

# Awareness and Knowledge on Hypertension and its Self-Care Practices among Hypertensive Patients in Saudi Arabia.

Lama A. Bakhsh<sup>1</sup>, Alshimaa A. Adas<sup>1</sup>, Maradi A. Murad<sup>1</sup>, Rana M. Nourah<sup>1</sup>, Sulaiman A. Hanbazazah<sup>1</sup>, Aseel A. Aljahdali<sup>1</sup>, Reem J. Alshareef<sup>1</sup>

<sup>1</sup>Faculty of medicine, King Abdulaziz University, Jeddah, Saudi Arabia.

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## ABSTRACT

**Background:** Hypertension is a prevalent health problem in Saudi Arabia. It is a major risk factor of morbidity and mortality worldwide. Untreated hypertension can lead to serious and life threatening complications. Prevention of hypertension has a significant role in controlling the disease, which can be achieved by increasing the awareness in the community and changing their attitude and practices towards it. Aim: to assess knowledge, awareness and self-care practices of hypertension among hypertensive patients. **Methods:** A cross-sectional study was conducted at the Out-Patient Department (OPD) of King Abdulaziz University Hospital (KAUH) in Jeddah, Saudi Arabia. All confirmed cases of hypertension were interviewed using a pre-tested, semi-structured questionnaire. **Results:** The awareness level about hypertension was high in majority of cases (72.6%) and knowledge level was average in 54.7% of patients. While self-care practices level was below average 74.4% of participants. Awareness, Knowledge and self-management practices were found to be significantly poor among old age groups (above 50 years), males and less educated patients. **Conclusion:** Though there was adequate general knowledge and awareness on hypertension among hypertensive patients, but uncontrolled blood pressure (BP) and poor self-care practices were major findings among the studied population. There is a need to establish programs that increase community awareness regarding long term complications of uncontrolled hypertension and proper practices to control blood pressure so that it improves self-care practices and BP monitoring among hypertensive patients.

**Keywords:** Awareness, Blood Pressure, Hypertension, knowledge.

## INTRODUCTION

Hypertension (HTN) is a major risk factor for morbidity and mortality.<sup>[1]</sup> Although it is a preventable and usually treatable disease but uncontrolled hypertension can lead to many serious and life threatening complications such as heart, kidney and brain diseases which in most cases result in patient's disability.<sup>[2,3]</sup> Hypertension has a significant economic impact ranging from medical costs to human capital loss and decrease in productivity.<sup>[5,6]</sup>

Global analysis showed that the number of people with uncontrolled hypertension (>140/90 mm of Hg) increased from 600 million in 1980 to nearly 1 billion in 2008 and this number is expected to rise to

1.56 billion by 2025, which means 29% of the world adult population will have hypertension.<sup>[7]</sup> This serious increase in the incidence of hypertension is significantly associated with a combination of many factors, including family history,<sup>[8]</sup> lifestyle, dietary habits and environmental factors.<sup>[9]</sup>

In Saudi Arabia, hypertension is increasing in prevalence affecting more than one fourth of the Saudi population.<sup>[10-14]</sup> This increase is attributed to several factors such as lifestyle change in Saudi Arabia towards urbanization, unhealthy dietary habits, and obesity. Epidemiological studies worldwide has shown that increased awareness, follow up and control of HTN has resulted in a decreased tendency to morbidity and mortality from cardiovascular disease among hypertensive patients.<sup>[15]</sup> To achieve better level of improvement in patients' awareness, compliance and blood pressure control, community-based studies on the risk factors, control methods, control levels, lifestyle, adherence to medication, and awareness will be crucial for setting effective control strategies in Saudi Arabia.

In this study we assessed awareness, knowledge and self-care practices of hypertension among

### Name & Address of Corresponding Author

Dr. Lama Adil Bakhsh  
Faculty of Medicine,  
King Abdulaziz University,  
Jeddah,  
Saudi Arabia.

hypertensive patients attending cardiology clinic in a tertiary health care center in Saudi Arabia.

