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Awareness of Disease, Drugs, and Compliance among Hypertensive Patients Visiting two Major Hospitals in Northern Border Region of Saudi Arabia

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ABSTRACT

Context: Hypertension is one of the most common disorders in the world, and is associated with serious short and long term complications. Awareness of the disease, drugs and patient compliance to the treatment can contribute to prevent these complications.

Aim: To assess the knowledge and awareness of hypertensive patients about disease, drug, and compliance, in Arar, Kingdom of Saudi Arabia.

Settings and Design: Cross-sectional descriptive study.

Methods and Material: Data was collected using interviewer-administered questionnaire; constructed on the basis of Hypertension Knowledge Level Scale (HK-LS).

Statistical analysis: Descriptive statistics was done for all variables, and chi-squared test was applied for nominal variables to assess correlations.

Results: The respondent were 72 patients, 53% were male, while female shared 47%. In our study the overall participant knowledge and awareness about medical treatment, drug compliance, and the disease was ranging from 60-86%. There was a significant association between age and the patient ability to define the disease, p=0.037. Also there was association between educational level and ability of patient to define the disease (p<0.001). However, there was no correlation between gender or job status and awareness of disease.

Conclusion: The knowledge and awareness about the disease, drugs and compliance of hypertensive patients in Arar was good, well correlated with age and educational level and could be further improved by educational programs for these patients.

INTRODUCTION

Hypertension is one of the most common health problems in the world, and is associated with serious short and long term complications. Patient awareness of the disease and compliance to the treatment can contribute to prevent these complications. A study conducted in 2007 reported that the prevalence of hypertension in Saudi Arabia was 26.1%. Gender wise the prevalence of hypertension was 28.6% for males, while for females was significantly lower at 23.9% (p<0.001), moreover the urban population showed significantly higher prevalence of hypertension of 27.9%, compared to rural population's prevalence of 22.4% (p<0.001).[1]

Patients with hypertension who have uncontrolled hypertension as a result of their poor compliance remain at risk for serious morbidity and mortality (eg, stroke, myocardial infarction, and kidney failure), thereby accounting for a significant cost burden through avoidable hospital admissions, premature deaths, work absenteeism, and reduced productivity.[2]

Control of hypertension is of paramount importance for primary and secondary prevention of cardiovascular disease, and depends on patient compliance to treatment, poor compliance with antihypertensive medication is one possible reason why success in clinical trials has not been translated into everyday practice.[3] Thlere are several important factors that influence patient compliance that should be addressed. Firstly, side effects associated with antihypertensive drugs are important in determining compliance rates .[4] Secondly, antihypertensive agents that are dosed once daily are taken more regularly than drugs that have to be taken more than twice daily.[5] Thirdly; it appears that more rapid control of blood pressure with fewer changes in the treatment regimen has a positive psychologic effect on patients.[6] Fourthly, there tends to be an inverse relationship between the number of drugs that a patient has to take and their adherence to a regimen.[6] Finally; Cost, socioeconomic status, and accessibility to medical care will influence patient compliance.[6]

Beside patient compliance, patient knowledge and awareness of hypertension are important factors in achieving blood pressure control.[11] So, improving hypertension awareness should result in improved treatment and control rates.[12] Oliveria and his colleagues reported that, although general knowledge and awareness of hypertension is adequate, patients do not have a comprehensive understanding of this condition. For instance, patients do not recognize the importance of elevated systolic blood pressure levels or the current status of their BP control. An opportunity exists to focus on the patient education programs and interventions on the cardiovascular risk associated with uncontrolled hypertension, particularly elevated systolic blood pressure levels.[13]

In Saudi Arabia there is probably only one study which was carried out in Tabuk region in 1997.[7] this study addressed the rate of compliance and reasons of incompliance. The present work is aimed to assess the awareness of disease, drugs, as well as the compliance to treatment among hypertensive patients, in Arar, Northern Border Region of Saudi Arabia. This is perhaps the first study of its kinds in northern Border region of Saudi Arabia, and it is hoped that it will be a source of good knowledge to health care providers regarding the patient awareness and compliance to treatment of hypertension.

SUBJECTS AND METHODS

This study is a cross-sectional descriptive study for assessing the awareness of hypertensive patients regarding their knowledge of disease, medication, and their compliance to the treatment. Study population was hypertensive patient visiting Arar Central Hospital, and Prince Abdalaziz Bin Musaad hospital, Arar, Saudi Arabia. Diagnosed hypertensive patients visiting these hospitals who consented to participate in the study were included. Data were collected using interviewer-administered questionnaire; constructed on the basis of Hypertension Knowledge Level Scale (HK-LS).[8], which includes patient demographic data, awareness of disease, medications (drugs), and compliance. The sample size depended mainly on the response rate of participants. Data were analysed using statistical program SPSS, version 16. Descriptive statistics was done for all variables, and for correlations chi-squared test was applied for nominal variables. For statistical significance the p-value was set at 0.05.

RESULTS

The total study participants were 72 patients, 53% were male while female were 47%. 82% of study participants were more than 50 years old. Participants with no formal education were 43.1%, those having 1-8 years of formal education were 27.8%, and 29.1% had more than 9 years of education. Those who work at income generating job were 55.6% and unemployed participants were 41.7%. Family history of hypertension was present at 41.7% of participants while it was absent in 58.3%, presented in **(Table 1)**.

