A study of the prevalence of obesity and hypertension in the field practice area of a UHTC of tertiary health care center

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Abstract
Background: India today facing the dual burden of the diseases caused by poverty as well as the diseases caused by affluence Urbanization and the adaptation of the westernized life style is one of the reasons **Aims and Objectives:** To Study the Prevalence of Obesity and Hypertension in the field practice area of a UHTC of tertiary health care center. **Methodology:** This was a cross-sectional study carried out at the UHTC expected to serve approximately 10,000 population, attached to the department of community Medicine during the one year period i.e. March 2017 to March 2018 by house to house survey in this survey we used Broca's Index for the screening of the persons with more than expected weights so during one year period there were 1378 such adult persons were identified Data was arranged in the tabular form. Analysis of Data done by Chi square test and analyzed by SPSS 19 version of software **Result:** The majority of the patients were Females i.e. 52.97% and Males were 47.03%. The majority of the patients As per BMI classification were 25.0-29.9 (Overweight) i.e. 59.58%, followed by ≥30 (Obese) were 28.66%, 18.5-24.9 (Healthy weight) were 10.89%, ≥40 Class 3 obese were 0.87%., No Underweight patient was found. The overall prevalence of Hypertension was 10.09%, As the BMI of the patients increases the prevalence of Hypertension also increases i.e. 3.64%, 7.38%, 17.21%, 75.00% this trend was statistically significant ($\chi2 = 93.57$, df=4, p<0.0001). The majority of the Males had higher prevalence of Hypertension i.e. 14.97% as compared to Females i.e. 5.75% and this difference was statistically significant ($\chi2 =32.15$,df=1,p<0.0001). **Conclusion:** It can be concluded from our study that as BMI increases the prevalence of Hypertension also increases in both males and females overall Obesity was more prevalent in females but the hypertension was more prevalent in Males
Key Word: Hypertension, Obesity, BMI, CVDs.

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INTRODUCTION

India today facing the dual burden of the diseases caused by poverty as well as the diseases caused by affluence Urbanization and the adaptation of the westernized life style is one of the reasons[1] for a rapid epidemiological transition. There is an increase in women's employment due to economic pressure. The gainful employment of women which ensures an increase in the income, may lead to better nutrition for themselves[2,3]. Improved health facilities, increase in the income, availability of food and decrease in physical activity have contributed to this epidemic form of overweight and obesity, especially in the urban areas of the developed and the developing countries[4]. With the rapid urbanization in recent years, there has been a boom in the consumption of fast foods in India which are the causes of obesity[5]. The first adverse effects of obesity to emerge in the population in transition are hypertension hyperlipidaemia and glucose intolerance, while coronary heart diseases and the long

term complications of diabetes, such as renal failure, begin to emerge several years later[6]. So owing to this problem we have studied the adult population of the Urban area.

METHODOLOGY

This was a cross-sectional study carried out at the UHTC expected to serve approximately 10,000 population , attached to the department of community Medicine during the one year period i.e. March 2017 to March 2018 by house to house survey in this survey we used Broca's Index for the screening of the persons with more than expected weights so during one year period there were 1378 such adult persons were identified , all information like age, sex, measurement like Height , weight, Blood Pressure with standard Operating procedures as suggested by WHO was done by Team of Community Medicine by house to house survey of the population under UHTC. For the classification of Obesity BMI [7] index was used and for Measuring the BP, Mercury Sphygmomanometer, Data is arranged in the tabular form. Analysis of Data done by Chi square test and analyzed by SPSS 19 version of software

RESULT

Table 1: Distribution of the patients as per the age

Age	No.	Percentage (%)
20-30	117	8.49
30-40	246	17.85
40-50	269	19.52
50-60	373	27.07
60-70	245	17.78
>70	128	9.29
Total	**1378**	**100.00**

The majority of the patients were in the age group of 50-60 were 27.07% followed by 40-50 were 19.52%; 30-40 were 17.85%, 60-70 were 17.78%, >70 were 9.29% and 20-30 were 8.49%.

Table 2: Distribution of the patients as per the Sex

Sex	No.	Percentage (%)
Female	730	52.97
Male	648	47.03
Total	1378	100.00

The majority of the patients were Females i.e. 52.97% and Males were 47.03%.

Table 3: Distribution of the patients as per the BMI

BMI	No.	Percentage (%)
<18.5 (Underweight)	0	0.00
18.5-24.9 (Healthy weight)	150	10.89
25.0-29.9 (Overweight)	821	59.58
≥30 Obese	395	28.66
≥40 Class 3 obese	12	0.87
Total	1378	100.00

The majority of the patients As per BMI classification were 25.0-29.9 (Overweight) i.e. 59.58%, followed by ≥30 (Obese) were 28.66%, 18.5-24.9 (Healthy weight) were 10.89%, ≥40 Class 3 obese were 0.87%. , 18.5-24.9 (Healthy weight) were 10.89%; No Underweight patient was found.

