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Original ARTICLE

AN EPIDEMIOLOGICAL STUDY REGARDING KNOWLEDGE, ATTITUDES AND PRACTICES OF KNOWN HYPERTENSIVES IN RURAL AMRITSAR.

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ABSTRACT

Introduction: According to WHO, hypertension is the third 'killer' disease, accounting for one in every eight deaths worldwide and the number is expected to rise from 118 million in 2000 to 214 million in 2025. Most of studies on hypertension have been conducted in urban areas with little information available from rural settings. So this study was designed to assess the knowledge, attitudes and practices of known hypertensives. **Material and Methods:** A cross-sectional study was conducted in the rural field practice area where out of 315 cases of hypertension registered in records being maintained at Rural Health Centre were cross-referred with the quarterly report, 290 were enrolled. The information was gathered by personal interview using pretested semi-structured proforma. **Results:** Out of 290 subjects, Most of them had good knowledge related to causes of hypertension as 94.1% and 88.3% patients knew that hypertension was related with high salt intake and excessive fatty food consumption respectively. However, positive attitudes and appropriate practices for hypertension and healthy lifestyles were found in smaller proportions as majority 203 (70%) of the patients got their blood pressure checked when they felt need, 166 (57.2%) had uncontrolled hypertension. On univariate analysis, decreased salt intake, decreased fatty food consumption, physical activity, stress management and regular medication were identified as significant factors affecting hypertension. **Conclusion:** Hypertension is a major public health problem among rural population and appropriate intervention strategies were needed for prevention and control of hypertension.

Keywords: Known Hypertensives, KAP study, Rural Amritsar, cross sectional study.

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INTRODUCTION

Hypertension (HTN) is one of the most common cardiovascular diseases with a prevalence ranging from 10 to 20% among adult population.¹ Subjects with hypertension had two fold higher risk of developing coronary artery disease (CAD), four times higher risk of congestive heart failure and seven times higher risk of cerebrovascular diseases (CVD) as compared to normotensive subjects.^{2,3} According to WHO, hypertension is the third 'killer' disease, accounting for one in every eight deaths worldwide and the number is expected to rise from 118 million in 2000 to 214 million in 2025.⁴ Hypertension can be classified

as either primary (essential) or secondary. Over 90% of all cases of hypertension are primary hypertension, with no obvious identifiable cause, although there are recognizable risk factors. The remaining 10% of cases are usually secondary hypertension, and this is hypertension that results from other diseases present in the body such as kidney disease, cardiovascular diseases (CVD), coronary heart diseases, etc. Although the exact cause of primary hypertension is unknown, there are several risk factors that have been associated with the condition. Most of studies on hypertension have been conducted in urban areas with very little data available from rural settings. Also cases of hypertension

living in rural area don't have as good access as urban population does to good quality health care management of chronic diseases due to multiple factors like poverty, lack of education, lack of awareness, socio-cultural factors etc. Thus this study was formulated to assess the knowledge, attitudes and practices of known hypertensives in an effort to fill the gaps in information in rural area.

IMATERIALS AND METHODS

The study was conducted in the field practice area under Rural Health and Training Center (RHC) composed of 11 villages having total population of 25, 771 attached to Department of Community Medicine, Sri Guru Ram Das Institute of Medical Sciences and Research, Amritsar located within radius of 30 kms. It was a cross sectional study. Total of 315 cases of hypertension were registered in records being maintained at Rural Health Centre, Mallunangal which were cross-referred with the quarterly report for the quarter October-December 2013 after which study was commenced from 1st January 2014 to 31st December 2014. Subsequently, residential address of these patients was taken from the family folders being maintained at Rural Health Centre. House to house visits were made to homes of these cases of hypertension for the purpose of study. During home visits, if any patient was not found during the visit then he/she was contacted again at his/her home by paying the next visit. A total of 290 hypertensive cases were enrolled for the study and remaining 25 cases were excluded. **Inclusion criteria:** All the known cases of hypertension, those willing to participate and the cases available during data collection. **Exclusion criteria:** Pregnant women,

refusal to participate and cases not available during data collection due to change of place or death. **Period of Study:** 1st January 2014 to 31st December 2014.

