



## **Knowledge and Practice on Control Measures of Hypertension among Adults**

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### **Abstract**

**Objective:** The study aimed to assess and correlate the knowledge and practice on control measures of hypertension among adults and to determine its association with selected demographic variables, regarding control measures of hypertension to develop a self instructional module.

**Methods:** A quantitative study with descriptive approach with convenient sampling design of 80 adults. knowledge questionnaire with 30 items and a practice checklist with 25 items were used to assess the level of knowledge and practice regarding control measures of hypertension .The collected data were analyzed by using SPSS.

### **Results:**

The overall mean score percentage of knowledge is 42.83 and practice is 43.20. There was a significant correlation between knowledge and practice and significant association with selected demographic variables of adults

**Conclusion:** The findings of the study show that there is inadequate knowledge and practice among adults of Indergarh Datia, MP India regarding control measures of hypertension. A self instructional module was developed on control measures of hypertension.

**Keywords:** knowledge, practice, control measures, hypertension, adults, self instructional module.



## **Introduction**

Hypertension and Cardiovascular diseases are growing contributors to global disease burdens, with epidemics of hypertension advancing across many regions of the world which are experiencing a rapid health transition (1). The World Health Organization predicts that deaths due to hypertension and circulatory system are projected to double between 1985 and 2015 (2). Hypertension in India causes 3 million deaths per year, accounting for 25% of all mortality. India accounts for the highest number of deaths at 15, 31, 534 for both men and women population. High blood pressure (BP) is a major public health problem in India and its prevalence is rapidly increasing among both urban and rural populations (3). In fact, hypertension is the most prevalent chronic disease in India.

The prevalence of hypertension ranges from 20-40% in urban adults and 12-17% among rural adults. The number of people with hypertension is projected to increase from 118 million in 2000 to 214 million in 2025, with nearly equal numbers of men and women (4).

A survey of 26,000 adults in South India showed a hypertension prevalence of 20% (men 23% and women 17%) but 67% of those with hypertension were unaware of their diagnosis (5). Majority of hypertensive subjects still remain undetected and the control of hypertension is also inadequate. This calls for urgent prevention and control measures for hypertension (6). Diet, lifestyle factors and stress have been extensively investigated as risk factors for hypertension and later it leads to cardiovascular diseases like coronary heart disease [CHD] and stroke and are also linked to other cardiovascular risk factors like diabetes, and obesity. Education of peoples in these aspects is very essential for proper management and control of hypertension to lessen the burden of the disease and infuse confidence and courage in controlling the symptoms and leading active lives (7).

Pierin A.M, et al. highlighted that among 440 hypertensive adults, 45.5% had an adequate blood pressure control were mainly women, younger, with a shorter time of disease, with previous treatment for hypertension, less interruptions in treatment and more conscious about the importance of physical activities(8). Khosravi. A, et al. in 2011 found out the impact of a 6-year comprehensive community trial on awareness, treatment and control rates



of hypertension in Iran Data from independent sample surveys before and after implementation of the program (2001 vs.2007) included educational strategies at population level as well as for hypertensive patients, their families and health professionals and it was effective (9). Bhardwaj, R et al. in 2011, determined the prevalence, awareness and control of hypertension in rural communities of Himachal Pradesh in a population based survey in three villages. Total 1092 adults of  $>$  or  $=18$  years of age were examined among that 507 (46.42%) were male and 573 (52.47%) were female,392 (35.89%) were found to have hypertension (39.8% in male and 33.15% in female), 267 had their blood pressure in pre-hypertensive range (24.45%). Only 433 (39.6%) had their blood pressure in normal range. 84 (21.98%) of 392 hypertensive persons were aware of their hypertensive status and only 17 of these 84 (20.23%) had their blood pressure under control (10). Steiner S, et al. in 2010 conducted a survey to identify the Blood pressure awareness in Austria, balanced for Austrian demographic characteristics 1,005 men and women older than 15 years of age were randomly selected for face-to-face interviews about BP awareness, risk factors, and hazards of hypertension and treatment options including life- style interventions. The survey reported that, despite a high understanding of the risks of hypertension among the Austrian population, a widespread misconception regarding BP symptoms and infrequent personal checks are worrisome and might also be valid in other Western countries (11).

### **Aim**

To assess and correlate the knowledge and practice on control measures of hypertension among adults and to determine its association with selected demographic variables, regarding control measures of hypertension to develop a self instructional module.

