

Prevalence of Hypertension and Obesity among Women Residing in Selected Community Area Punjab

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ABSTRACT

Hypertension is a common disease associated with high morbidity and mortality. The disease is a silent threat to the health of people all over the world. Thus, early detection of hypertension and its precipitating or aggravating factors are important if one is to evolve measures so that complications of hypertension can be prevented. On the other hand obesity is a major health problem that affecting women mostly. Obesity has become one of our nation's leading epidemics. According to the Centre for Disease Control (CDC) obesity has almost tripled over the past 30 years.

Obesity is strongly associated with hypertension and cardiovascular disease. Obesity is also associated with endothelial dysfunction and renal functional abnormalities that may play a role in the development of hypertension. The continuing discovery of mechanisms regulating appetite and metabolism is likely to lead to new therapies for obesity-induced hypertension.

Methodology: A non-experimental approach with simple random sampling technique was used in the study. The data was collected through body mass index scoring sheet, assessment sheet for hypertension and health assessment Performa. The final study was also conducted on 200 women in selected area of Punjab. Descriptive and inferential statistics were employed to analyze the data.

Result: The results showed that out of 200 subjects 42.5% were overweight. 30.5% subjects comes under pre hypertension, 16% subject comes under stage- I hypertension while only 3% subjects comes under stage –II hypertension category.

The findings revealed that there was a significant association between hypertension with demographic variable like age, education, duration of hypertension, type of family and life style and not any significant association between hypertension and demographic variables such as occupation, religion, marital status, family history of hypertension, family history of obesity, income (monthly) and dietary pattern.

There was a significant association between obesity with demographic variable like marital status, duration of hypertension and life style and not any significant association between obesity and demographic variables such as Age, education, occupation, religion, family history of hypertension, family history of obesity, income (monthly), type of family and dietary pattern.

Keywords: *Prevalence, Hypertension, Obesity.*

Introduction

Obesity and hypertension have become public health issues with rising prevalence globally, associated with increased morbidity and mortality from cardiovascular diseases as well as increased socioeconomic costs. The growing prevalence of obesity is increasingly recognized as one of the most important risk factors for the development of hypertension. This epidemic of obesity and obesity related hypertension is paralleled

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by an alarming increase in the incidence of diabetes mellitus and chronic kidney disease.¹ Obesity and weight gain have been reported to be the most significant determinants of hypertension. Obese patients are more prone to hypertension and hypertensive patients also appear prone to weight gain.²

In the Framingham study, a 10% rise in body weight is associated with a 7mmHg rise in systolic blood pressure.³ The National Health and Nutrition Examination survey reported linear association between increase in Body Mass Index (BMI) and systolic, diastolic and pulse pressure in the American population. It is reported that an increase of BMI of 1.75 kg/m² in men and 1.25 kg/m² in women will cause 1 mm Hg rise in systolic blood pressure.⁴

The use of simple anthropometric measures as health outcome indicators, suitable for population screening. These include body mass index (BMI), waist circumference (WC) and waist hip ratio (WHR). These measurements have been shown to be related to cardiovascular risk factors or mortality.⁵

Body mass index (BMI) and waist circumference (WC) have been used as simple anthropometric indices for assessing the amount and distribution of body fat.^{6,7} and are useful indices in predicting the risks of type 2 diabetes, hypertension, and cardio vascular diseases.^{8,9} Similarly, obesity represents a serious health concern that needs to be addressed to improve the health and wellbeing of the present and the future population.¹⁰

Material and Method

A Quantitative research approach was adopted for the study. A descriptive research design was utilized to achieve the objectives of the study. The study was conducted in selected residential area of Punjab. Researcher's familiarity with setting and availability of required sample were also considered while selecting the study group. The target population is all the women >35 years of age residing in selected areas of Punjab. In the present study the 200 women >35 years of age selected in the Dhianpura village and they were selected by using simple random sampling technique. The data was collected through body mass index scoring sheet, assessment sheet for hypertension and health assessment Performa.