Method of Data Collection

The informed consent of the hypertensive patients to participate in the study was taken. The information was collected from patients using a structured and pretested proforma. During collection of general information regarding socio-demographic characteristics the Modified Udai Pareek scale was used to estimate the socio-economic status.⁵ Height, Weight and Blood pressure were measured by using appropriate technique.⁶ According to JNC 8 classification, blood pressure > 140/90 mm of Hg for up to 60 years of age and >150/90 mm of Hg for 60 years and above were taken as uncontrolled hypertension and less than that will be taken as controlled cases of hypertension.⁷ The data was entered manually in Microsoft excel 2007 version and then transferred to SPSS Software 20.0 version (Statistical package for social sciences IBM Chicago) spread sheet. The statistical tests wherever applicable were applied and valid conclusions were drawn.

RESULTS

Figure no. 1 shows that majority of patients 155 (53.4%) were above the age of 60 years, there were higher number of females (70.3%) as compared to males (29.7%), 229 (79%) subjects were from socio-economic class III, IV. Most of patients 181 (62.4%) were illiterate, 151 (52%) belonged scheduled caste, scheduled tribe or other backward class. Going by their religion, 277 (95.52%) were Sikhs, 239 (82.41%) belonged to joint families and 224 (77.24%) were married.

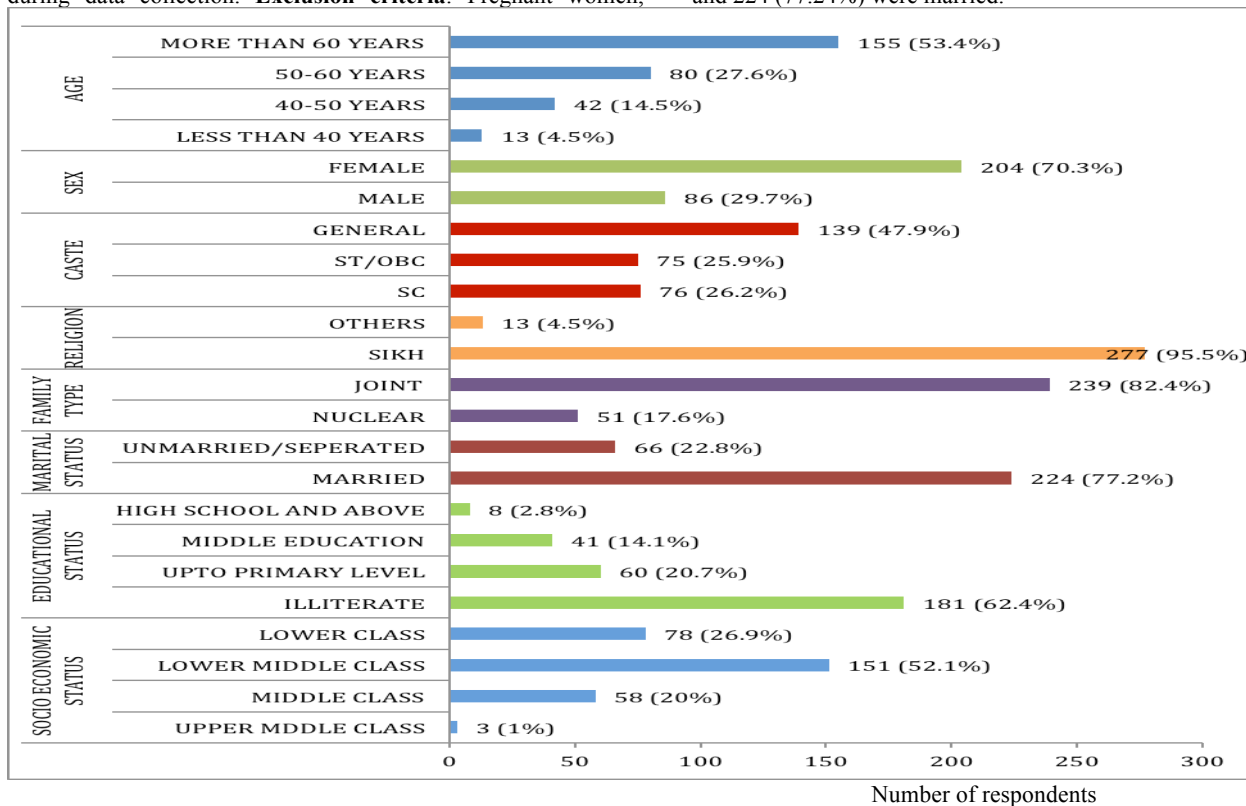


Figure 1: Distribution of hypertensives according to their socio demographic features

