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## ASSESSMENT OF HEART HEALTHY PRACTICES AND CLINICAL RISK FOR COMPLICATIONS AMONG PATIENTS WITH HYPERTENSION AT SELECTED HOSPITAL IN CHENNAI

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### Keywords:

Hypertension, Clinical Risk,  
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**ABSTRACT: Background:** Hypertension (HTN) is an important public health problem in both economically developed and developing nations. World Health Organization (WHO) data indicate that by 2025 the global burden of hypertension will increase by 60% to be 1.56 billion individuals worldwide and higher in the developed nations. Hence the present study is aimed to assess the heart healthy practices among patients with Hypertension. Assess the risk regarding complications among patients with Hypertension. Associate the heart healthy practices and risk for complications with selected demographic variables. **Materials and Methods:** The descriptive design was used in this study. 50 samples were selected using Purposive sampling technique. Heart healthy practices were assessed by using the devised 5-point Likert scale. Risks for complications were assessed by Modified Q- intervention scale. The collected data were analyzed statistically. **Results:** 48 (96%) of the patients demonstrated better heart healthy practices. Most of the participants were moderately risk 29 (58%), and few were at high risk 14 (28%) to develop complications regarding hypertension. A negative correlation was found and statistically significant at  $p < 0.05$ . There was no association found between Heart Healthy Practices and Clinical Risk Regarding Complication with selected demographic variables except for the occupation at  $p < 0.05$ . **Conclusion:** Hypertension is a major risk factor for coronary heart disease as well as stroke. Blood pressure levels have been shown to be positively and continuously related to the risk for stroke and coronary heart disease. Practice of good heart healthy practices by the patients decrease the chance for complications related to hypertension.

**INTRODUCTION:** Hypertension (HTN) is an important public health problem in both economically developed and developing nations.

According to the World Health Organization (2012)<sup>1</sup>, hypertension is the number one cause of mortality in the world and it is a major risk factor for cardiac diseases and stroke. The progressively higher blood pressure leads to end stage renal disease. According to the World Health Statistics 2012 report, India has low rates of hypertension compared to world figures. Here, 23.10% men and 22.60% women above 25 years suffer from hypertension.

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India also fares better than the global average of 29.20 in men and 24.80 in women respectively. Dr Gautam explains <sup>2</sup>, "Blood pressure is the force of blood against your artery walls as it circulates through your body. Blood pressure normally rises and falls throughout the day, but can cause health problems if it stays high for a long time. High BP can lead to heart disease and stroke - leading causes of death in India. "One in three Indian adults has high blood pressure. Anyone, including children, can develop it," says interventional cardiologist Dr Nilesh Gautam <sup>2</sup> Worldwide, 7.6 million premature deaths (about 13.5% of the global total) were attributed to high blood pressure. About 54% of stroke and 47% of ischemic heart disease worldwide were attributable to high blood pressure.

The burden of hypertension varies remarkably throughout the regions of the world and is a serious public health problem in both developed and developing countries. World Health Organization (WHO) <sup>3</sup> data indicate that by 2025 the global burden of hypertension will increase by 60% to be 1.56 billion individuals worldwide and higher in the developed nations. According to a recent report, hypertension was the third major cause of disease burden, in both developed and developing regions worldwide, with 64 million disability adjusted life years (DALY). Cardiovascular diseases caused 2.3 million deaths in India in the year 1990; this is projected to double by the year 2020. Hypertension is directly responsible for 57% of all stroke deaths and 24% of all coronary heart disease deaths in India. In the Southeast Asian region with studies reporting HTN as an important risk factor for attributable burden of disease in the region.

The current life style pattern of human beings are assiduous and diligent in order to keep in pace with the tremendous changes in their work schedule. This mounts enormous pressure and creates health problems. In the contemporary world one of the common life style related health problem is hypertension which is also known as high or raised blood pressure. It is a major global public health issue. A combination of lifestyle factor increases the risk of non-communicable disorders which also increases the resistance of blood flow through the arteries leading to high blood pressure. There is a strong correlation between changing lifestyle factors and increase in hypertension in India.

High blood pressure that is one of its main side effects and risk factors is responsible for 13% of deaths and 7% of inabilities <sup>4</sup>. The increasing prevalence of hypertension is attributed to population growth, aging and behavioural risk factors, such as unhealthy diet, harmful use of alcohol, lack of physical activity, excess weight and exposure to persistent stress. Based on Seven Joint National Committee Criteria (NJC7), the algorithm for treatment of hypertension begins with lifestyle modifications and ends with medication diets <sup>5</sup>. People do not feel any necessity to change their lifestyle <sup>6</sup>.

