STUDY OF   THE INCIDENCE AND RISK FACTORS ASSOCIATED WITH HYPERTENSION AMONG ADULT POPULATION RESIDING IN JAIPUR, RAJASTHAN

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ABSTRACT

A non-experimental cross sectional study design was opt to assess the incidence and risk factors connected with hypertension among adult Population by bring WHO modifiable risk Assessment tool among 100 adult populations at Jaipur. The convenient sampling method was adopted for the sample selection. The result of the study showed that the majority 26(26.5%) modifiable risk factors and 15(15.3%) non modifiable risk factors had been contributing to hypertension and there was significant association with the modifiable risk factors at the level of p< 0.05 and about 2.56 times risk factors contribute to hypertension (OR=2.56).The risk for developing hypertension due to adaptable risk factors is 1.73 times than that of the non-modifiable risk factors among adult population. Conclusion: This study interference that incidence and risk factors connected with hypertension is high in male sex among adult population and adaptable factors are the high risk factors.

Key words: *Incidence, Risk factors, Hypertension, Adult population.*

INTRODUCTION

Hypertension is a high blood pressure, also known as "Silent Killer" is a very common among the adults and conditions that can be lead to or complicate many health problems. About 31% people who had blood pressure exceeding 140/90 mmHg were unaware of their elevated blood pressure. Once identified, elevated blood pressure is should be monitored at regular intervals because hypertension is lifelong condition. There are as number of reasons why people have hypertension, some of them are inherited such as being male or having a family history of early heart attacks or strokes. Other risks may be partly inherited such as pre disposition to hyper tension or obesity. **(Hajjarand Kotchen, 2013).**

Adult is a human being or organism that has reached sexual maturity. In human background, the term adult moreover has meaning associated with social and legal concept, in compare to minor a legal adult is a person who has attained the age of prime of life and is consequently regarded as self-governing, self-sufficient and accountable .The adults with blood pressure above 140/90 mmHg should be evaluated for hypertension. Research studies have revealed that some clients demonstrate higher recorded blood pressure in the physicians then in the home setup known as "White Coat Effects". Some have only infrequent elevation in blood pressure and normal reading at blood pressure elevation of 160mmHg are more frequently occur in the adults. **(Spring House, 2013)**

NEED OF THE STUDY

The prevalence of hypertension varies across the WHO regions and country income groups. The WHO African Region has the highest prevalence of hypertension (27%) while the WHO Region of the Americas has the lowest prevalence of hypertension (18%).

A review of current trends shows that the number of adults with hypertension increased from 594 million in 1975 to 1.13 billion in 2015, with the increase seen largely in low- and middle-income countries. This increase is due mainly to a rise in hypertension risk factors in those populations. (https://www.who.int/news-room/fact-sheets/detail/hypertension)

Hypertension is a growing problem in India and causes significant burden on the health system. According to data from the GBD study of 2016, hypertension led to 1.63 million deaths in India in the year 2016 alone. GBD data also showed that over half of the deaths due to ischemic heart disease (54.2%), stroke (56.2%) and chronic kidney disease (54.5%) were attributable to high systolic BP. India has also been experiencing an increase in the prevalence of hypertension. A cross-sectional, population-based study on a large nationally representative sample of 1.3 million individuals carried out between 2012 and 2014 revealed that the crude prevalence of hypertension in India was 25.3%. Hypertension prevalence was common even among younger age groups, with approximately one out of every 10 individuals aged 18-25 yr suffering from it.

OBJECTIVE OF THE STUDY

The objective of the current study to determine the incidence and risk factors associated with development of hypertension among the adults population residing in Jaipur, Rajasthan.

RESEARCH HYPOTHESES

H1: There will be no significant relationship in risk factors and the incidence of hypertension.
H2: There will be no significant association between the risk factors and selected demographic variables at $p < 0.005$ level.

CONCEPTUAL FRAMEWORK OF THE STUDY

The conceptual framework of the study was based on Pender Health Promotion Model (1987) was designed to be a complementary counterpart to models of health promotion is directed towards increasing the level of wellbeing and self-actualization in a given individual and group.

REVIEW OF LITERATURE

A review of literature involves the systematic identification, location, and summary of written materials that contain information on the research problems **(Polit and Beck 2013)**

   It's classified under following section:
   a. Literature related to study on risk factors associated with hypertension among adult population
   b. Literature related to study on incidence and prevalence of adult hypertension.

RESEARCH METHODOLOGY

Research Design: A non -experimental cross sectional study design.
Variables: Socio demographic variables and associated risk factors of hypertension.
Setting: Selected urban field, Jaipur.
Population: The population of the study included the adults in the age group of 30-45 Years.
Sampling: The sample size of the study consists of 100 adult populations (who fulfill the inclusion criteria).
Sampling Technique: The Subject of the present study was selected by convenient sampling technique.

Instruments used in the study:

Part-I: Demographic Variables.

