A Study to Assess the Knowledge and Practices on Control Mesaures of Hypertension among the Adults in Selected Areas of Gwalior in a View to Develop a Self-Instructional Module

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ABSTRACT

Background: 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. **Objectives:** The study aimed to assess the level of knowledge and practice regarding control measures of hypertension among adults develop the self-instructional module regarding hypertension and its control measures and distribute the same to adults. **Methods:** Descriptive research design was adopted for the study. The sample consisted of 80 adults who are living at selected areas of Gwalior were selected by convenient sampling technique. The tool selected for this study was structured questionnaire and practice questionnaire to assess the level of knowledge and practice regarding control measures of hypertension among adults in Gwalior town. **Results:** The study findings revealed that the knowledge regarding control measures of hypertension among adults was determined with mean of 12.85 and standard deviation of 6.82. The mean score percentage was computed and it was observed as 42.83. The selected adults have inadequate knowledge regarding control measures of hypertension. 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 0.01 level. The correlation analysis shows a highly significant relationship between knowledge and practice. **Conclusion:** The study concluded that there is inadequate knowledge and practice among adults of Gwalior town regarding control measures of hypertension.

KEYWORDS: Blood pressure; hypertension; knowledge; practice; prevention; control measures

INTRODUCTION

Hypertension is a condition in which the amount of pressure exerted on the walls of the blood vessels is consistently higher than the normal. This becomes significant because placing too much pressure on the walls of the blood vessels could damage the walls of the blood vessels. Due to rapid development in the past decades human life style has dramatically changed. A healthy life style is a condition in which there is a combination of healthy eating and regular exercises. Balanced diet combined with regular physical activity helps to keep the heart healthy as well as the body keep fit, maintain the optimum body weight, improves the energy utilization and prevent early onset of cardiac illness. There are certain control measures for the hypertension and its prevention. These measures are very simple to follow needs public interest and self-awareness about the hypertension its dangers. There is a need to educate

the public about the control measures of hypertension and to change their life style to promote a healthy productive life.

Hypertension is a major cause of heart failure, stroke, kidney failure and other vascular conditions. Once it is developed it is a life time condition and about 20 % of the adult population develops hypertension. The treatment of hypertension must normally be lifelong and requires regular medication along with diet and other lifestyle changes. Even though there is various control measures are exist the hypertension is rapidly found among the adults. Cardiovascular diseases caused 2.3 million deaths in India in the year 1998. This is projected to be double in the year 2020. Hypertension is responsible for the 57% of all stroke deaths and 24% of all coronary heart disease in India.

Hypertension carries the risk of premature morbidity and mortality which increases as the systolic and diastolic pressure rise. It is one of the major risk factor for cardiovascular disorder mortality which accounts for 20% to 50%. It is commonest cardiovascular disease posing a major public health challenges and a worldwide health disorder. In the modifiable risk factor of hypertension is major factor as "hypertension "itself implies a disorder initiated by tension or stress.

As lack of physical activity, alcoholism, and other bad habits like sedentary life style, smoking, eating high cholesterol diet leading to increasing risk of the hypertension even in the younger age. The need is that people must modify their life style and use natural things such as meditation, yoga and other control measures to prevent the extensive effects of hypertension on the body.

The researcher has observed that many adults are very prone to develop hypertension due to lack of knowledge about controlling measures of hypertension and also their ill practices may lead to the for development of hypertension.

Need For the Study:
Hypertension is major health problem affecting about 20% of adult population in most of the countries. It leads to major risk factors for cardiovascular system mortality, which for 29 To 50 % of all mortality and morbidity, which contribute disability. Hypertension is major cause for stroke and kidney failure thus, it's called 'silent killer'.

In India the prevalence of hypertension was 59.9/ 1000 in males and 69.9/1000 in females in urban population and 35.5 / 1000 in males and 35.9/1000 in females in rural population.

Hypertension affects 25% of adults in the United States. If untreated, it carries a high mortality. Risk factors for hypertension include family history, race (most common in blacks), stress, and obesity, a diet high in fat or sodium. Tobacco use, sedentary life style and aging. Secondary hypertension may result from renal vascular disease; pheochromocytoma; primary hyperaldosteronism; Cushing syndrome; thyroid, pituitary or parathyroid dysfunction; coarctation of aorta; pregnancy; neurologic disorders; and use of hormonal contraceptives or other drugs, such as cocaine, epoetin alpha (erythropoietin), and cyclosporine. Cardiac output and peripheral vascular resistance determine the blood pressure. Increased blood volume, cardiac rate and stroke volume as well arteriolar vasoconstriction can raise blood pressure. The link to sustained hypertension, however, is unclear. Hypertension may also result from failure of intrinsic regulatory mechanisms.