Hence health care professionals should take initiative to screen the high risk patients for hypertension and to take appropriate measures to maintain the blood pressure within normal limit. Hence the investigator was in view to conduct the study on assessment of Heart healthy practices and Clinical risk for complications among patients with hypertension at selected hospital in Chennai.

### Objectives:

- Assess the heart healthy practices among patients with Hypertension, risk regarding complications among patients with Hypertension.
- Predict the relationship of demographic variables with clinical risk.
- Correlate the heart healthy practices with the clinical risk.
- Associate the heart healthy practices and risk for complications with selected demographic variables.

**MATERIALS AND METHODS:** The descriptive design was used in this study. The samples were selected using Purposive sampling technique. The study was conducted in the Medical OPD department at selected hospital in Chennai. Heart healthy practices were assessed by the devised 5-point Likert scale never (5), almost never (4), sometimes (3), fairly (2), very often (1) with unit of 25 items. The maximum score is "100" minimum score is "20". The scores were interpreted as very good heart healthy practices (68-100) good heart healthy practices (34-67), satisfactory heart healthy practices (2-33). Risks for complications were assessed by Modified Q- intervention scale.

The total score was 19 and categorized as mild, moderate and severe risk. This tool was used to predict or calculate the extent to which the patients are at risk to develop complications.

### Analysis and Interpretation:

**TABLE 1: DISTRIBUTION OF DEMOGRAPHIC VARIABLES (n = 50)**

S. No	Demographic variables	Frequency (n)	Percentage (%)
1.	Age		
	35- 44 years	9	18%
	45- 54 years	18	36%
2.	Sex		
	Male	24	48%
	Female	26	52%
3.	Religion		
	Hindu	20	40%
	Christian	18	36%
	Muslim	9	18%
4.	Others	3	6%
	Occupation		
	Unemployed	19	38%
	Government employee	14	28%
	Private employee	10	20%
5.	Retired person	5	10%
	Business man	2	4%
	Marital Status		
	Unmarried	7	14%
	Married	39	78%
6.	Divorced	1	2%
	Widow/ widower	1	2%
	Family History		
	Nuclear family	26	52%
7.	Joint family	24	48%
	Family History of Hypertension		
	Yes	18	36%
8.	No	32	64%
	Food Habits		
	Vegetarian	11	22%
9.	Non- vegetarian / Mixed	39	78%
	History of Taking Medication		
10.	Yes	24	48%
	No	26	56%
11.	Habits		
	Smoking	11	22%
	Smoking and drinking alcohol	12	24%
12.	No habit of smoking & alcohol	27	54%
	Family Income		
	<5,000	18	36%
	5,001- 10,000	13	26%
13.	10,001- 20,000	11	22%
	>20,001	8	16%
	Time Since Diagnosis		
14.	< 1 year	28	56%
	1- 10 years	12	24%
	11-20 years	10	20%

**TABLE 2: DISTRIBUTION OF HEART HEALTHY PRACTICES (n = 50)**

S. No	Heart healthy practices	Frequency (n)	Percentage (%)
1.	Good	2	4%
2.	Better	48	96%
3.	Satisfactory	-	-

**TABLE 3: MULTIPLE REGRESSIONS FOR THE CORRELATION BETWEEN THE DEMOGRAPHIC VARIABLE AND CLINICAL RISK OF COMPLICATIONS OF HYPERTENSION (n = 50)**

S. No.	Demographic Variable	R value	Beta coefficient value	P value
1.	Age	0.073	Constant - 6.972 Age - 1.322	0.057*
2.	Sex	0.004	Constant -9.224 Sex- 0.484	0.646
3.	Religion	0.024	Constant -11.182 Religion - -0.650	0.283
4.	Occupation	0.101	Constant - 11.602 Occupation- -0.760	0.101
5.	Marital Status	0.099	Constant - 13.708 Marital Status- -2.015	0.026*
6.	Family History	0.011	Constant - 9.100 Family History- 0.544	0.471
7.	Family History of Hypertension	0.020	Constant - 11.464 Family H/o HT- -0.885	0.332
8.	Food Habits	0.017	Constant - 12.075 Food Habits - - 1.175	0.370
9.	H/o Medication for Hypertension	0.108	Constant - 6.534 H/o Medication for HT- 2.225	0.020*
10.	Habits	0.004	Constant - 9.320 Habits- 0.278	0.660
11.	Family Income	0.009	Constant - 10.637 Family Income - -0.316	0.524
12.	Known Hypertension	0.002	Constant - 10.314 Known HT - -0.227	0.737