Table 4: Distribution of the patients as per the Blood pressure and BMI

BMI	Hypertensive	Normotensive	Total
<18.5 (Underweight)	0 (0)	0 (0)	0 (100)
18.5-24.9 (Healthy weight)	5 (3.64)	137 (91.33)	150 (100)
25.0-29.9 (Overweight)	57 (7.38)	772 (94.03)	821 (100)
≥30 Obese	68 (17.21)	327 (82.78)	395 (100)
≥40 Class 3 obese	9 (75.00)	3 (25.00)	12 (100)
Total	139 (10.09)	1239 (89.91)	1378 (100)

(χ^2 = 93.57, df=4, p<0.0001)

The overall prevalence of Hypertension was 10.09%, As the BMI of the patients increases the prevalence of Hypertension also increases i.e. 3.64%, 7.38%, 17.21%, 75.00% this trend was statistically significant (χ^2 = 93.57, df=4, p<0.0001).

Table 5: Distribution of the patients as per the sex and Hypertension

Sex	Hypertensive	Normotensive	Total
Female	42 (5.75)	688 (94.25)	730 (100)
Male	97 (14.97)	551 (85.03)	648 (100)
Total	139 (10.09)	1239 (89.91)	1378 (100)

(χ^2 =32.15, df=1, p<0.0001)

The majority of the Males had higher prevalence of Hypertension i.e. 14.97% as compared to Females i.e. 5.75% and this difference was statistically significant (χ^2 =32.15, df=1, p<0.0001).

DISCUSSION

Obesity represents a rapidly growing threat to the health of populations in an increasing number of countries. Indeed, they are now so common that they are replacing more traditional problems such as under nutrition and infectious diseases as the most significant causes of ill health. Between 1980 and 2008, the mean global body mass index (BMI) increased by 0.4–0.5 kg/m2 per decade in men and women.[8] Obesity is associated with the incidence of multiple comorbidities including type II diabetes, cancer and cardiovascular diseases.[9] The worldwide prevalence has more than doubled since 1980. A number of studies have reported that with each surge in weight, there is an increase in the risks for coronary heart disease, type 2 diabetes, cancers (endometrial, breast and colon), hypertension, dyslipidaemia, stroke, sleep apnoea, respiratory problems, osteoarthritis and gynaecological problems.[10] The trend in the rising prevalence of obesity and related morbidity and mortality in developing

countries has been attributed to rapid urbanisation, nutrition transition and reduced physical activity.[11] In our study we have seen that The majority of the patients were in the age group of 50-60 were 27.07% followed by 40-50 were 19.52% ; 30-40 were 17.85%,60-70 were 17.78%, >70 were 9.29% and 20-30 were 8.49%. We have measure BMI for the measuring the Obesity as BMI appears to be strongly correlated with various adverse health outcomes consistent with these more direct measures of body fatness[12,13,14,15] The majority of the patients were Females i.e. 52.97% and Males were 47.03%. The prevalence of of Obesity more in females can be explained by the fact because less activity and sedentary work is more in females and underlined hormonal differences as compared to males may be attributed. The majority of the patients As per BMI classification were 25.0-29.9 (Overweight) i.e. 59.58%, followed by ≥30 (Obese) were 28.66%, 18.5-24.9 (Healthy weight) were 10.89%, ≥40 Class 3 obese were 0.87%. , No Underweight patient was found. The overall prevalence of Hypertension was 10.09%, As the BMI of the patients increases the prevalence of Hypertension also increases i.e. 3.64%, 7.38%, 17.21%, 75.00% this trend was statistically significant (χ^2 = 93.57, df=4, p<0.0001). The majority of the Males had higher prevalence of Hypertension i.e. 14.97% as compared to Females i.e. 5.75% and this difference was statistically significant (χ^2 =32.15,df=1,p<0.0001). Though the females were having more prevalence of Obesity but the prevalence of hypertension was more in the males this may explained due to possible role of testosterone hormone , associated addictions like alcohol, tobacco , smoking and more stress working environment may be responsible for this difference in prevalence of hypertension. Our findings are similar to Manmohan Gupta[16] they found The age range was 18 to 85 years; the majority (79.8%) was above 35 years of age. The waist circumference (WC) was positively correlated with the body mass index (BMI) and the systolic blood pressure. Females had a significantly higher BMI value than the males. Based on the internationally recommended BMI cut-off points, 44.9% respondents were found to be pre-obese and 19.0% were obese. The estimated risk for the females to have an increased metabolic risk was 9.4 times that of the males. 60.8% persons had abdominal fat accumulation, based on the waist to hip ratio. 43.3% persons were hypertensive. A significantly higher proportion of males were severely hypertensive than the females.

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