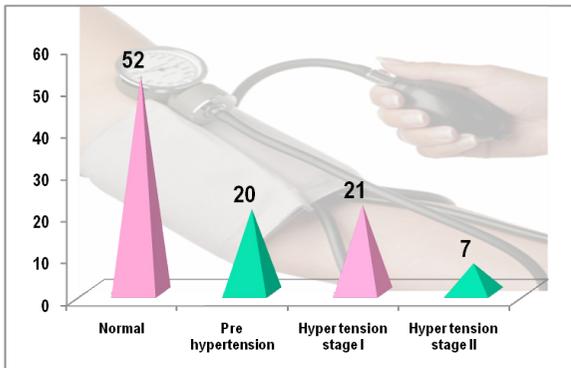


Figure I
Prevalence of hypertension among the urban working women

The figure-I illustrates that prevalence of hypertension was observed to be 48 per cent among the urban working women. About 52 per cent were recorded as normotensives. It coincides with the results given by Gupta,P,C, et al.,(2004) which stated 47.5 per cent prevalence rate among the women belonged to urban areas of Mumbai. The result of present study is slightly high when compared to the results given by Jaipur Heart Watch study (2009) which observed 38.2 per cent prevalence of hypertension among urban areas of Rajasthan (Guptal.,et al.,2009)

The study results in par with the statement given by Mohan et al's CURES Cohort study that is every fifth individual is a hypertensive in Chennai which parallels or even outstrips diabetes (Joshi et al., 2007)

Based on JNC-7 and WHO classification, the hypertensives were classified as Pre hypertensive (20 per cent) those who recorded SBP 120 -139 mmHg / DBP 80-89 mmHg, stage-I hypertensive (21 per cent) whose Blood pressure was recorded as SBP 140-159 mmHg / DBP 90-99 mm Hg and stage -II hypertensive (7 per cent) those who recorded SBP >160 mm Hg/DBP >100 mm Hg.

Gupta et al., (2004) stated that in urban population who are being exposed to stress of acculturation and modernization, the hypertension prevalence rates have more than doubled in the last few years and are now similar to the developed countries. The present study results were also agreed with the above statement.

Figure -II illustrates the prevalence of obesity among urban working women.

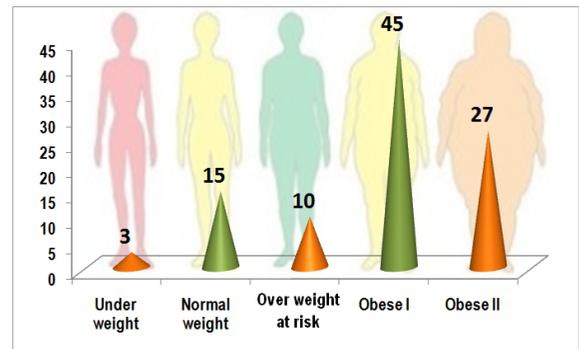


Figure-II
Prevalence of obesity among urban working women

Gouda & Prusty., (2014) states that significant positive correlation has been observed between better economic status and composition of diet consumed. People from economically better families are more likely to adopt sedentary lifestyle and intake energy dense food. In addition reduced physical activity at work due to mechanization, motorized transport and preferences of viewing television for longer duration have resulted in positive energy balance in people of most of the Asian countries.

Figure -II agrees the above statement and states that prevalence of obesity was more common among the selected women and it was found to be 82 per cent. As quoted by Gupta et al., (2011), a study from south India showed that the prevalence of overweight was 35.4 per cent among the females and various other studies by urban Asian Indian population in Chennai (2009) the prevalence of generalized obesity based on BMI was found to be 47.4 per cent in females. In another study by Hafian-Tilaki ko & Heidari., (2007), the prevalence of obesity and overweight based on BMI was 34.8 in female.