\* - P < 0.05

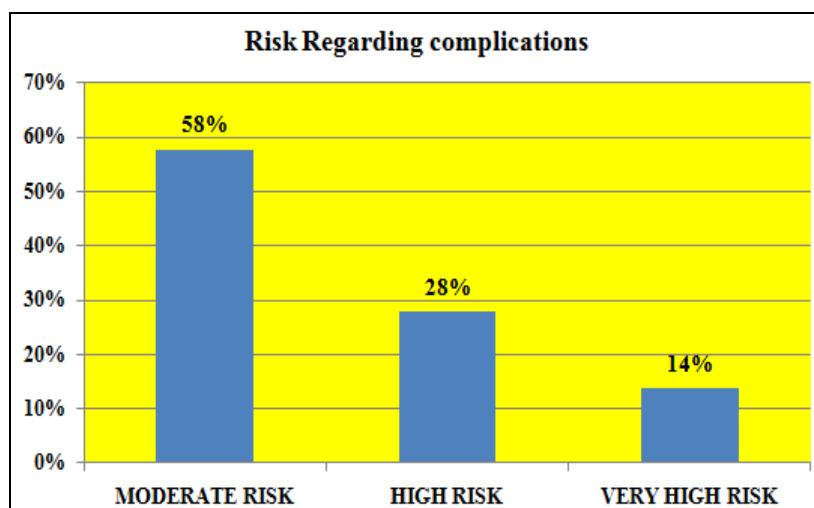
The above table denoted that the demographic variables such as age, marital status and history of taking medications for hypertension had significant positive relation towards the clinical risk of complications of hypertension. It indicates that one unit (score) increase in the significant variable will

increase the clinical risk by 1.322, -2.015 and 2.225 unit (scores) respectively.

This showed a negative correlation at p < 0.05. This infers that as the heart healthy practices are better the clinical risk is low.

**TABLE 4: CORRELATE THE HEART HEALTHY PRACTICES WITH THE CLINICAL RISK REGARDING THE COMPLICATIONS (n = 50)**

Variables	Mean	SD	r & p value
Heart Healthy Practices	21.00	1.63	- 0.085
Clinical Risk	9.92	3.84	p = 0.012*



**FIG. 1: CLINICAL RISK FOR COMPLICATIONS**

**TABLE 5: ASSOCIATION OF CLINICAL RISK REGARDING COMPLICATION WITH SELECTED DEMOGRAPHIC VARIABLES (n = 50)**

S.no.	Demographic variables	Moderate risk		High risk		Very high risk		Chi- square value	P value
		n	%	n	%	n	%		
1	Age								
	35- 44 years	4	8	5	10	0	0	5.7	p>0.05 (NS)
	45- 54 years	9	18	6	12	3	6		
	55- 65 years	16	32	3	6	4	8		
2	Sex								
	Male	12	24	8	16	4	8	1.25	p>0.05 (NS)
	Female	17	34	6	12	3	6		
3	Religion								
	Hindu	11	22	7	14	2	4	9.66	p>0.05 (NS)
	Christian	13	26	1	2	4	8		
	Muslim	4	8	4	8	1	2		
	Others	1	2	2	4	0	0		
4	Occupation								
	Unemployed	11	22	5	10	3	6	16.4	* P<0.05 (S)
	Govt. employee	8	16	3	6	3	6		
	Private employee	5	10	4	8	1	2		
	Retired person	4	8	1	2	0	0		
	Business man	1	2	1	2	0	0		
5	Marital Status								
	Unmarried	6	12	0	0	1	2	7.7	p>0.05 (NS)
	Married	21	42	13	36	6	12		
	Divorced	1	2	0	0	0	0		
	Widow/widower	1	2	1	2	0	0		
6	Family History								
	Nuclear family	13	36	7	14	6	12	3.8	p>0.05 (NS)
	Joint family	16	32	7	14	1	2		
7	Family H/o of HT								
	Yes	10	20	4	8	4	8	1.76	p>0.05 (NS)
	No	19	38	10	20	3	6		
8	Food Habits								
	Vegetarian	5	10	2	4	4	8	4.94	p>0.05 (NS)
	Non- vegetarian	24	48	12	24	3	6		
9	History of Taking Medication For HT								
	Yes	15	30	8	16	1	2	3.89	p>0.05 (NS)
	No	14	28	6	12	6	12		
10	Habits								
	Smoking	4	8	5	10	2	4	3.35	p>0.05 (NS)
	Smoking, alcohol	8	16	2	4	2	4		
	No habit of smoking, alcohol	17	34	7	14	3	6		
11	Family Income								
	<5,000	11	22	4	8	3	6	7.7	p>0.05 (NS)
	5,001- 10,000	4	8	6	12	3	6		
	10,001- 20,000	8	16	2	4	1	2		
	> 20,001	6	12	2	4	0	0		
12	Known hypertension								
	< 1 year	15	30	8	16	5	10	3.23	p>0.05 (NS)
	1- 10 years	6	12	4	8	2	4		
	11-20 years	8	16	2	4	0	0		