Content validity of the tool was made and necessary modifications were made according to the expert's

opinion and tool was finalized. Ethical approval to conduct the study was taken from college. Written informed consent was obtained from the study subjects regarding their willingness to participate in the research project. Demographic variables were collected by using interview technique and privacy is provided. For this study descriptive research design, demographic variable, body mass index scoring sheet, assessment sheet for hypertension and health assessment performa was used. Data was collected from 200 women >35 years of age. After the data collection, pamphlet on prevention of the hypertension and obesity were provided to the women. According to objectives the data was organized, tabulated. Analysis was done by using descriptive and inferential statistics. Descriptive statistics was used for frequency, percentage and inferential statistics calculated by chi square.

Result

Table 1: Distribution of subjects as per their obesity based on their Body Mass Index

N = 200

Classification	Frequency	Percentage
Underweight	008	4.0
Normal Range	107	53.5
Overweight	085	42.5

Table 2 depicts that, majority of the subjects i.e. 107 (53.5%) were normal body mass index, while 85 (42.5%) subject were overweight and only 8 (4.0%) subjects were underweight. The highest percentage of subjects was come under the normal range.

Table 2: Distribution of subjects as per their blood pressure based on classification of hypertension

N = 200

Classification of Hypertension	Frequency	Percentage
Normal (<120/<80mmHg)	101	50.5%
PRE- Hypertension (120-130/80-89mmHg)	061	30.5%
Stage-I Hypertension (140-150/90-99mmHg)	032	16.0%
Stage-Ii Hypertension (≥160- ≥100)	006	3.0%

Table 3 depicts that majority of the subjects 101 (50.5%) were not hypertensive, 61 (30.5%) subject were comes under the pre- hypertension category while 32 (16.0%) subject were comes under the stage- I hypertension category, and only 6 (3.0%) subject were comes under the stage II hypertension category. The highest percentage of subject was comes under the normal range.

Table 3: Distribution of subjects on the basis of their health assessment profile

N = 200

Subject Assessment	Frequency	Percentage
Nutritional History		
<i>Habit of consuming pickle</i>		
Yes	187	93.5%
No	013	6.5%
<i>Habit of consuming chutney</i>		
Yes	163	81.5%
No	037	18.5%
<i>Amount of salt consuming in meal</i>		
Mild	001	0.5%
Moderate	189	94.5%
Heavy	010	5%

Conted...

<i>No. of glasses of water per day</i>		
2-4 glasses	042	21%
5-8 glasses	152	76%
>8 glasses	006	3%
<i>No. of cup of tea/coffee per day</i>		
<2 cup	003	1.5%
2-4 cups	175	87.5%
>4 cups	022	11%
Other Habits		
<i>Exercise</i>		
Regular	002	1%
Irregular	108	54%
No exercise	090	45

According to nutritional status of the subjects, most of subjects were having a habit of eating pickle i.e 187 (81.5%) and chutney i.e 163 (93.5%). It was also showed that most of subjects were taking the moderate amount of salt in meal per day i.e. 189 (94.5%) and also highest percentage of subject were drinking 5-8 glasses of water per day. Instead of this, the majority of subject i.e 175 (87.5%) were drinking 2-4 cup of tea/coffee per day and also highest percentage of subjects were doing irregular exercise i.e 108 (54%)

Table 4: Association between hypertension and selected socio demographic variables

N = 200

Sr. No.	Demographic Variable	n	Chi-square value	df and p value	Level of significance
1.	Age in years		28.038	df = 9 p.001*	Significant
	35-50yrs	091			
	51-66yrs	043			
	67-82yrs	053			
>82	013				
2.	Education		37.312	df =9 p.000*	Significant
	Illiterate	072			
	Primary Education	067			
	Secondary Education	045			
Graduate and above	016				
3.	Occupation		2.136	df = 3 p.545	NS
	Unemployed	198			
Employed	002				
4.	Religion		1.586	df = 3 p.663	NS
	Sikh	179			
Hindu	021				
5.	Marital Status		10.840	df = 3 p.013	NS
	Unmarried	035			
Married	165				

Conted...