Part-II: BP monitoring procedure.

Part-III: WHO Modified Risk Assessment Tool was used.

ETHICAL CONSIDERATION

1. *BENEFICENCE*

The investigator followed the fundamental ethical principles of beneficence by adhering to:

a. The right to freedom from harm and discomfort

The study was beneficial for the participants as it enhanced their physiological wellbeing.

b. The right to protection from exploitation

The investigator explained the procedure and the nature of the study to the participants and ensured that none of the participants in study.

2. *RESPECT FOR HUMAN DIGNITY*

The investigator followed the second ethical principle of respect for dignity. It includes the right to self-determination and the right to self-disclosure.

a. The right to self determination

The investigator gave full freedom to the participants to decide voluntarily whether to participants in the study or to withdraw from the study and the right to ask question.

b. The right to full disclosure

The researcher has fully described the nature of the study, the person's right to refuse participation and the researcher responsibilities based on which both oral & written informed consent was obtained from the participants.

3. *JUSTICE*

The researcher adhered to the third ethical principle of justice; it includes Participant's right to fair treatment and right to privacy.

a. Right to fair treatment

The researcher selected the study participants based on the researcher requirements. The investigator identified new cases of hypertension and risk factors.

b. Right to privacy

The researcher maintained the study participant's privacy throughout the study.

4. *CONFIDENTIALITY*

The researcher maintained confidentiality of the data provided by the study Participants.

RELIABILITY

The reliability score obtained was 0.83. This showed that the tool was reliable and feasible for the study.

RESULTS

Result were organized under the following section-

Section A: Assessment of incidence of hypertension among adult population.

Section B: Assessment of level of hypertension and its risk factors among adult population.

Section C: Comparison of risk factors contributing to hypertension among adult population.

Section D: Association of level of hypertension and risk factors of hypertension among adult population with their selected demographic variables.

Table1-Frequency and percentage distribution of incidence of hyper tension among adult population.[N-100]

Variable	Normal (systolic) (<120)		Pre hypertension (120 ± 139)		Stage - I (140 ± 159)		Stage - II (>=160)	
	No.	%	No.	%	No.	%	No.	%
Hypertension	23	23.0	28	28.0	47	47.0	2	2.0

The incidence of hypertension. Among 100 adults Population, 28(28%) had Pre-hypertension, 47(47%) had stage-I hypertension, 2(2%) had stage II hypertension and 23(23%) of them were normal.

Table -2 Assessments of level of hypertension and its risk factors among adult population [N- 49]

Variable	Stage ± I (140 ± 159)		Stage ± II (>=160)	
	No.	%	No.	%
Hypertension	47	77.55	2	22.45

Finding revels that the level of hypertension among adults with respect to the level of hypertension (systolic) 49(77.55%) had stage -I hypertension and only 2(22.45%) had stage -IIhypertension

Table-3 Frequency and percentage distribution of level of risk factors of hypertension among adult population [N-49]

Risk Factors	Low(50%)		Moderate (51 ± 75%)		High (>75%)	
	No.	%	No.	%	No.	%
Non-modifiable	34	69.39	13	26.53	2	4.08
Modifiable	23	46.94	21	42.86	5	10.20
Overall	**35**	**71.43**	**12**	**24.49**	**2**	**4.08**

With regard to non-modified risk factors majority 34(69.39%) had low level of risk factors of hypertension, 13(26.53%) had low level of risk factors of hypertension and only 2(42.86%) had high level of risk factors of hypertension. With respect to modifiable risk factors, majority 23(46.94%) had low level of risk factor of hypertension and only 5(10.20%) had moderate level of risk factor of hyoertension revealed that majority 35(71.43%) had low level of risk factor of hyp[ertension,2(4.08%) had high level of hyper tension.

Table-4 Comparisonofnon-modifiableandmodifiableriskfactorscontributing to hypertension among adultpopulation. [N-49]

Variable	Factors	Level of Risk Factors				Chi square test	Odds Ratio
		High		Low			
		N	%	N	%		
Risk Factors	Modifiable	26	26.5	23	23.5	x^2=5.074 d.f=1 p=0.024*	2.56
	Non-modifiable	15	15.3	34	34.7		
	Relative risk	**1.73**		0./67			

The majority 26(26.5%) modifiable risk factors and 15(15.3%) non-modifiable risk factors had been contributing to hypertension and there was significant association with the modifiable risk factors at the level of $p<0.05$ and about2.56 times the risk factors contribute to hypertension (OR = 2.56). The risk for developing hypertension due to modifi able risk factors is 1.73 times than that of the non modifiable risk factors among adult popu lation.