\* - P &lt; 0.05

**Findings of the Study:** Half of the study participants 24 (48%) were taking medications regularly, 27 (54%) had no history of smoking and drinking alcohol and 28 (54%) were known hypertensive for one year. Majority of the samples demonstrated better heart healthy practices 48

(96%). Most of the participants were moderately risk 29 (58%), and high risk 14 (28%) to develop complications regarding hypertension.

The demographic variables such as age, marital status and history of taking medications for hypertension had significant positive relation towards the clinical risk of complications of hypertension at  $p < 0.05$  respectively.

A negative correlation at  $p < 0.05$ . This infers that as the heart healthy practices are better the clinical risk is low. There was no association found between heart healthy practices and clinical risk regarding complication with selected demographic variables except for the occupation at  $p < 0.05$ .

**DISCUSSION:** The first objective of the study was to assess the level of heart healthy practices among patients with Hypertension. Participants demonstrated good heart healthy practices 2 (4%), better heart healthy practices 48 (96%) and satisfactory healthy practices 0 (0%). This study is consistent with the studies published in 2015/2012<sup>7, 8</sup>. It was shown that positive diet and lifestyle factors followed by young adults reduced their risk of CVD as they got older. These positive factors include a normal body mass index, limited alcohol intake, no smoking, a healthy diet, and regular physical activity. These results were found even in individuals who had a family history of heart disease - meaning nurture trumped nature (January 29, 2016 8:22:24 PM UTC)<sup>9</sup>.

The second objective of the study was to assess the risk regarding complications among patients with Hypertension. Moderate risks were 29 (58%), high risks were 14 (28%), and very high risks were 7 (14%). The mean  $\pm$  SD of clinical risk for complications were  $9.92 \pm 3.34$  respectively.

The present study finding substantiates the results of the study conducted by "Wenyu Wang, Elisa T. Lee (2006)<sup>10</sup> on Risk Factors and their relation to Cardiovascular Disease". The results revealed that the participants with pre hypertension had 3.2/1.74 times higher risk of developing hypertension / cardiovascular disease than normotensive participants. The third objective of the study was to predict the relationship of demographic variables with clinical risk regarding the complications. The demographic variables such as age, marital status

and history of taking medications for hypertension had significant positive relation towards the clinical risk of complications of hypertension at  $p < 0.05$  respectively.

The fourth objective of the study was to correlate the heart healthy practices with the clinical risk regarding complications. A negative correlation at  $p < 0.05$ . This infers that as the heart healthy practices are better the clinical risk is low.

The fifth objective of the study was to associate the heart healthy practices and risk for complications with selected demographic variables. There was no association found between Heart Healthy Practices with any of the demographic variables such as age, sex, religion, occupation, marital status, family history of hypertension, food habits, history of taking medications for hypertension, habits like alcohol and smoking, family income. But this result is consistent with the study conducted by "Zungu. LI, Djumbe FR (2013)<sup>11</sup> on Knowledge and lifestyle practices of hypertension patients attending a primary care clinic" where there was no statistical significant association found between age, habit of smoking but inconsistent with the other variables like dietary habits at  $p < 0.001$ , marital at  $p < 0.05$ , habit of alcohol at  $p < 0.05$ . There was no statistical significant association elicited between the clinical risks regarding complication with selected demographic variables except for the occupation at  $p < 0.05$ .

**CONCLUSION:** Hypertension is a chronic preventable disease and thus adequate heart healthy practices and lifestyle modifications are important features in its effective control and management. The present study discloses that most of the study participants had found to have good heart healthy practices and had moderate risk regarding the complications of hypertension. Though the participants have good heart healthy practices half of them had moderate risk to develop complications.

Hence behavioural interventions are required for the participants for change in attitudes and lifestyle changes. As the patients develop and adhere better heart healthy practices the clinical risk regarding complications will decrease and have a better quality of life<sup>10</sup>.

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