Research Article

BEHAVIOURAL RISK FACTORS AND HYPERTENSION AMONG 40 YEARS AND ABOVE AGE GROUP IN URBAN VARANASI

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ABSTRACT

Hypertension has emerged as the most prevalent silent killer and serious public health issue. It is recognized to be disease which is consequence of poor dietary habits and lack of physical activity. Hence this study is attempted to know the risk factors that may cause of high blood pressure. ***Objective:*** *To assess the behavioural risk factors related to hypertension.* ***Material and Method:*** *A cross sectional study was conducted and 155 study subjects ≥ 40 years of age group were screened. Structured schedule was used for data collection. Two independent BP readings were taken in sitting position by visiting each participant at their home. Percentage, proportion and chi square test were applied to find out statistical significance.* ***Result:*** *The overall prevalence of hypertension was found 24.5% while out of 155 respondents 25.4% male and 23.8% female were found to be hypertensive.31.2% hypertensive were aged 60 years and above.27.3% hypertensive subjects were belonged upper class. Subjects chewing any type of tobacco found to be more (27.3%) hypertensive. Subjects with high BMI (23.7%) obese were found hypertensive.* ***Conclusion:*** *Present study concluded that physical activity with hypertension was found to be statistically significant. Increased trend of hypertension with increasing age was observed but it was statistically not significant.*

Keywords: *Hypertension, Risk factors, Age, BMI, Chewing smokeless tobacco, Physical activity.*

Introduction

Hypertension is one of the most emerging health issue in developing country, this silent, invisible killer is known as one of the key risk factor for development of non-communicable diseases, damage organ as well as cause of disability and death.[1] World health statistics (2012) reported that nearly one billion adult people had hypertension in 2000 and this will be increase to 1.56 billion by 2050, ample literature on India epidemiological studies have estimated that currently 25% of urban adults are hypertensive.[2] High blood pressure play main role of precursor to major cardiovascular diseases like stroke, myocardial Infarction, heart attack and heart failure.[3] it contributes 57% of all strokes and 24% of all coronary heart death in India.[4]

This increasing trend of hypertension is a warning alarm that needs immediately desirable interruption to avoid its fatal consequences. This study has been undertaken with objective of assessment of risk factors which are responsible for development of hypertension among ≥40 years age group population in urban Varanasi.

55 **Objectives:** To assess the behavioural risk factors related to hypertension.

Methodology

Study Design: A community based cross sectional study was conducted in field practice area Department of Community Medicine, Institute of Medical Sciences, Banaras Hindu University Varanasi. Urban Health Centre is catering about 5000 population. The proportion of 40 years and above is almost 26% of total population, for this study 155 study subjects (aged >40

years) were screened residing in urban area of Varanasi district.

Sample Size: sample size of the study was calculated taking the prevalence of hypertension 50% and permissible error 10%.Following formula was used for sample size determination.

$N= z^2 P (1-P) / e^2$

where N = sample size,

z = statistics for α error

P= estimated prevalence of hypertension.

Assuming alpha error at 5%, z 1.96 and estimated P at 50% for major risk factors with 10% margin of error (e) the sample size was calculated $N = (1.96)^2 * (0.5*0.5) / (0.1)^2 = 96$.

With 1.5 design effect and 10% non respondent rate the final sample size was found to be -96 * 1.5 / (1– 0.1) = 160.

Sampling Procedure: written informed consent was taken from the subjects prior to inclusion in the study.

Inclusion Criteria: all person 40 years and more than 40 years was study subject.

Exclusion Criteria: person less than 40 years and hospitalized and seriously ill.

Study subjects were screened by stratified random sampling method. pre design, and pre tested interview schedule was used to collected information this schedule included information regarding age, sex, height, weight, educational status, occupation, smoking, alcohol intake, fruit and vegetable consumption and physical activity. Blood pressure was measured using a standard mercury sphygmo-manometer on the left arm after 5 min rest with the subject in the sitting position. The first and fifth phase of Korotkoff sounds were used for systolic (SBP) and diastolic blood pressures (DBP), respectively. Two independent measurements were taken with a minimal interval of 10 min. Average of these two readings was used in the present analysis of the study.

For calculation of body mass index (BMI) (weight kg / height m^2) measurement of height and weight was taken, based on BMI individuals were classified in to two groups Normal (18.5-23) and over weight (>25) as per WHO guideline. Socio economic status of the study subjects were classified according to B.G. Prasad classification used for urban area.

Finally 155 study subjects were interviewed. Percentage and chi square test was applied for the independent distribution of hypertension among the various category of study variables and the level of significance was set at $p<0.05$. All statistical analysis was done on software SPSS 16.0.