## MATERIALS AND METHODS

A cross-sectional, descriptive study was conducted in the cardiology Out-Patient Department (OPD) of King Abdulaziz University Hospital (KAUH) in Jeddah, Saudi Arabia, over one-month period, from 15th October to 14th November 2016. A total of 211 (127 male and 84 female) hypertensive patients were included in the study. All Participants were interviewed using a semi-structured, pre-tested questionnaire. Questionnaire was divided into 3 parts. First part comprised questions regarding socio-demographic information (i.e. age, sex, ethnicity, marital status, family members, education, monthly income, co-morbidities, family history of hypertension, medication history, physical activity, diet, and life style factors e.g. smoking and alcohol intake). Second part consisted of closed-end questions about three aspects including patients' awareness, knowledge, and attitude towards hypertension. Last part was dealing with self-care practices to control and monitor hypertension. Four point Likert scale was used for scoring each question and total score of the questionnaire was 100. It was categorized and valued as weak ( $0 < \text{score} < 25$ ), moderate ( $25 < \text{score} < 50$ ), good ( $51 < \text{score} < 75$ ) and very good ( $76 < \text{score} < 100$ ). All patients who were willing to participate in the study filled out the questionnaire. It was verbally translated to Arabic language to ensure that all patients fully understand each question. A pilot study was conducted on 10 patients - different from the target group - to check the understanding and clarity of the questions.

A patient was considered as hypertensive if he has BP  $> 140/90$  mmHg or a lower BP on anti-hypertensive drugs or previously diagnosed by health care workers. For the purpose of measuring blood pressure, we used a standard manual mercury column sphygmomanometer and Litman stethoscope. The reliability of blood pressure apparatus was determined by comparing its results with another device. For its calibration all blood pressure measurements were scaled by one system and researcher.

Only patients aged 18 and above and previously diagnosed with hypertension for duration of at least six months or on antihypertensive medications were included in the study. Patients who aged below 18 and pregnant women and patients presenting with complications of hypertension like stroke, cerebrovascular accidents etc. and patients presenting with co morbidities like diabetes mellitus and renal failure were excluded from the population. All participants provided a written informed consent. The study was approved by ethical committee of King Abdulaziz University. Statistical analysis of the data was done using SPSS version 20.0. Descriptive statistics i.e.

mean  $\pm$  standard deviation for numerical values and frequencies along with percentages for categorical variables were used to describe the data. A p-value of  $<0.05$  was considered statistically significant.

## RESULTS

Socio-demographic characteristics of the participants A total of 211 hypertensive patients were studied, 127 (60.2%) patients were males and 84 (39.8%) were female. Table 1 shows the socio-demographic characteristics of the participants. The age group of the studied population ranges from 20 to 80 years with a mean of 51.8 years and standard deviation of  $\pm 18.7$  years. The mean systolic and diastolic blood pressure was  $146.31 \pm 12.62$  mmHg and  $85.39 \pm 13.81$  mmHg respectively. The average period of diagnosed hypertension among the studied patients was  $5 \pm 7.16$  years. Sixty-six (31.3%) hypertensive patients were current smokers. Only 49 (23.2%) patients reported regular practice of physical exercise. Almost one third of them were illiterate 36 (17%) and 80 (38%) were university graduate. Twenty-nine patients were governmental employee (13.7%). The average monthly income of participants was  $5000 \text{ SR} \pm 210$ .

Blood pressure was controlled ( $\leq 140/90$  mmHg) among 119 (56.4%) hypertensive patients and uncontrolled ( $>140/90$  mmHg) among 92 (43.6%) patients. Number of blood pressure follow-ups over the last year was 6-3 times. Number of antihypertensive drugs that patients used was 4-2 drugs. The commonest antihypertensive drugs that were used by patients were; ACEI 107 (50.7%), diuretics 86 (40.8%), Beta-blockers 70 (33.2%).