### **Method and Materials**

Descriptive research design was adapted with 80 adults as sample who are living at selected areas of Indergarh and selected by convenient sampling technique.

The conceptual framework selected for the study was Health Belief Model by Becker. A structured questionnaire and checklist were used to assess the level of knowledge and



practice regarding control measures of hypertension among adults. Data was collected from the samples for a period of 6 weeks after conducting the pilot study.

### **Dependant variable:**

Knowledge and practice of adults on control measures of hypertension are the dependent variables.

### **Attribute variable:**

Age, gender, educational status, occupation, family income, marital status, food habit, hospitalization due to hypertension and sources of information on control measures of hypertension are attribute variables.

### **Inclusion Criteria**

Adults who were willing to participate in the study, both male and female in the age group of 20-60 years, with hypertension and residing at the selected areas of Indergarh, MP India

### **Exclusion Criteria**

Those who are diagnosed with other co morbid illnesses, critically ill, cannot speak and understand Hindi and English were excluded.

### **Tool Development and Description**

A structured questionnaire and a checklist were developed for assessing the knowledge and practice on control measures of hypertension. The tool was prepared on the basis of the objectives of the study with the following steps:

- Review of literature provided adequate content for the tool preparation.
- Researcher's personal experience, consultation with experts and discussion with peer groups.
- Prior to structuring the questionnaire the investigator visited various hospitals and collected relevant data necessary to construct the items for the knowledge questionnaire.
- Prior to preparation of the checklist the investigator assessed the knowledge on



common practices of adults regarding control of hypertension.

- Development of Blue print.
- Construction of demographic variables, structured knowledge questionnaire and checklist to assess knowledge and practice on control measures of hypertension.
- Abstained Content Validity and Reliability of the tool.

**Part – I-** Demographic Variables with Age, gender, educational status, occupation, family income, marital status, food habit, hospitalization due to hypertension and sources of information on control measures of hypertension.

**Part –II-** Questions assessing knowledge about hypertension (30 number Multiple Choice) in broad aspects comprising on Awareness about hypertension (Item number 1-10 General Information), Causes and risk factors (15-20), Signs and symptoms (21-25), Diagnosis and Management, prevention and control (25-30). Scoring for the correct option is 1 and other options 0. The score ranges from 0- 30.

**Part –III:** A checklist comprising of closed ended dichotomous questions (25 number) to assess the practice on control measures of hypertension, which are positively stated and negatively stated items. In positively stated items the score for Yes is 1 and for No is 0. In negatively stated items the score for Yes is 0 and for No is 1. The score ranges from 0-25.

### **Ethical Consideration**

Prior to data collection, permission was obtained from the concerned authorities of Indergarh area Panchayat to conduct the study and from the adults, regarding willingness to participate in the study, only were included. The investigator obtained consent from subjects. Confidentiality was maintained during data collection

### **Tool Validity and Reliability**

Validity of the tool obtained from the experts, comprising of 6 nurse educators (Medical Surgical Nursing), 3 Professors (Medicine) and a Statistician. The reliability of the knowledge Questionnaire is established (0.81) by administering the tool for 10 adults who fulfilled

$$R = 2r/1+r$$



sampling criteria, by split-half method using the Spearman Brown Prophecy formula

R - Reliability of coefficient of correlation for whole test

r - Reliability of coefficient of correlation for half test

Spearman rank order correlation was used to find out the inter rater reliability (0.90) for the practice checklist on control measures of hypertension.

### **Pilot Study**

The pilot study was conducted for a week among 10% of non-study subjects selected at a non-study area by using convenient sampling technique. Data analysis of the pilot study was done to ensure the effectiveness of the main study. The findings revealed that most of the subjects were having inadequate knowledge and unfavorable practices regarding control measures of hypertension. Considering the results and opinion of experts, the investigator decided to carry out a detailed study.

### **Data Collection and Analysis**

By considering all the ethical aspects the main study was conducted for six weeks. The investigator given self-introduction and explained the purpose of the study. The data is collected by using structured questionnaire and checklist to each of adult. A self-instructional module is developed to educate the adults on prevention and control of hypertension. It took about 25-30 minutes per sample to collect the data. The responses were recorded in the space provided in the questionnaire itself followed by which the self-instructional module were given to the samples.