Results and Discussion

Total one hundred fifty five study subjects were interviewed. Out of these 45.8%, 54.2% were male and female respectively. Maximum number of subjects (41.3%) belonged to the age group ≥60 years. more than half of the respondent were illiterate while 42.5% were literate 57.5% study subjects belonged to upper socioeconomic class. In the present study the overall prevalence of hypertension was found 24.5%. Similar findings were reported by ICMR study 1994, Prabhakaran [6] and Midha et al [7] (25%, 29.3%, 32.8%) prevalence of hypertension among urban adult population respectively.

Table-1: Baseline characteristics of the study subjects

Variables		No.	%
Gender	Male	71	45.8
	Female	84	54.2
Age (years)	40-49	53	34.2
	50-59	38	24.5
	60 & above	64	41.3
Education	Literate	66	42.5
	Illiterate	89	57.5
Socio-economic status	Upper class	99	63.8
	Middle + Lower	56	36.2

Table-2: Distribution of hypertension in study subjects

Prevalence	No.	%
Normal	117	75.5
Hypertensive	38	24.5
Total	155	100

Table- 3: Correlation of hypertension with socio demographic profile.

Socio demo-graphic profile	Variables	Total	Normal		Hypertensive		p Value
			No.	%	No.	%	
Age of the respondent (yrs)	40-49	53	44	83.0	9	17.0	p>0.05
	50-59	38	29	76.3	9	23.7	
	60 & above	64	44	68.8	20	31.2	
Respondent sex	Male	71	53	74.6	18	25.4	p>0.05
	Female	84	64	76.2	20	23.8	
Education of the respondent	Literate	66	49	74.2	17	26.2	p>0.05
	Illiterate	89	68	76.4	21	23.6	
Occupation of the respondent	Service/ Business/ Labour	90	69	76.7	21	23.6	p>0.05
	House Wife	65	48	73.8	17	26.2	
Socio-economic status	Upper	99	72	72.0	27	27.3	p>0.05
	Middle Lower	56	45	80.4	11	19.6	

Further study indicates that 25.4% male and 23.8% female were found hypertensive. A study conducted by Prabarkaran[6] also observed high prevalence of hypertension in male than female. The age-wise distribution of study subjects along with prevalence of hypertension in each group has shown in table-3. Observation showed that increasing trend of hypertension with increasing age was to be found but it was not statistically significant. Highest prevalence of hypertension was reported 31.21% in the age group of 60- >60 years. SS Ready et al also revealed that prevalence of hypertension is gradually increases with age.

Prevalence of hypertension was high in illiterate study subjects (26.2%) in comparison to (23.6%) in literate respondents. Prevalence of hypertension was noted highest among upper class (27.3%) followed by middle and lower class (19.6%) similar finding was also reported by Mohmmed Irfan et al.[8]

Table- 4: Correlation of hypertension with behavioural risk factors.

Risk Factors	Response	Total	Normal		Hypertension		p value
			No	%	No.	%	
Physical Activity	Yes	20	11	55.0	9	45.0	p<0.05
	No	135	106	78.5	29	21.4	
Fruit Consumption	Daily	30	22	73.3	8	26.6	p>0.05
	Weekly	125	95	76.0	30	24.0	
Green Leafy Vegetable	Yes	61	43	70.4	18	29.5	p>0.05
	No	74	72	97.29	20	27.0	
Smoking	Yes	21	16	76.0	33	24.6	p>0.05
	No	134	101	75.37	25	28.7	
Chewing Tobacco	Yes	87	62	71.2	25	28.7	p>0.05
	No	68	55	80.8	13	19.1	

High prevalence of hypertension was found in study subjects who were chewing tobacco (28.7%) than who were not chewing any kind of tobacco (19.1%). A study conducted by Mandal et al also revealed high prevalence of hypertension (56.8%) in tobacco chewing population.[9] Physical activity and hypertension was found statistically significant.

Table – 5: Correlation of hypertension with BMI

Risk Factors	Category	Total	Normal		Hypertension		p value
			No.	%	No.	%	
BMI	Normal	127	98	77.1	29	22.8	>0.05
	Obese	28	19	67.85	9	32.1	

As showed in table – 5, hypertension was prevailed in study subjects having BMI >25 (32.1%) than in having BMI<25 (22.8%).In the Bombay executive study also revealed 70.3% of (grade-II and grade-III) hypertensive had a BMI >25 compared to 47.2% of normative.[10]

Conclusion

Present study concluded that physical activity with hypertension was found to be statistically significant. Increased trend of hypertension with increasing age was observed but it was statistically not significant. Therefore it is urgent need to create mass awareness programmes regarding healthy life style modification including increased physical activities to prevent cardio vascular mortality from hypertension along with considering other risk factors like Smoking, tobacco chewing, and less consumption of fruit and vegetables.

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