It is documented in India about 50% of deaths occurring due to cardiac problems are preventable. Adopting a healthy life style can prevent the cardiac diseases. Nurse as health professional can play an important role in creating awareness among public about control measures of hypertension and best healthy practices for preventing the risk of hypertension.

SS, et al ;(2010) Conducted a study to reveal the recent trends in the prevalence of high blood pressure and its treatment and control, 1999-2008. The study was conducted by Centres for Disease Control and Prevention National Centre for Health Statistics 3311 Toledo Road, Hyattsville, Maryland 20782, USA. The study proved that, High blood pressure is one of the most common risk factors for cardiovascular disease and stroke (1). This report evaluates the overall trends in age-adjusted high blood pressure prevalence, awareness, treatment, and control using the most recent 10-year NHANES data. It also examines these age-adjusted rates for hypertension by sex, age, and race and ethnicity6.

As many studies suggested that, many individuals have lack of knowledge regarding diet, exercise and life style modification for preventing and control of hypertension. The study was undertaken to educate the public about the control measures of hypertension and develop best healthy practices for controlling the hypertension.

PROBLEM STATEMENT:
"A study to assess the knowledge and practices on control measures of hypertension among the adults in selected area of Gwalior in a view to develop a self-instructional module".

OBJECTIVES:
1. To assess the knowledge on control measures of hypertension among adults.
2. To assess the practice on control measures of hypertension among adults.
3. To develop the self-instructional module regarding hypertension and its control measures and distribute the same to adults.
4. To determine the association between the selected demographic variables with knowledge and practice of adults regarding control measures of hypertension.
5. To determine the association between the knowledge and practice of adults regarding control measures of hypertension.

HYPOTHESIS:
H1: There will be a significant association between the knowledge and practice of adults in selected area with their selected socio demographic variables.

H2: There will be a significant association between the knowledge and practice of adults on control measures of hypertension.

OPERATIONAL DEFINITIONS:
Assessment: It refers to the organized, systematic and continuous process of collection of data from adults regarding knowledge on control measures of hypertension.

Knowledge: It refers to the level of awareness among selected subjects regarding control measures of hypertension.

Practice: It refers to self-care activities of adults towards control measures of hypertension.

Control measures: In this study control measures refers to those activities which are performed by the adults to decrease the blood pressure.

Hypertension: Hypertension is systolic blood pressure is greater than 140 mm of Hg and diastolic pressure is greater than 90 mm of Hg.

Adults: In this study adults refers to those individuals between age group of 21 – 50 years.

Self-instructional module: In this study self-instructional module refers to scientific information on control measures of hypertension which is prepared according to the level of understanding.

MATERIAL AND METHODS:
Research approach:
Descriptive survey approach

Research design:
Non- Experimental, Descriptive survey design

Variables:
Dependent variable- In this study Knowledge and practice of adults on control measures of hypertension is the dependent variable.

Attribute variable: In this study Age, gender, educational status, occupation, family income, marital status, area of living, food habit, hospitalization due to hypertension and sources of information on control measures of hypertension are attribute variables.

Research setting:
The study was conducted at the outpatient and other health departments of PHC at selected area of Gwalior.

Population: Adults attending the outpatient and other health departments of PHC at selected area of Gwalior.

Sample:
Adults living at selected areas of Gwalior between the age group of 20-60 years.

Sample size: 80 adults

Sample techniques:
Convenient sampling technique.

Criteria for sample selection:
Inclusion criteria:
1. Adults who are willing to participate in the study.
2. Both male and female in the age group of 20-60 years.
3. Adults with hypertension residing at the selected areas of Gwalior.

Exclusion criteria:
1. Those who are diagnosed with other co morbid illnesses.
2. Adults who are critically ill.
3. Adults who cannot speak and understand Hindi and English.
4. Adults from other than Gwalior.

Tool and method of data collection:
Selection and development of tool:
DEVELOPMENT OF TOOL
Structured knowledge questionnaire was developed for assessing the knowledge on control measures of hypertension and a checklist to assess the practice of control measures of hypertension.

The tool was developed after extensive review of literature, internet search and expert advice& on the basis of the objectives of the study.

