

A Study on Knowledge, Awareness and Medication Adherence in Patients with Hypertension in a Tertiary Care Hospital

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Abstract

Objectives: To study the knowledge, awareness, and medication adherence among hypertensive patients in a tertiary care hospital.

Materials and methods: This prospective observational study was conducted at Adesh Institute of Medical Sciences and Research, Adesh Hospital, Bathinda. Institutional Ethics Committee approval was obtained prior conducting this research. Data was collected from 105 hypertensive patients who were attending Department of General Medicine. Both males and females above age of 18 years were included in the study. Written Informed consent in English and local languages were obtained from participants before enrolling in the study.

Data was collected using MMAS-8 questionnaire. After obtaining the data, SPSS version 21 was used to analyse the data. Data was analysed based on the responses from the MMAS-8 questionnaire and Knowledge of hypertension questionnaire.

Results: Majority of the patients were not adherent to their blood pressure medications. There was a liner relationship between the knowledge of patient regarding their hypertension and the subsequent adherence to their medication. Most of the patients were aware of the normal values of their blood pressure. However, majority of them were not aware about the hypertension range of blood pressure values. Patient perceptions regarding family history, age, gender, obesity, diet, salt intake were the contributory factors relating to non-adherence. The study shows that out of 105 hypertensive patients, maximum respondents were female with 55 (52.4%) respondents of the total respondents.

Conclusion: we concluded that patient's knowledge regarding their disease could improve adherence. Most of the patients who were adherent to their medication regimen were aware of their disease in general. Health care professionals including doctors, nurses and pharmacists can play an important role in educating patients regarding their hypertension status and blood pressure values and the importance of medication adherence. This will hopefully lead to increases awareness and increased adherence among the patients.

Keywords: Hypertension; MMAS; Medication adherence; Blood pressure

Introduction

Over 1 billion individuals worldwide are affected with hypertension, which is the leading risk factor for death. Hypertension accounts for around 50% of heart disease and stroke-related deaths worldwide. Hypertension is often referred to as “silent killer” as it does not cause any symptoms of its own. It affects 1 billion people worldwide or one in four adults. (World heart foundation). Even though the condition is becoming more common, there are still few thorough evaluations of the financial effects of hypertension, and the proportions of hypertension awareness, treatment, and blood pressure control are low, especially in LMICs [1]. Lack of adherence to prescribed medications is one of the major reasons of uncontrolled hypertension. Poor adherence results in increased frequency of cardiovascular related deaths and also have economic consequences for patients and healthcare industry. In a longitudinal analysis of electronically produced dose histories of 4783 patients, adherence to antihypertensive medication was found to be particularly problematic in cases of hypertension, with around half of the patients quitting the medication after a year [2]. Even though it's acknowledged that adherence awareness has grown recently, more work remains to be done [3]. Patient's adherence to the medication may be influenced by their individual beliefs. Therefore, it is essential to formulate a thorough plan to address the needs of individual patients regarding to improve medication adherence. Patients who have recently received a new diagnosis, inadequate insurance coverage, polypharmacy, and other comorbidities particularly mental illnesses

are more at risk [4]. WHO has categorized barriers and factors that impact medication adherence into five following categories:

Sociodemographic: income level, ethnicity, age, literacy, social status and support.

Healthcare system related: patient-clinician relationships, physician communication styles, quality-based reimbursement, and therapy inertia.

Therapy-related: choice of complex regimen, frequent treatment changes, adverse effects, lack of refill frequency and consolidation.

Condition related: many comorbidities, such as significant disability, drug or alcohol misuse, depression, psychoses, and dementia.

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Patient related: Patients' ignorance or misperceptions, inadequate assessments of their condition and the effectiveness of their therapy, refusal of a diagnosis, anxiety about dependence or side effects, and neglect of follow-up.

This study was conducted in a tertiary care hospital to assess the medication adherence in patients with hypertension [5].