Modified udai pareek scale was used for socioeconomic status

Table no. 1: Knowledge of hypertensive patients

Parameters		n=290 No.	100% %age
Time since diagnosis	< 5 years	49	16.9
	> 5 years	241	83.1
Regarding complications of uncontrolled blood pressure	Yes	57	19.7
	No	233	80.3
Symptoms at time of diagnosis*	No symptoms	7	2.4
	Headache	248	85.5
	Anxiety/ ghabrahat	168	57.9
	Chest pain	50	17.2
	Dizziness	60	20.7
	Others	41	14.1
Regarding causes of hypertension*	High salt intake	273	94.1
	Excessive fatty food consumption	256	88.3
	Family history	121	41.7
	Obesity	119	41
	Excessive smoking	22	7.6
	Excessive alcohol consumption	80	27.6
	Past deeds	119	41

***Multiple answers given by patients**

Table No. 1 illustrates that 241 (83.1%) were diagnosed more than 5 years back. It also depicted that 248 (85.5%) had headache as a symptom at the time of diagnosis followed by anxiety in 168 (57.9%) patients, chest pain in 50 (17.2%) patients and very few 41 (14.1%) patients suffered from other symptoms e.g. blurred

vision, shortness of breath & nosebleeds. It also showed that 273 (94.1%) of subjects knew that high salt intake would lead to hypertension followed by 256 (88.3%) subjects who knew that excessive fatty food consumption caused hypertension. However, 119 (41%) subjects related high blood pressure with past deeds.

Table no. 2: Attitude of hypertensive patients

Parameters		n=290 No.	(100%) %age
Attitude regarding control of hypertension	Oral therapy whenever symptomatic	160	55.2
	Injections whenever symptomatic	10	3.4
	Oral therapy regular	107	36.9
	Taking alternate medicine	13	4.5
Usual frequency of blood pressure check up	Usually as recommended	72	24.8
	Whenever they feel the need	203	70
	Don't go for check up	15	5.2

Table no.2 shows that 160 (55.2%) respondents perceived that oral medication whenever required is effective in controlling symptoms of hypertension whereas 3.4% will resort to injectable means in order to curb symptoms of hypertension whereas 36.9%

felt that regular medication is effective in control of hypertension. 70 % respondents perceived that blood pressure should be checked whenever they felt the need whereas 24.8% felt that blood pressure should be checked as recommended by practitioner with whom they consult.

Table no. 3: Practices of hypertensive patients

Parameters		No.	% age
Status of hypertension	Controlled	124	42.8
	Uncontrolled	166	57.2
	Total	290	100
Efforts made for controlling BP	Yes	240	82.8
	No	50	17.2
	Total	290	100.0
Measures taken to control BP*	Decreased salt intake	235	97.9
	Decreased fatty food	212	88.3
	Physical exercises/yoga	125	52.1
	Decreased alcohol consumption	18	7.5
	Stress management	154	64.2
	Spiritual help	52	21.7
Adherence to medication	Consumption of salads & fruits	17	7.1
	Regular	107	36.9
	Irregular	183	63.1
Reasons for non adherence	Total	290	100
	Costly	23	12.6
	Don't feel the need	151	82.5
	Others	9	4.9
BP record maintenance	Total	183	100
	Yes	87	30
	No	203	70
Method of BP record maintenance	Total	290	100
	Personal log book	19	21.8
	Prescription slips/ medical records	68	78.2
	Total	87	100

*Out of 240 patients who made effort, multiple answers given by patients

Table no.3 shows that out of 290 known hypertensives, 124 (42.8%) had controlled and 166 (57.2%) had uncontrolled hypertension. About 240 (82.8%) made lifestyle modification apart from taking medications whereas 50 (17.2 %) didn't comply to any life style modification. Amongst 240 respondents who took measures to control blood pressure, 97.9% patients made efforts to control salt intake, 88.3% decreased fatty food intake, 64.2% adopted measures to manage stress, 52.1% did physical exercise/yoga, and 21.7% seek spiritual help. Out of total 290, (183) 63.1% took irregular medication and only 30% maintained blood pressure record. Out of 87 (30%) hypertensives who maintained record, 68 (78.2%) maintained record through prescription slips while 19 (21.8%) maintained personal log book. Table No. 4 shows that there were 6 correct statements and 4 incorrect statements regarding the knowledge of hypertension. The correct statements comprised of high salt intake, high fatty food consumption, family history of hypertension, obesity, excessive smoking and excessive alcohol consumption and incorrect statements were past deeds, high sugar intake, accidents and others. There were 122 (98.4%) controlled and 151 (91%) uncontrolled hypertensives who had correct knowledge regarding relation of high salt intake and there were 117 (94.4%) controlled and 139 (83.7%) uncontrolled hypertensives who had correct knowledge regarding relation of excessive consumption with hypertension. However, 75 (60.5%) controlled and 46 (27.7%) uncontrolled hypertensives had correct knowledge regarding relation of family history with hypertension. While 71 (57.3%) controlled and 48 (28.9%) uncontrolled had correct knowledge regarding relation of obesity with hypertension. The difference