The collected data was analyzed by using descriptive and inferential statistics. Frequencies and percentages were used for the analysis of demographic data, Chi square test was used to associate the demographic variables with the knowledge and practice of adults on control measures of hypertension and Correlation Co-efficient 'r' was calculated to correlate the knowledge and practice.



**Result and Discussion**

In calculation(table1) of the demographic variables among 80 adults 50% of them were under 21-30 years of age group, in which 70% of them were male,45% of them belongs to the monthly income of Rs 2501-5000, 48% of them were married which shows the marital burden, 85% of them were Non vegetarian highlights the food type concern,70% of them had been hospitalized for Hypertension treatment ,which affects their livelihood and day to day life. As 58% of them gets information through the Television confirms the important roll of the mass media in health education about the disease and its prevention among the people in community.

**Table:1 Description of socio-demographic variables of the adults**

Socio-demographic Variables		No (80)	%
<b>Age</b>	21-30 years	40	50
	31-40 years	8	10
	41-50 years	24	30
	51-60 years	8	10
<b>Gender</b>	Male	56	70
	Female	24	30
<b>Educational status</b>	Primary	4	5
	Secondary	36	45
	High School	32	40
	P.U.C\Degree	8	10
<b>Occupation</b>	Employed	10	12
	Agriculture	43	54
	Business	7	9
	Dependent	20	25
<b>Family income</b>	Below2500	16	20
	2501-5000	36	45
	5001-10000	20	25
	Above 10000	8	10



<b>Marital status</b>	Married	46	58
	Unmarried	04	05
	Widow/widower	25	32
	Separated	5	05
<b>Food habits</b>	Vegetarian	12	15
	Non - Vegetarian	68	85
<b>Hospitalization due to hypertension</b>	Yes	57	70
	No	23	30
<b>Sources of information</b>	Television	46	58
	Health centers	4	05
	News papers	16	20
	Internet	14	17

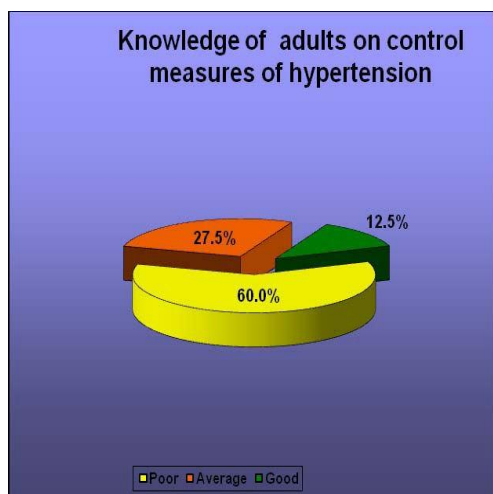
The (table 2) findings depicts that, of all 80 adults 48 (60%) were having poor knowledge, 22 (27.5%) were having average knowledge and only 10 (12.5%) of them had good knowledge. Assessment of level of practice of adults about control measures of hypertension revealed that 43 (53.75%) have shown inadequate practices, 25 (31.25%) have average practice and only 12 (15%) have adequate level of practices regarding control of hypertension.





**Table:2 knowledge and practice on control measures of hypertension among adults**

Knowledge			Practice		
Grading		Frequency(80) & %	Grading		Frequency(80) & %
Poor	0-40	(48) 60%	Inadequate	0-40	(43) 53.75%
Average	41-70	(22) 27.5%	Average	41-70	(25) 31.25%
Good	71-100	(10) 12.5%	Adequate	71-100	(12) 15%



**Figure:1 knowledge on control measures of hypertension among adults**

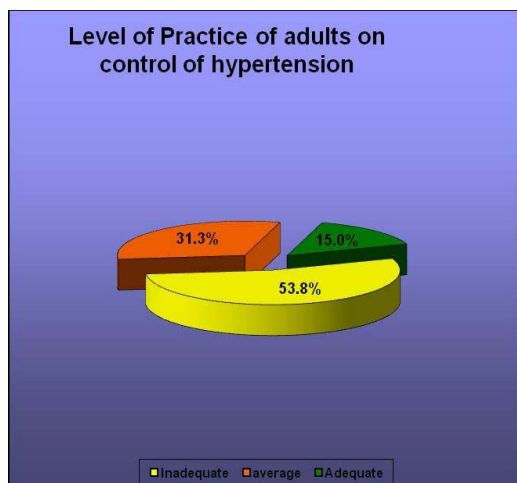


Figure:2 Practice on control measures of hypertension among adults

The study (table3) findings revealed that the knowledge regarding control measures of hypertension among adults with mean of 12.85, standard deviation of 6.82 and the mean score percentage was observed as 42.83. The mean score for practice was 10.8 with standard deviation 5.66 and range 20. The mean score percentage was 43.2. This shows that the adult practices regarding control measures of hypertension was found to be poor. The linear correlation between overall knowledge and practice was  $r = 0.933$ , which was statistically significant at P 0.01 level. The correlation analysis shows significant relationship between knowledge and practice.