Awareness and knowledge about hypertension among participants

More than half of the participants believed that hypertension is a dangerous disease and 83.7% agreed that controlling blood pressure can prevent complications of the disease and improve person's health. More than 30% of patients knew the meaning of hypertension and 67.5% knew the target blood pressure level that indicates good control.

Most commonly known risk factors of hypertension by the participants were; obesity, dietary habits (i.e. high salt intake), and stress, it was known to 177 (83.9%), 137 (64.9%), and 124 (58.8%) patients, respectively. Awareness of hypertension complications was 70.3%. Heart attack and stroke as a complications of uncontrolled hypertension were recognized by 114 (68.2%) and 81 (38.4%) participants, respectively.

Awareness level about hypertension was high (score  $> 76$ ) in majority of patients (72.6%) with mean of 78.9 (SD = 16.34). While knowledge level of HTN was moderate ( $26 < \text{score} < 50$ ) in 54.7% of patients with mean of 58.30 (SD = 15.21).

It was observed that patients with higher educational level showed better knowledge of hypertension than

comparatively less educated patients. Awareness level of hypertension was found to be significantly better among younger age groups (50 years and below) ( $p=0.002$ ), females ( $p=0.003$ ) and patients with family history of hypertension ( $p=0.0001$ ). In addition, a significant relation was observed between duration of the disease and knowledge score ( $p < 0.05$ )

Self-care practices carried out by the sample population

The most common reported practices that were carried out by patients to control their blood pressure were taking medications (83.7%), low salt diet (79.3%), exercise (57.3%), stress control (55.7%), weight loss (59.9%) and quitting smoking (31.2%).

Thirty-eight percent of the participants claimed that they visit a doctor or health care provider monthly for BP checkup while most of the patients, 74(53%), go for checkup every 3-6 months and 11(5.2%) visit their doctors every 12 months.

Good compliance with treatment was reported by 46.7% of patients. The compliance rate among participants was observed to be significantly better among patients who knew about the importance of compliance to prevent complications and control the disease, than those were not aware of its importance. One hundred and twenty seven (60.2%) patients do not have a sphygmomanometer at home while about 19.8% reported monitoring their blood pressure with their own sphygmomanometer weekly, with mean frequency of BP monitoring a week of 5.4 (SD=8.17).

Overall self-care practices score of hypertension was moderate ( $25 < \text{score} < 50$ ) in 157 (74.4%) patients with mean of 67.3 (SD = 11.25). The scores of Self-care practices were found to decrease with increasing age of the participants (above 50 years), among males and less educated participants. Patients who have a better socioeconomic status were seen to carry out more self-care practices compared to people with low monthly income.

There was a significant relationship between awareness and practice ( $P < 0.05$ ). In addition, there was a significant relation between knowledge and practice ( $P < 0.05$ ). These findings are summarized in [Table 2].

**Table 1: Socio-demographics characteristics of the participants.**

Variable	No.	Percent (%)
<b>Sex</b>		
Male	127	60.2%
Female	84	39.8%
<b>Age</b>		
18 - 30	66	31.3%
31 - 50	107	50.7%
> 50	38	18%
<b>Nationality</b>		
Saudi	133	63%
Non-Saudi	78	37%
<b>Marital status</b>		
Single	19	9%

Married	137	65%
Divorced	11	5.2%
Widowed	44	20.8%
<b>Educational status</b>		
Illiterate	36	17%
Less than university	95	45%
University and higher	80	38%
<b>Monthly Income</b>		
<3000 SR	51	24.1%
3000-5000 SR	78	37%
5000-10000 SR	60	28.4%
>10000 SR	22	10.4%
<b>Job</b>		
Employed	85	40.3%
retired	52	24.6%
Housewife	40	47.6%
Non-employed	34	16.1%
<b>Physical exercise</b>		
Yes	121	57.3%
No	90	42.6%

**Table 2. Correlation between Awareness, knowledge and practices about hypertension among hypertensive patients**

Variable	Awareness		Knowledge		Self-care Practices	
	p	r	p	r	p	r
Awareness	-	-	0.190	0.003	0.312	0.0001
Knowledge	0.190	0.003	-	-	0.404	0.0001
Practices	0.312	0.0001	0.404	0.0001	-	-

## DISCUSSION

The present study highlighted the fact that the knowledge and awareness level of hypertension among hypertensive patients were found to be satisfactory in more than half of the studied population. Similar findings were reported in other studies.<sup>[16-18]</sup> However, this study showed that the patients were not well educated about recently recommended guidelines, cutoff values of BP and proper practices to control BP. Consequently, our results revealed inadequate self-care practices of hypertensive patients towards their BP control.