was highly significant. About 10 (8%) controlled and 12 (7.2%) uncontrolled had correct knowledge regarding relation of smoking with hypertension. While 35 (28.2%) controlled and 45 (27.1%) uncontrolled had correct knowledge regarding relation of alcohol with hypertension. The difference regarding knowledge of salt intake, excessive fatty food consumption, family history of hypertension and obesity was highly significant and regarding excessive smoking and excessive alcohol consumption was found insignificant statistically. However, 42 (33.9%) controlled and 77 (46.4%) uncontrolled had incorrect knowledge regarding relation of past deeds with hypertension and the difference was significant statistically while 14 (11.3%) controlled and 26 (15.7%) uncontrolled had incorrect knowledge regarding relation of high sugar intake with hypertension.

DISCUSSION

Until recently, hypertension was considered to be one of the most important public health problems in the developed countries only. In the developing countries, its impact was not fully realised due to presence of communicable diseases. However, with control of the communicable diseases and increasing life expectancy with sedentary lifestyle, hypertension is becoming one of the emerging problems with its implications for concomitant increase in risk of Similarly study conducted in 2009 among hypertensive patients by Iyalomhe GBS, Iyalomhe SI stated that 40% patients had headache as prominent symptom, 38.9% felt it was restlessness, dizziness and palpitation.¹⁰ In our study, 94.1% of subjects knew that high salt intake was associated with hypertension followed by 88.3% related with excessive fatty food consumption and 41%

Table No. 4: Distribution of hypertensives showing relation of knowledge with status of hypertension.

Knowledge regarding correct statements of hypertension		Status of hypertension				Statistical values		
Statements about hypertension		Controlled		Uncontrolled		X²	Df	p value
		No.	%age	No.	%age			
High salt intake								
Yes		122	98.4	151	91.0	7.088	1	0.008 (s)
No		02	1.6	15	9.0			
Total		124	100.0	166	100.0			
High fatty food consumption								
Yes		117	94.4	139	83.7	7.735	1	0.005 (s)
No		07	5.6	27	16.3			
Total		124	100.0	166	100.0			
Family history of hypertension								
Yes		75	60.5	46	27.7	31.354	1	0.000(s)
No		49	39.5	120	72.3			
Total		124	100.0	166	100.0			
Obesity								
Yes		71	57.3	48	28.9	23.564	1	0.000(s)
No		53	42.7	118	71.1			
Total		124	100.0	166	100.0			
Excessive smoking								
Yes		10	8.0	12	7.2	0.071	1	0.790
No		114	92.0	154	92.8			
Total		124	100.0	166	100.0			
Excessive alcohol consumption								
Yes		35	28.2	45	27.1	0.044	1	0.833
No		89	71.8	121	72.9			
Total		124	100.0	166	100.0			
Knowledge regarding incorrect statements of hypertension								
Past deeds								
Yes		42	33.9	77	46.4	4.594	1	0.032
No		82	66.1	89	53.6			
Total		124	100.0	166	100.0			
High sugar intake								
Yes		14	11.3	26	15.7	1.141	1	0.285
No		110	88.7	140	84.3			
Total		124	100.0	166	100.0			

cardiovascular and renal disease. In present study, majority 155 (53.4%) of participants were above the age group of 60 years. Another study conducted in rural Korea showed that 68.18% of patients were above 60 years of age.⁸ However, recent study done

in Punjab reported frequency of high BP significantly increased with age more than 50 years.⁹ Regarding knowledge, 83.1% were diagnosed more than 5 years back. Present study showed that 85.5% had headache as a symptom at the time of diagnosis followed by anxiety/