Table:3 Correlation of knowledge and practice of adults on control measures of hypertension

Variables	Maxi mum score	Mean	SD	Range	Mean score%	Correlation coefficient (r)	P
Knowledge	30	12.85	6.82	23	42.83	0.933	Sig 0.01
Practice	25	10.8	5.66	20	43.2		

The knowledge (table4) and practice of adults were influenced by educational status. The calculated chi-square value for association of knowledge with educational status



was 0.008 (Highly significant) and for practice was 0.02 (Significant). The knowledge of adults was influenced by Age, Gender, and Occupation, Marital status and Hospitalization. The practice of adults was influenced by Age, Gender, Educational status, Family income, Marital status and Hospitalization. Ong, HT, et al. in 2010 determined the prevalence (36%), awareness and control of hypertension (81%) in an elderly community in Penang, Malaysia. Prevalence rate was relatively low may be due to a fairly sheltered lifestyle with less social stress and a daily routine that incorporates adequate exercise to the residents and, more regularly monitored by the medical care-givers. Compliance was better at a residential home because medication is served by their care-givers and cost is absorbed in this charitable organization.(12), suggests that hypertension awareness and control can be reasonable for the elderly in a residential home. This findings supports the current study as the marital status and the income of the family had significant influence in awareness and control and complains to Hypertension.

**Table:4 Association between knowledge and practice of adults on control measures of hypertension with socio-demographic Variables**

Socio-demographic Variables	Knowledge			Practice		
	$\chi^2$	Df	P-Value	$\chi^2$	Df	P-Value
Age	1.71	3	0.05(S)	10.56	3	0.01 (S)
Gender	3.52	1	0.05(S)	1.74	1	0.018(S)
Educational status	11.8	3	0.008(HS)	9.14	3	0.02(S)
Occupation	10.39	3	0.015(S)	3.1	3	0.37(NS)
Family income	2.97	3	0.39(NS)	9.95	3	0.018(S)
Marital status	4.56	1	0.03(S)	4.29	1	0.03(S)
Food habits	0.21	1	0.65(NS)	0.49	1	0.49(NS)
Hospitalization	10.49	3	0.015(S)	11.48	3	0.009(HS)
Sources of information	7.77	3	0.20(NS)	2.28	3	0.92(NS)



Identification of the trigger factors and how to avoid them is a major step in control and preventing hypertension. Avoiding of environmental triggers, monitoring using sphygmomanometer and regular use of medications will permit most of them to achieve good control of their disease and can lead an active life, since the majority of people with hypertension have average knowledge about the disease process, trigger factors, treatment, prevention and control of hypertension.

### **Recommendations**

In the light of the above findings and personal experience of the investigator the following recommendations are offered.

- The study can be replicated on a larger sample; thereby findings can be generalized for a larger population.
- Regular educational programme can be conducted for adults and patients on avoidance of risk factors, monitoring of BP and use of anti-hypertensive medications, thereby ensuring an active life for hypertensive patients.
- Epidemiological studies may be conducted in defined geographical areas to assess the morbidity, mortality, risk factors for hypertension and environmental control, thereby reducing the socio-economic burden.
- A similar study can be conducted to compare the knowledge and practice level of adults and hypertensive patients between urban and rural communities.

### **Conclusion**

The prevalence of hypertension has increased several folds globally. The morbidity rates associated with hypertension are dramatic. It affects occupational choice, physical activity and many other aspects of life. The researcher concludes that the selected adults knowledge and practice regarding control measures of hypertension was inadequate at Indergarh Datia, MP, India so, a self-instructional module on meaning, causes, signs symptoms and management, prevention and control of hypertension is developed and administered to adults which is



aimed to provide knowledge to the adults on identification and avoiding trigger factors, monitoring and regular use of medications and thereby enabling the adults to lead normal active life.

### **Conflict of interest**

The authors declare no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

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