It was reassuring to find that majority of the participants were aware of the seriousness of uncontrolled BP. More than half of the participants believed that hypertension is a dangerous disease and 83.7% agreed that controlling blood pressure can prevent complications of the disease and improve person's health. These findings are in line with the results of a study by Oliveria et al. and Bilal et al.<sup>[19]</sup> Most of the patients (67.5%) knew the target blood pressure level that indicates good control. This finding is similar to that of a study conducted on patients of Henry Ford Health System in Michigan.<sup>[19]</sup>

Awareness of risk factors of hypertension was better than the observations made in studies done in other parts of the world. For example; awareness of overweight as risk factor of hypertension was known

to more than 80% of participants, less numbers were observed in other studies.<sup>[21-23]</sup>

However, patient's awareness of dietary habit and stress as risk factors of hypertension was better in other studies done in Pakistan and Nigeria than in our study.<sup>[24,25]</sup>

Awareness of participants about hypertension complications in the present study was better than that observed in other studies. More than 70% of our sample population was aware of hypertension complications while it was only 65% in a study done in USA and 6% in a study done in Pakistan.<sup>[19,24]</sup> In addition, the awareness of target BP levels was better than that reported in studies done in other parts of the world where it ranged between 21% and 46%.<sup>[26-28]</sup>

The awareness level about hypertension in this study was found to be better among young age group which was similar to the observations made in other studies.<sup>[19,29,30]</sup> Also better awareness level was observed among participants with positive family history of hypertension, which was also observed in two other studies done in Pakistan and India.<sup>[24,31]</sup>

In the present study only 38% of the patients practiced regular check up of BP which was lower than that reported in a study done in India where 40% patients check their BP monthly. However, self-care practices carried out by participants in this study were better than that observed in several other studies done worldwide.<sup>[22,25,32]</sup>

The scores of Self-care practices in this study were found to decline with increasing age of the participants (above 50 years) similar to the observation of Nudrat et al. where patients above 65 years had less care of controlling BP.<sup>[33]</sup> But self-care practices were found to be significantly better among females, young patients, educated and patients who have a better socioeconomic status, which was also observed in a study done by Cutler et al.<sup>[34]</sup>

Good compliance with treatment was reported by 46.7% of patients in this study. A higher compliance rate was observed in a study done in India and a study done in Kuwait, where it was 78.7% and 88.6%, respectively.<sup>[31,35]</sup>

The compliance rate among participants was observed to be significantly better among educated patients as also found in a study done in India and a study done in Nigeria. But in a study done in Iraq compliance rate was observed to be significantly better among less educated participants.<sup>[36]</sup>

To the best of our knowledge, our study has comprehensively evaluated HTN knowledge and awareness among hypertensive patients along with their self-care practices involved in the management of high BP. However, there were a few limitations to our study. Most of the patients included in this study belonged to low socioeconomic status and had poor education. So the results cannot be generalized to the entire population. Secondly, this study does not have

information on the awareness and attitude of family members of patients towards hypertension. This is important as family members can play a key role in patient care. Lastly; our sample does not include those who were unstable to attend cardiology OPD.

## CONCLUSION

Though there was adequate general knowledge and awareness on hypertension among hypertensive patients, but uncontrolled blood pressure (BP) and poor self-care practices were major findings among the studied population. There is a need to establish programs that increase community awareness regarding long term complications of uncontrolled hypertension and proper practices to control blood pressure so that it improves self-care practices and BP monitoring among hypertensive patients.

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