Inclusion Criteria:

Patients whose BP was more than 140/90 measured 5 minutes apart were included in the study.

Materials and Methods

This prospective observational study was conducted at Adesh Institute of Medical Sciences and Research, Adesh Hospital, Bathinda. Institutional Ethics Committee approval was obtained prior conducting this research [6]. Data was collected from 105 hypertensive patients who were attending Department of General Medicine. Both males and females above age of 18 years were included in the study [7]. Written Informed consent in English and local languages were obtained from participants before enrolling in the study.

Data was collected using MMAS-8 questionnaire. After obtaining the data, SPSS version 21 was used to analyse the data. Data was analysed based on the responses from the MMAS-8 questionnaire and Knowledge of hypertension questionnaire.

Results

A total number of 105 patients participated in the study in a time span of 6 months. Out of these 105 patients, 55 were female respondents (52.4%) and 50 were male respondents (47.6%). A total number of 23 patients belonged to the age group 45-50 (21.9%), 65-70 (22%), 55-60 (18%) [8]. Only 1 patient belonged to the age group of 70-75. Medication adherence was assessed by using MMAS.

Blood pressure at the time of encounter. Out of 105 hypertensive patients, 77 (74%) had their blood pressure under control. The average of the two consecutive blood pressure readings were taken into consideration [9]. The details of the blood pressure recorded at the time of encounter are given in the table below [10] (Table 1 and Figure 1).

When the patients were asked whether they forget to take their medicine, the following responses were recorded. Out of 105 patient, 67 (63.8%), patients responded "YES" to our question 35 (36.08%)

Table 1: Blood pressure at the time of encounter.

Blood pressure	Frequency	Percent
112/68	5	4.8
116/68	6	5.7
120/70	10	9.5
128/68	12	11.4
130/70	4	3.8
130/72	9	8.6
137/80	4	3.8
137/88	6	5.7
138/72	12	11.4
140/74	10	9.5
141/80	2	1.9
145/70	4	3.8
150/70	9	8.6
151/80	9	1.0
152/90	8	7.6
152/95	3	2.9

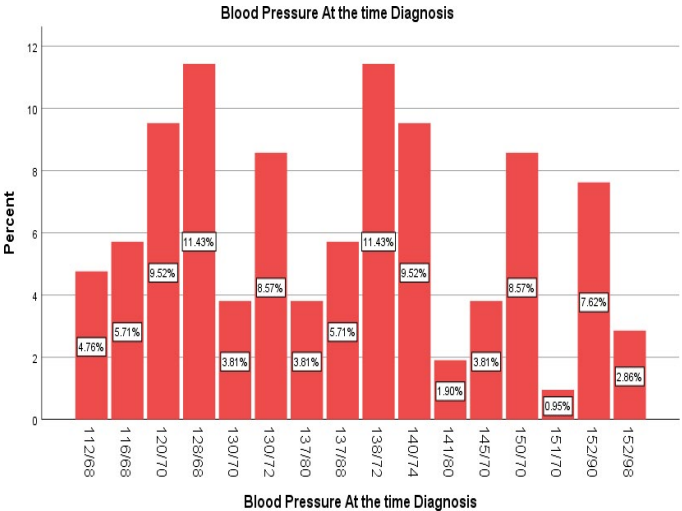


Figure 1.1: Distribution of blood pressure ranges in the patients.

patients responded "NO" and the 3 patients choose not to answer.

When the patients were asked whether they are careless at times about taking their medications [11]. Out of 105, 62 (59%) patients, were careless about taking their medications and the rest were complaint [12].

68 (64.8%) patients mentioned that they stop to take their medications when they feel better and 43 (41%) patients responded they stop to their take medication if they feel worse and the rest 62 (59%) patients do not stop taking their medication when they feel worse at times.

Out of 105 patients, most (88.6%) patients believe that they know about the long-term effects of taking their medications as told by their doctor or pharmacist [13]. A total number of 46 (43.8%) patients mentioned that they forget to refill their prescription on time.