Table 1: Demographic data of participants

Variable		Number (%)
age	18-29	1 (1.4)
	30-39	0 (0.0)
	40-49	12 (16.7)
	50-59	29 (40.3)
	60+	30 (41.7)
Total		72 (100)
Gender	Male	38 (52.8)
	Female	34 (47.2)
Total		72 (100)
Educational level	No Formal Education	31 (43.1)
	1-8 years	20 (27.8)
	9 years +	21 (29.2)
Total		72 (100)

Work At Income Generating Job	Yes	40 (55.6)
	No	30 (41.7)
		70 (97.3)
family history of hypertension	Absent	42 (58.3)
	Present	30 (41.7)
Total		72 (100)

Fifty percent of participants could define the disease, while awareness of hypertension complications ranged from 74-86%, that means 14-26% of study participants were not aware about the hypertension complications **(Table 2)**.

Table 2: knowledge and awareness about disease awareness

	Correct Frequency (%)	Incorrect Frequency (%)	I don't Know Frequency (%)	Total
increased diastolic blood pressure also indicates increased blood pressure	36 (50.0)	5 (6.9)	31 (43.1)	72 (100)
high diastolic or systolic blood pressure indicates increased blood pressure	36 (50.0)	4 (5.6)	32 (44.4)	72 (100)
increased blood pressure can cause premature death if left untreated	53 (73.6)	10 (13.9)	9 (12.5)	72 (100)
increased blood pressure can cause heart diseases, such as heart attack if left untreated	61 (84.7)	5 (6.9)	6 (8.3)	72 (100)
increased blood pressure can cause stroke if left untreated	62 (86.1)	6 (8.3)	4 (5.6)	72 (100)
increased blood pressure can cause kidney failure if left untreated	61 (84.7)	5 (6.9)	6 (8.3)	72 (100)
increased blood pressure can cause visual disturbances if left untreated	55 (76.4)	12 (16.7)	5 (6.9)	72 (100)

Awareness about medical treatment (drugs) ranged from 68% to 86%; **(Table 3)** represented by questions used to assess knowledge and awareness about medical treatment.

Table 3. knowledge and awareness about medical treatment.

	Correct Frequency (%)	Incorrect Frequency (%)	I don't Know Frequency (%)	Total
drugs for HT must be taken every day	62 (86.1)	9 (12.5)	1 (1.4)	72 (100)
individuals with HT must take their medication only when they feel well	16 (22.2)	55 (76.4)	0 (0.0)	71 (98.6)
individuals with increased blood pressure must take their medication throughout their life	55 (76.4)	11 (15.3)	6 (8.3)	72 (100)
individuals with increased blood pressure must take their medication in a manner that makes them feel good	49 (68.1)	23 (31.9)	0 (0.0)	72 (100)

Most of participants (60-72%) were aware about the importance of drug compliance, **(Table 4)**.

Table 4. knowledge and awareness about Drug compliance .

	Correct Frequency (%)	Incorrect Frequency (%)	I don't Know Frequency (%)	Total
If the medication for increased blood pressure can control pressure, there is no need to change lifestyle	15 (20.8)	52 (72.2)	5 (6.9)	72 (100)
Increasing blood pressure is the result of aging, so treatment is unnecessary	21 (29.2)	43 (59.7)	8 (11.1)	72 (100)
If individuals with increased blood pressure change lifestyle, there is no need for treatment	22 (30.6)	45 (62.5)	5 (6.9)	72 (100)
If individuals with increased blood pressure can eat salty foods as they take their drugs regularly	22 (30.6)	49 (68.1)	1 (1.4)	72 (100)

In this study cross tabulation was made between dependent and independent variables, and Chi-Square Test was applied to assess the association between dependant and independent variables. There was a significant association between age and the patient ability to define the disease, p=0.037. Similarly, education level had significant association with awareness of compliance p=0.015. Also there was statistical association between educational level and the ability of patients to define the disease, p<0.001. However, there was no statistical association between gender or job status with the awareness of disease, drugs, and compliance.

DISCUSSION

Awareness of hypertension and its complications, and knowledge about drugs help to improve patient compliance, blood pressure control, and prevention of long term complications of the disease. In our study the overall participant's knowledge and awareness about, disease, medical treatment, and drug compliance, ranged from 60% to 86%. These findings were consistence with a study conducted in Iran which reported that the patients awareness score about hypertension was very good (>75).[9] Finding of two studies from United State[14,15] and one study from China[16] were close to our results regarding the patient awareness of the disease. However one study from Canada[17] reported that hypertensive patients' awareness of blood pressure targets and current hypertension control status, particularly with respect to systolic blood pressure, was suboptimal.

In our study we found statistical association between educational level and ability of patient to define the disease, which is similar to the results of Baliz Erkoc, et al, that individuals with nine or more years of formal education had higher mean scores for the definition sub-dimension ($P < 0.05$)[8], and also similar to that of Sabouhi et al (2009). Martins, et al (2000) in their study found that the mean high blood pressure knowledge score for the overall sample was 83.1%. There were subgroup differences in the scores with significant associations between high blood pressure knowledge score and level of education ($P = .002$).[10] which is consistent with our findings.

Sabouhi, et al. (2009). reported high scores for awareness of drugs in women ($P < 0.05$).[8] but in our finding no significant difference was observed between male and female regarding the awareness of the disease. in the present study there was no correlation between knowledge of the disease, drugs, and compliance with the participants job status, which was similar to findings of Sabouhi, et al (2009).

To conclude, therefore, it is suggested that an educational programs targeting hypertensive patients to improve their awareness of disease, drugs, and compliance is of great importance. When constructing such educational programs we have to take in our consideration the education level of the targeted patients. Such programs need collaborative effort between the Northern Border University, health care providers of the region, and the community to come true.

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