6.	Family History of Hypertension				
	Yes	018	5.116	df = 3 p. 163	NS
	No	182			
7.	Duration of Hypertension				
	No history of hypertension	120	151.747	df = 12 p.000*	Significant
	<1years	006			
	1-2yrs	056			
	3-4yrs	009			
>4yrs	009				
8.	Family History of Obesity				
	Yes	031	3.594	df = 3 p. 309	NS
	No	169			
9.	Income (Monthly)				
	5001-10000	049	11.427	df = 6 p. 076	NS
	10001-15000	111			
	>15000	040			
10.	Type of Family				
	Joint	128	16.124	df = 3 p.001*	Significant
	Nuclear	072			
11.	Dietary Pattern				
	Vegetarian	143	2.119	df = 3 p. 548	NS
	Non-vegetarian	057			
12.	Life Style				
	Sedentary	020	36.756	df = 6 p.000*	Significant
	Moderate Activity	132			
	Heavy activity	048			

Table 5: Association between obesity and selected socio demographic variables

N = 200

Sr. No.	Demographic Variable	N	Chi-square value	df and p value	Level of significant
1.	Age in years				
	35-50yrs	091	28.428	df = 18 p.056	NS
	51-66yrs	043			
	67-82yrs	053			
>82	013				
2.	Education				
	Illiterate	072	26.909	df = 18 p.081	NS
	Primary Education	067			
	Secondary Education	045			
Graduate and above	016				
3.	Occupation				
	Unemployed	198	1.756	df = 6 p.941	NS
	Employed	002			

Conted...

4.	Religion				
	Sikh	179	8.163	df = 6 p.226	NS
	Hindu	021			
5.	Marital Status				
	Unmarried	035	19.038	df = 6 p.004*	Significant
	Married	165			
6.	Family History of Hypertension				
	Yes	018	5.685	df = 6 p. 459	NS
	No	182			
7.	Duration of Hypertension				
	No history of hypertension	120	50.055	df = 24 p.001*	Significant
	<1years	006			
	1-2yrs	056			
	3-4yrs	009			
	>4yrs	009			
8.	Family History of Obesity				
	Yes	031	4.620	df = 6 p. 593	NS
	No	169			
9.	Income (Monthly)				
	5001-10000	049	13.221	df = 12 p. 353	NS
	10001-15000	111			
	>15000	040			
10.	Type of Family				
	Joint	128	13.822	df = 6 p.032	NS
	Nuclear	072			
11.	Dietary Pattern				
	Vegetarian	143	3.955	df = 6 p. 683	NS
	Non-vegetarian	057			
12.	Life Style				
	Sedentary	020	33.909	df = 12 p.001*	Significant
	Moderate Activity	132			
	Heavy activity	048			

Discussion

The study was conducted using a descriptive research design, subject were selected simple random sampling technique. The sample size was 200.

This study revealed that majority of subjects i.e. 50.5% were not hypertensive, 30.5% subjects comes under the pre- hypertension category while 16% subjects were under the stage- I hypertension category and only 3% subjects comes under the stage-II hypertension category and for obesity the most of subjects i.e. 53.5%

were normal body mass index, while 42.5% subjects were overweight and only 4% subjects were underweight.

At last the study results showed that age, education, duration of hypertension, type of family and life style were strongly associated with hypertension, as the subjects indicates the p- value (.001) that is less than α (0.005). On the other hand occupation, religion, marital status, family history of hypertension, family history of obesity, income (monthly) and dietary pattern do not had any impact on hypertension as p- value was more

than α (0.005) and with obesity marital status, duration of hypertension and life style were strongly associated, as the subjects indicates the p- value (.001) that is less than α (0.005). On the other hand age, education, type of family, occupation, religion, family history of hypertension, family history of obesity, income (monthly) and dietary pattern do not had any impact on hypertension as p- value was more than α (0.005).

Conclusion

It was found that out of total percentage of subjects there were 42.5% subject overweight and 49.5% subject were hypertensive. So the highest percentage of women was comes under the normal range of hypertension and obesity. This study also concluded that age, education, duration of hypertension, type of family and life style were strongly associated with hypertension, as the subjects indicates the p- value (.001) that is less than α (0.005). instead of this, marital status, duration of hypertension and life style were strongly associated with obesity, as the subjects indicates the p- value (.001) that is less than α (0.005)

Ethical Clearance: The permission obtained from college to conduct the final study as the data was collected during Feb 2016.

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Conflict of Interest: NA.

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