Based on MMAS-8 questionnaire, motivation was calculated for these patients based on the set of questions asked. A score of 0-1 was considered as LOW motivation and a score of 2-3 was considered as high motivation. Following results were obtained regarding motivation of the patients [14] (Figure 2).

Knowledge of hypertension

Knowing normal values of blood pressure as 120/80 mmHg: Majority (92.4%) of the patients were aware of the normal values of the blood pressure of 120/80. Out of 105 patients, only 8 (7.6%) patients were not aware of the normal values of their hypertension [15].

Increase in BP >140/90 is called hypertension: Out of total 105 patients, only 27 (25.7%) patients knew that blood pressure of 140/90 or above is called hypertension [16].

Hypertension can progress along with age: when asked only 17 (16.2%) patients believed that hypertension can progress along with age. The rest of the patents did not think so.

71.4% patients believe that both genders have equal chances of developing hypertension and all the patients believed that hypertension is a treatable condition. When asked about family history of hypertension, only 42 (40%) patients believed that there is increased risk of developing hypertension if there is family history of hypertension [17]. Majority (90.5%) of the patient agreed that ageing is greater risk for hypertension and only 64 (61%) believe that smoking is

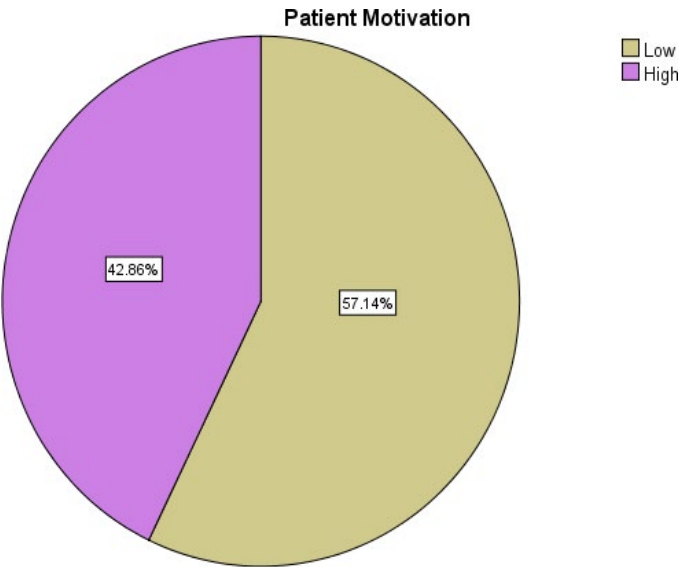


Figure 1.2: Distribution of patient motivation regarding their hypertension.

Table 2: Correlation between gender vs do you ever forget to take your medicine. Following results were obtained as shown in table below.

Gender * Do you ever forget to take your medicine Crosstabulation			
Count			
Do you ever forget to take your medicine			Total
Gender	Yes	No	
Male	32	18	50
Female	35	20	55
Total	67	38	105

a risk factor for hypertension [17].

All (105) the patients agreed that eating fatty foods is a risk for developing hypertension whereas 85 (81%) patients believed that overweight is a risk for hypertension. Almost half the patients agreed that regular exercise reduces hypertension while as the rest of the patients did not think so [18]. Out of 105 patients, 96.2% patients believe that more salt consumption increases the risk of hypertension. 86 patients do not think that medication alone will suffice in controlling high blood pressure and 93 (88.6%) patients agree that hypertension can lead to life threatening conditions [19] (Table 2).

Discussion

The study shows that out of 105 hypertensive patients, maximum respondents were female with 55 (52.4%) respondents of the total respondents. Number of male respondents were 50 (47.6%) of the total respondents. Most of the participants (23) belonged to age group of 45 -50. Number of participants in age group 65-70 was 22 and with age group 35-40 was 6. Only 1 patient belonged to age group 70-75. Maximum age of participant was 74 and minimum was 35. Out of 105 hypertension patients, 77 (74%) had their BP under control at the time of data collection while as rest were having BP above normal limits. 10 patients had their blood pressure values above 140/90 during data collection.