The results of the present study was more than the above study results and nearer to the results observed in a study carried out in Salem town, Tamil Nadu which stated 70.2 per cent obesity prevalence among the selected females. (Gupta et al., 2011)

Based on Asian Classification of BMI for adults given by WHO (2000), the nutritional status of the women were classified as overweight at risk whose BMI is 23 -24.9 (10 per cent), obese -I whose BMI is 25 – 29.9 (45 per cent) and obese-II >30(27 per cent). Only 15 per cent were observed to have normal weight. Gouda, et al., (2014) found that in India more than one sixth of women in urban area are overweight and around 6 per cent of women are obese. In a nutshell, rising income due to socio-economic participation in employment and improving socio-economic status helps women to opt for sedentary lifestyle which is considered to cause weight gain.

Table-II illustrates the age wise prevalence of obesity among the urban working women

**Table -II
Age wise prevalence of obesity among the urban working women**

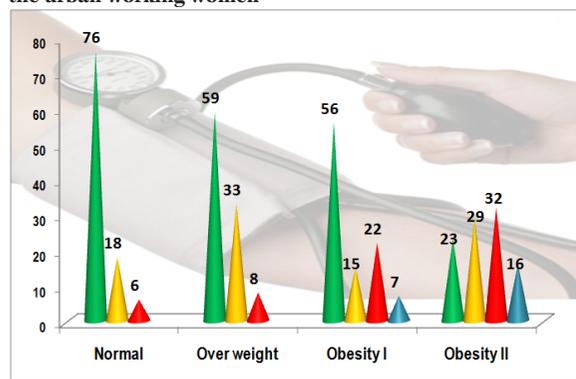
Age Yrs	Number	Under weight		Normal		Over weight At risk		Obese I		Obese II	
		No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent	No.	Per cent
20 - 29	11	1	9	7	64	1	9	2	18	-	-
30 -39	31	1	3	8	26	3	10	14	45	5	16
40 - 49	27	-	-	2	7	4	15	15	56	6	22
50 - 59	37	2	5	1	3	2	5	17	46	15	41
60 - 69	14	-	-	-	-	2	14	6	43	6	43

Table -II obviously predicts that prevalence of obesity increases with age and maximum prevalence is observed in the age group of 40yrs -49 yrs. Maximum per cent (64 per cent) of 20-29 yrs were found to have normal weight and no one in 40yrs-49 yrs and 60yrs-69 yrs were recorded to have normal weight among the selected subjects. Obese I was very common (56 per cent) in the age group of 40-49 yrs and obese II was found to be more (43 per cent) between 60-69 yrs.

Gouda et al.,(2014) states that comparing women of different age groups across the economic strata of households, its observed that women at later age (35+ years) are more overweight or obese than the reference group in 15-24 years. The prevalence of overweight or obesity increases analogously with each additional age of women yet, the increase is much higher for non-poor women.

Moreover women from southern part irrespective of economic background, have higher prevalence of overweight and obesity than women from any other regions in India.

Figure III gives the body weight and blood pressure among the urban working women



**Figure III
Body weight and blood pressure among the urban working women**

Various studies show that there is strong correlation of obesity with increasing prevalence of hypertension and it indirectly reflects the importance of diet and physical activity among the population (Gupta., 2009)The figure clearly illustrates that prevalence hypertension increases with the increase in BMI. Prevalence of pre hypertension was greater (33 per cent) among the

overweight women followed by obesity II (29 per cent) and normal weight women (18per cent).

This result is in par with the study in affluent women in North India which showed subjects with either pre-hypertension or hypertension had increased body mass index compared to those with normal blood pressure. It also stated that as compared to normotensive women, being overweight / obese increased odds of hypertension and pre-hypertension (Yadav et al.,2008)

Prevalence of stage I hypertension (32 per cent) and stage II hypertension (16 per cent) was seen more among the obesity II women followed by obesity I (stage I hypertension-22 per cent). Stage I hypertension was only 6% in normal weight women and there was no record of stage II hypertension among them. Greatest percentages (76 per cent) of normotensives were having normal weight and it was observed to decrease as the body weight increases.

The results clearly depict the correlation between body weight and blood pressure levels and it was similar to various studies conducted in different parts of India.

Conclusions

This study found the prevalence of obesity and hypertension was more among the urban working women, certainly due to their change in food habits and lifestyle pattern. Obesity and hypertension epidemic substantially reduce the quality of life and accounts for heavy expenditure in provision of health care. A timely approach to prevent these non communicable health hazards will help to reduce much chronic co-morbidity.

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