DESCRIPTION OF THE TOOL
Structured Knowledge Questionnaire
The structured knowledge questionnaire consists of two sections

Part - I

Demographic background of the adults i.e., age, gender, educational status, occupation, family income, place of living, food allergies, pets in house, type of pets, sources of information used and cigarette smoking.

Part -II

Self- structured questionnaire, which consists of two sections.

Section - A: Consists of questions assessing knowledge about hypertension in broad aspects comprising questions on the following.
➢ Awareness about hypertension (General Information)
➢ Causes and risk factors
➢ Signs and symptoms, Diagnosis.
➢ Management, prevention and control.

Section – B: A checklist comprising of closed ended dichotomous questions to assess the practice on control measures of hypertension.

There is total 30 Multiple Choice Questions in section A, Item number 11-20 inquire general information on hypertension and 21-25 are related to causes and risk factors of hypertension, 26-30 relates to signs symptoms and diagnosis, 31-40 checks out for treatment, prevention and control measures of hypertension.

There is total 25 questions in the section B, of which are positively stated and negatively stated items.

SCORING

The 30 questions in section-A are of Multiple-choice questions and for the correct option the score is 1 and other options 0.

The 25 questions in Section- B are closed ended dichotomous questions. The scoring scale consists of two options - Yes\ No. There 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 a minimum of 0 to a maximum of 30 for section-A and score of minimum 0 to a maximum of 25 for section-B.

The level of Knowledge has been classified as
Poor - 0-12
Average - 13-22
Good -23-30

The level of score regarding practice has been classified as –
Inadequate -0-10

Average -11-17
Adequate - 18-25

Reliability of tool: The reliability of the tool is established by split-half method using the Spearman Brown Prophecy formula by administering the tool for 10 adults who fulfilled sampling criteria.

The reliability co- efficient of the tool was found to be 0.81, which showed that the tool was reliable. Inter rater reliability was estimated for the checklist on control measures of hypertension. Spearman rank order correlation was used to find out the inter-rater reliability. The reliability co-efficient was 0.90, which showed that the tool is highly reliable.

Data collection procedure-:
➢ Formal permission was obtained from the authorities of panchayath of Gwalior to conduct the study.
➢ Further, the investigator obtained consent from subjects. Confidentiality was maintained during data collection.
➢ The data collection procedure was carried out for a period of six weeks after obtaining formal permission from the hospital authorities and from the participants.
➢ Data was collected from 80 adults selected by non-probability convenient sampling technique.
➢ The investigator selected the adults at selected areas of Gwalior and administered the structured questionnaire 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 self-instructional module to the samples.

Ethical consideration:
Permission was obtained from the adults regarding willingness to participate in the study and only those who are willing were included in the study. The data collection procedure was carried out for a period of six weeks. After obtaining permission from the authorities' panchayats of Gwalior.

Plan for data analysis:
The plan for data analysis includes-
➢ Demographic variables would be analyzed by using Frequency and percentage.
➢ Chi square test is used to associate the demographic variables with the knowledge and practice of adults on control measures of hypertension.
➢ Correlation Co-efficient 'r' was calculated to relate between knowledge and practice.

RESULTS:

Table-1: Distribution of subjects according to their demographic variables

n = 80

Sl. No.	Demographic factors	Frequency		Percentage
1	Age	21-30	40	50
		31-40	08	10
		41-50	24	30
		51-60	08	10
2	Gender	Male	56	70
		Female	24	30
3	Educational status	Primary	04	5
		Secondary	36	45
		High school	32	40
		P.U.C./Degree	08	08
4	Occupation	Employed	10	12.5
		Agriculture	43	53.75
		Business	07	8.75
		Dependent	20	25
5	Family Income	Below 2500	16	20
		2501-5000	36	45
		5001-10000	20	25
		Above 10000	08	10
6	Marital status	Married	46	57.5
		Unmarried	24	30
		Widow	36	45
		separated	10	12.5
7	Area of living	Urban	34	42.5
		Rural	46	57.5
8	Food habits	Vegetarian	12	15
		Non-vegetarian	68	85
9	Hospitalization due to Hypertension	Yes	57	70
		No	23	30
10	Source of information	Television	46	57.5
		Health centers	04	5
		News paper	16	20
		Internet	14	18

Table 1: Described about the frequency, percentage distribution of demographic variable. Distribution of the subject by age revealed that majority of the subject, i.e., age wise distribution of adults was, 50% of the adults were in the age group of 21-30, 10% were in 31-40 years of age, 30% were in 41-50 years of age and only 10% were in the age group of 51-60 years with mean age 12.85 and standard deviation 2.75. With regards to gender70% of adults were male and 30% were female.