Modified Morisky Adherence Scale was used to assess the medication adherence in these patients and following responses were recorded.

Out of 105 patients, 67 (63.8%) patients answered YES that they forget to take their prescription medicines sometimes whereas only

38 (36.2%) patients responded that they never forget to take their medicine.62 (59%) patients responded that they are careless about taking their medicine. 68 (64.4%) patients answered YES when asked about whether they stop taking their medicine when they feel better whereas 37 (35.2%) answered NO.

43 (41%) respondents answered YES when asked about whether they stop taking their medicine when they feel worse. 93 (88.6%) patient’s response was YES when asked about knowing the long-term benefit of taking their medicine as explained by their doctor or pharmacist.

46 (43.8%) patients responded that sometimes they forget to refill their prescriptions at time. After assessing the motivation scores, it was found that 60 (57.1%) patients were having LOW motivation after calculating scores from MMAS-8 questionnaire. Whereas 45 (42.9%) patients were having HIGH motivation.

Based on MMAS-8 scale, 28 (26.7%) were having LOW knowledge and rest 77 (73.3%) were having HIGH knowledge. Most of the patients, 97 (92.4%) were aware of the normal values of BP as 120/80 when asked and only 8 (7.6%) were unaware of normal BP values.78 (72.3%) were unaware of the BP value 140/90 is called as hypertension.

88 (83.8%) patients believed that hypertension can progress along with age, whereas all the 105 patients agreed that hypertension is a treatable condition.75 (71.4%) patients believed that both male and female sex has equal chances of developing hypertension. Only 42 out of 105 respondents believed that there is risk of developing hypertension if there is family history of hypertension. All the 105 patients believed that hypertension is a treatable condition when asked about, whereas 95 (90.5%) believed that ageing is a greatest risk of hypertension. 64 (61%) patients believed that smoking is risk factor for hypertension while as rest believed otherwise.

All patients agreed that eating fatty food increases the risk of hypertension.85 (81%) patients believed that overweight is a risk factor for hypertension.51.4% patients believed that regular exercise can reduce risk of hypertension.

101 (96.2%) patients believed that consuming more salt can increase Blood pressure. Only 19 (18%) patients believed that medication alone is needed to control BP. 88.6% patients believed that hypertension could lead to life threatening condition.

A total of 562 drugs were prescribed to treat hypertension and associated comorbidities in these patients. An average of 5.35 drugs were prescribed per prescription. Approximately 49% patients were prescribed an average of 5 drugs per prescription. 17% patients were prescribed monotherapy to control BP whereas more than 82% patients were prescribed 1-3 antihypertensive drugs to control their Blood pressure.195 patients were prescribed calcium channel blockers as monotherapy to control their blood pressure. 5.7% patients received beta-blockers as monotherapy. 33.3% patients received a combination of calcium channel blocker and Angiotensin receptor blocker. 21% patients were prescribed a combination of CCB+ARB+BB.

Conclusion

Our study concluded that most of the patients are not adherent to their antihypertensive medication regimen. The factors associated with non-adherence were mostly the lack of knowledge among the patient regarding hypertension and blood pressure. Majority of the patient t’s were aware of the normal range of blood pressure. However, most of the patients were unaware of high or elevated blood pressure. Patient’s perception regarding the gender, family risk, exercise, diet,

salt consumption and lack of knowledge were the main contributory factors of non-adherence. Also, we concluded that patient's knowledge regarding their disease could improve adherence. Most of the patients who were adherent to their medication regimen were aware of their disease in general. Health care professionals including doctors, nurses and pharmacists can play an important role in educating patients regarding their hypertension status and blood pressure values and the importance of medication adherence. This will hopefully lead to increases awareness and increased adherence among the patients.

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