restlessness in 57.9% patients, chest pain in 17.2% patients. related with obesity, 41.7% related family history and 41% related past deeds with hypertension and only 19.7% had knowledge about complications. Similarly cross-sectional study conducted in Kenya observed that around 96% knew that salt and obesity were associated with hypertension.¹¹ A study conducted in Ghana observed regarding knowledge of risk factors that about 72.8% related hypertension with salt intake, 73.8% related it with stress, 54.2% related with obesity, 32% related hypertension with family history and 27% related physical activity with hypertension. The main signs and symptoms of the condition specifically mentioned by the participants were headaches or dizziness and stroke.¹² However, study carried out on diagnosed hypertensive patients in Pakistan reported that 76% patients could tell that salt was not good for hypertension while 6% had knowledge about complications.¹³ The study done among known hypertensives in 2013 at Karnataka reported that about 75.6 % patients could tell that salt is not good for hypertension and only 10% had knowledge about complications.¹⁴ Our study showed that 55.2% respondents perceived that oral medication whenever required is effective in controlling symptoms of hypertension. However, 70 % respondents perceived that blood pressure should be checked whenever they felt the need. Out of 290 known hypertensives, 42.8% had controlled hypertension while 57.2% had uncontrolled hypertension. However, 82.8% made lifestyle modification apart from taking medications. Amongst 240 respondents who took measures to control blood pressure, 97.9% patients made efforts to control salt intake, 88.3% decreased fatty food intake, 64.2% adopted measures to manage stress, 52.1% did physical exercise/yoga, and 21.7% seek spiritual help. Out of total respondents, 63.1% were non adherent to medication and only 30% maintained blood pressure record. Out of 87 hypertensives who maintained record, 78.2% maintained record through prescription slips while 21.8% maintained personal log book. A study done in 2009 among hypertensive patients in Nigeria observed that 66.7% were not adherent to medication. However, 51.9% took their drugs regularly while 48% took drugs only when they had symptoms.¹⁰ Another study conducted by Omuemu VO observed that 77.3% were on treatment and only 29.4% had adequate blood pressure control. About 47.1% patients took their treatment regularly while 52.9% took it irregularly. The various reasons for not taking treatment regularly were lack of funds in 77.8%, high cost in 66%, side effects in 33.3%, forgetfulness in 22.2% and difficulty in swallowing in 11.1% .¹⁵ Similar study done among hypertensives in 2011 at Nepal showed that 33.3% had controlled blood pressure while 66.7% had uncontrolled blood pressure. Among uncontrolled patients, 17.34% were adherent to therapy.¹⁶ A study was conducted in rural population of Bangalore in 2008-2009 stated that out of the total hypertensive patients, only 47.11% had their blood pressure under control and 31.7% had made some life style Modifications and dietary modifications.¹⁷ A study conducted in Assam stated that majority of patients i.e. 93.42% were under treatment while only 13.38% of the hypertensives undergoing treatment were under control.¹⁸ Another study conducted in rural population of Assam showed that 50.4% of the subjects on treatment had uncontrolled and severe hypertension.¹⁹ The study was conducted from 2008-09 in Andhra Pradesh showed that statistically significant association was found between the risk factors (age, socio economic status, physical activity, smoking, high salt intake, high fat intake, body mass index, waist hip ratio, psychosocial factors & positive

family history) and hypertension in rural areas. However no association was found between other risk factors (sex, literacy & alcohol intake) and hypertension in rural areas.²⁰ Another study done in Sultanpur Lodhi, Kapurthala stated the frequency of high BP significantly increased with unemployment status ($p<0.001$) and low education levels ($p<0.001$). An association of high blood pressure with sedentary lifestyle, alcohol, positive family history, stress, non-vegetarian dietary habits, increased BMI and medications misuse was found.²¹

CONCLUSION

Although being aware of fact that hypertension can be controlled by lifestyle modifications but sincere efforts on part of individual are not put into effect which ultimately leads the respondent succumbing to disease. Majority of hypertensive patients 57.2% had uncontrolled hypertension. Co-morbidities were present in 25.5% of total hypertensives. As there is lack of awareness and laxity in treatment behavior, resulting in people approaching to chemist or non registered practitioner for symptomatic relief and they don't adhere to proper medications. Predominance features like didn't feel the need to take medications, didn't go for regular check up and didn't maintain record depicted their laxity in attitude and lack of awareness towards disease. Also no health awareness was provided to patients by health workers like ASHA (accredited social health activist) and ANM (auxiliary nurse midwifery) in the field.

LIMITATIONS OF STUDY

1. As all known hypertensives who came to primary health care center where included whereas majority of people don't seek any medical help for symptoms which are related to hypertension.
2. We do recommend lifestyle modifications along with medications but individual effect of both of these can't be assessed. So we have to rely on previous literature when due weightage is given to both of these aspects.

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