With regards to educational status5% of adults had an educational status of Primary school, 45% had Middle school education, 40% of them studied up to High school and only 8% studied PUC and Degree. With regards to the occupation majority of the group's occupation was Agriculture 53.75%, followed by Dependants 25%, 12.5% were Employed (Private or Govt) and only 8.75% were involved in Business. With regards to family income. Out of 80 adults, 20% has a monthly income of below 2500 rupees, 45% has between 2501-5000 rupees, 25% has between 5001-10000 rupees and only 10% has above 10000 rupees. According to the marital status 57.5% of adults were married, 30% were unmarried, 45% were widow /widower and 12.5% were separated from the spouse. With regards to the area of living42.5% of adults were living in urban areas whereas 57.5 were living in rural areas.

According to the food habits It reveals that majority of adults were non-vegetarian 85% and 15% were vegetarian. With regards to hospitalized due to hypertension shows that 70% of adults were hospitalized due to hypertension symptoms and 30% were not hospitalized due to hypertension. With regards to sources of

information shows that majority of 57.5% adults were gaining knowledge about hypertension from television, 5 % were obtaining information from health canters, 20% were getting information from newspapers and 18% were using internet for the information.

Table 2-Assessment of Knowledge and Practice of adults

Table 2.1- Mean, Standard deviation, range and mean score percentage of knowledge of adults.

Sl. No	Knowledge	Max Possible Score	Mean	SD	Range	Mean score%
1	General information	10	4.65	2.41	9	46.5
2	Causes/Trigger factor	5	2.51	1.57	5	50.2
3	Signs & Symptoms and Diagnosis	5	1.83	1.68	5	50.2
4	Management, Prevention and Control of hypertension	10	3.86	2.69	10	46.5
	Overall Knowledge	**30**	**12.85**	**6.82**	**23**	**42.83**

Table 2.1: Shows that knowledge of adults on control measures of hypertension was determined with mean of 12.85 and standard deviation of 6.82. The maximum possible score is 30. The subject's range was found 23. The mean score percentage was computed and it was observed as 42.83. **It shows that the selected adults have inadequate knowledge on control measures of hypertension.**

Table 2.2 Mean, Standard deviation, range and mean score percentage of practice of adults.

Sl. No	Subjects	Max Possible Score	Mean	SD	Range	Mean score%
1	Practice	25	10.8	5.66	20	43.2

Above table 2.2 shows, the mean, standard deviation, range and mean score percentage of practice of adults on control measures of hypertension. The maximum possible score was 25. The mean score was 10.8 with standard deviation 5.66 and range 20. The mean score percentage was 43.2. **This shows that adult's practices regarding control of hypertension were found to be poor.**

Table 2.3 Frequency and percentage distribution of knowledge level of adults

Grading	Score (%)	Knowledge	
		Frequency (80)	%
Poor	0-40	48	60
Average	41-70	22	27.5
Good	71-100	10	12.5

The findings of the study depict 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 has good knowledge.

Table 2.4 Frequency and percentage distribution of Practice level of adults

Grading	Score (%)	Knowledge	
		Frequency (80)	%
Inadequate	0-40	43	53.75
Average	41-70	25	31.25
Adequate	71-100	12	15

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 3: Relation between knowledge and practice of adults.

Table 3.1 Correlation between knowledge and practice of adults

Sl. No	Subjects	Max Possible Score	Correlation coefficient r	P-value
1	Knowledge	30	0.933	Sig, 0.01
2	Practice	25		

The above table 3.1 shows the outcome of the correlation analysis, which has been attempted to determine the relationship between knowledge and practice. The linear correlation between overall knowledge and practice was r = 0.933, which was statistically significant at 0.01 level.

It confirms that adult's knowledge and practice were statistically related i.e., higher the knowledge better would be the practice.

Table4 (a) Association between socio-demographic characteristics and Knowledge of adults

Sl. No	Characteristics	Chi-square value	Df	P-Value	Result
1	Age	1.71	3	0.05	Significant
2	Gender	3.52	1	0.05	Significant
3	Educational status	11.8	3	0.008	HS
4	Occupation	10.39	3	0.015	Significant
5	Family income	2.97	3	0.39	NS
6	Marital status	4.56	1	0.03	Significant
7	Area of living	1.7	1	0.19	NS
8	Food habits	0.21	1	0.65	NS
9	Hospitalization due to hypertension	10.49	3	0.015	Significant
10	Sources of information	7.77	3	0.20	NS

Table 4 (a) shows association between demographic characteristics and knowledge of adult there is a significant association between age, gender, occupation, marital status, area of livingand knowledge of adults and also highly significant association between educational status and knowledge of adult.