Table-5 Association of level of hypertension (Systolic) among adult population with their selected demographic variables. [N-49]

Demographic Variables	Stage ± I (140 ± 159)		Stage ± II (>=160)		Chi-Square Value
	No.	%	No.	%	
Age in years					^{2}=0.188 d.f = 2 p =0.910 N.S
30 - 35 years	3	6.1	1	2.0	
36 - 40 years	13	26.5	3	6.1	
41 - 45 years	22	44.9	7	14.3	
Gender					^{2}=0.039 d.f = 1 p =0.843 N.S
Male	22	22.0	6	12.2	
Female	16	16.0	5	10.2	
Education					
Profession/Honours	3	6.1	0	0	
Graduate/Post graduate	4	8.2	2	4.1	^{2}=5.417 d.f = 6 p =0.492 N.S
Intermediate/Post high school diploma	3	6.1	1	2.0	
High school	1	2.0	2	4.1	
Middle school	2	4.1	0	0	
Primary school	12	24.5	3	6.1	
Non literate	13	26.5	3	6.1	
Occupation					
Profession	3	6.1	0	0	
Semi profession	3	6.1	2	4.1	
Clerical/Shop owner/Farmer	3	6.1	1	2.0	^{2}=3.822 d.f = 6 p =0.701 N.S
Skilled worker	4	8.2	2	4.1	
Semi skilled worker	8	16.3	3	6.1	
Unskilled worker	12	24.5	3	6.1	
Unemployed	5	10.2	0	0	
Family monthly income in Rupees					
More than 36017	-	-	-	-	
18000-36016	3	6.1	0	0	
13495-17999	3	6.1	1	2.0	^{2}=5.920 d.f = 5 p =0.314 N.S
8989-13494	7	14.3	5	10.2	
5387-8988	7	14.3	3	6.1	
1803-5386	5	10.2	0	0	
Less than 1802	13	26.5	2	4.1	
Type of family					
Nuclear family	19	38.8	5	10.2	
Joint family	15	30.6	4	8.2	^{2}=0.466 d.f = 2 p =0.792 N.S
Extended family	4	8.2	2	4.1	
Broken family	-	-	-	-	
Others	-	-	-	-	
Type of diet					^{2}=0.059 d.f = 1 p =0.807 N.Sχ
Vegetarian	9	18.4	3	6.1	
Non vegetarian	29	59.2	8	16.3	
Marital status					
Married	27	55.1	10	20.4	^{2}=2.298 d.f = 3 p =0.513 N.S
Single	5	10.2	1	2.0	
Widow	3	6.1	0	0	
Divorce	3	6.1	0	0	
Others	-	-	-	-	

N.S ± Not Significant

None of the demographic variables had shown statistically significant association with level of hypertension (Systolic) among adult population with hypertension.

Table-6 Association of level of risk factors of hypertension among adult population with their selected demographic variables. [N-49]

Factors	Demographic Variables	Level of Risk Factors				Chi square test	Odds Ratio
		Low		High			
		N	%	N	%		
Age	<40 years	14	28.6	6	12.2	^{2}=0.034 d.f=1 p=0.854 N.S	0.89
	>40 years	21	42.9	8	16.3		

Gender	Male	16	32.7	12	24.5	x^2= 6.533 d.f=1 p=0.011 S*	0.14
	Female	19	38.8	2	4.1		
Education	Literate	23	46.9	10	20.4	x^2=0.148 d.f=1 p=0.700 N.S	0.77
	Non literate	12	24.5	4	8.2		
Occupation	Employed	30	61.2	14	28.6	x^2=2.227 d.f=1 p=0.136 N.S	-
	Unemployed	5	10.2	0	0		
Family Income	>8988	13	26.5	7	14.3	x^2=0.684 d.f=1 p=0.408 N.S	0.59
	<8988	22	44.9	7	14.3		
Type of family	Nuclear	15	30.6	9	18.4	x^2=1.838 d.f=1 p=0.175 N.S	0.42
	Joint/Extended	20	40.8	5	10.2		
Type of diet	Vegetarian	8	16.3	4	8.2	x^2=0.177 d.f=1 p=0.674 N.S	0.74
	Non-vegetarian	27	55.1	10	20.4		
Marital status	Married	27	55.1	10	20.4	x^2=0.177 d.f=1 p=0.674 N.S	1.35
	Single/Widow/ Divorce/Others	8	16.3	4	8.2		

*p<0.05, S ± Significant, N.S ± Not Significant

The demographic variable gender had shown statistically significant association with the level of risk factors of hypertension among adult population at p<0.05 level but the risk (odds ratio) shows that gender of the adult population was contributing to the high level of risk factors for hypertension where the other demographic variables had not shown statistically significant association with the levelofriskfactorsofhypertensionamongadultpopulationbuttheriskforhypertension was 1.35 times an one married adultpopulation.

CONCLUSION

Hypertensionistheoneofthemostleadingcauseofmorbidityandmortalityand also confirmed that despite all the efforts to diagnose and treat patients with high blood pressure.Thisstudyrevealsthatincidenceandriskfactorsassociatedwithhypertension is high in male gender among adult population and modifiable factors are the high risk factors.

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