Association between socio-demographic characteristics and Practice of adults

Sl. No	Characteristics	Chi-square value	Df	P-Value	Result
1	Age	10.56	3	0.01	Significant
2	Gender	1.74	1	0.018	Significant
3	Educational status	9.14	3	0.02	HS
4	Occupation	3.1	3	0.37	NS
5	Family income	9.95	3	0.018	Significant
6	Marital status	4.29	1	0.03	Significant
7	Area of living	0.49	1	0.48	NS
8	Food habits	0.49	1	0.49	NS
9	Hospitalization due to hypertension	11.48	3	0.009	HS
10	Sources of information	2.28	3	0.92	NS

NS – Not significant at 5% level (i.e., P > 0.05)
HS – Highly significant at 5% level (i.e., P > 0.05)

Table 4 (a) shows association between demographic characteristics and practice of adult there is a significant association between age, gender, marital status, family income, area of living and knowledge of adults and also highly significant association between educational status, Hospitalization due to hypertension, and knowledge of adult.

DISCUSSION:

Assessment of knowledge and practice of adults

➢ The findings of the study 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 has good knowledge.

➢ Assessment of level of practice of adults 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 measures of hypertension.

➢ The overall knowledge of adults was, mean 12.85, standard deviation 6.82 and range 23 and mean score percentage was 42.83%.

➢ The overall practice of adults was, mean 10.8 and standard deviation 5.66 and range 20. Mean score percentage was 43.2%.

Pierin A.M, et al; (2011) Conducted a study to characterize blood pressure control of 440 hypertensive adults. The subjects were interviewed and had their blood pressure measurement by means of an automatic device. The results showed that 45.5% had an adequate blood pressure control. People under control were different (p<0.05) from those without control: the ones under 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. The study revealed that, Blood pressure control was associated with biological variables, behaviour and information about hypertension as a risk factor and its treatment.

Findings of relation between knowledge and practice of adults on control measures of hypertension

The linear correlation between overall knowledge and practice was $r = 0.933$, which was statistically significant at 0.01 level. It confirms that adult's knowledge and practice were statistically related i.e., higher the knowledge better would be the practice.

Dawes. MG, et al ;(2010) Conducted a study to determine the effect of a patient education booklet and BP 'tracker' on knowledge about hypertension. Single-blind randomized control trial on patients with raised BP. Three practices in Ontario, Quebec and Nova Scotia recruited a total of 09 eligible patients. The average age was 66.1 (SD 9.3) years and 58 (54.7%) were male. The study shown that, most patients have a good baseline of knowledge about hypertension but there are still important areas that need to be addressed. The booklet and tracker were well received by patients but the simple leaflet was as effective at improving knowledge

Findings related to association between knowledge and practice of adults with selected demographic variables.

➢ The chi-square test value reveals that there is a highly significant association between the knowledge and practice with educational status, history of hospitalization of the adults.

➢ There was a significant association between knowledge and practice of adults with age, gender, area of living, of samples.

➢ There is a significant association between family income and practice of adults whereas no significant association was found between knowledge and family income.

➢ There was no significant association found between knowledge and practice of adults with food habits.

A study was conducted to assess the knowledge of adults on control measures of hypertension. The study findings have shown that knowledge and practice was associated with the educational level (higher > Primary; p= 0.001). Information and education thus remain a priority in the control of hypertension.

Conclusion: The overall mean score percentage of knowledge is 42.83 and overall mean score percentage of practice is 43.20. By the current study researcher concludes that the selected adult's knowledge and practice regarding control measures of hypertension was inadequate.

Recommendations:

➢ The study can be replicated on a larger sample; thereby findings can be generalized for a larger population.

➢ A Structured Teaching Programme can be prepared to enhance the knowledge and practice of adults regarding control of hypertension.

➢ Similar study can be conducted in children to evaluate effective self-management thereby enhancing hypertension control and management.

➢ Regular educational Programmes can be conducted for adults and risk group avoidance of trigger factors, monitoring of BP and use of hypertension medications, thereby ensuring an active live for hypertensive adult.

Conflict of interest: No

Financial support: Self

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