Uses Of Noncompliance To Treatment Among Patients With Hypertension In Basrah

Bashaar Tariq Husain [1], Rasha Ahmed Abdul Qader [2]

1. Basrah Health Directorate, Basrah, Iraq.
2. Department of Community and Family Medicine, College of Medicine, University of Basrah, Basrah, Iraq.

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Abstract

Background: Hypertension is considered the most important public health disease around the world due to its high prevalence after 65 years, and it is a modifiable risk factor for cardiovascular diseases like myocardial infarction, renal insufficiency, and stroke. It can also cause death if not diagnosed and treated early. The study aimed to assess the main causes of non-compliance with hypertensive treatment among hypertensive patients.

Methods: A cross-sectional study was conducted in the consultant clinic of AL-Sader Teaching Hospital in Basrah from April 1st, 2021, to September 15th, 2021, on 381 patients previously diagnosed with hypertension by specialists. The data was collected using a questionnaire and face-to-face interviews.

Results: This study showed that (44.4%) of the participants aged 60 years and above, (60.4%) were females, the highest percentage were housewives (44.4%) followed by retired (24.4%), the majority of participants were married with a level of education less than secondary education, and (51.2%) had intermediate economic status. Regarding the clinical characteristics of the study participants, 61.4 percent of them were diagnosed with hypertension, most of them were asymptomatic, and more than half of them had no other comorbidities. Most of them showed good compliance to the traditional treatment; regarding compliance to antihypertensive treatment, the highest percentage of them did not adhere either to the time prescribed by the doctor or to the dose or frequency; more than half of them stopped their treatment when they felt better, and nearly half of them stopped treatment while feeling bad due to drug side effects. The majority of them were not affected by the cost of drugs. Most of them had poor compliance regarding medical check-ups.

Conclusions: The current study concludes that the compliance rate in general was low among our study participants. The Factors that decreased the rate of noncompliance were old age, a higher educational level, being retired, and the long duration of the disease.

Keywords: Hypertension, Blood pressure, Medications, Treatment compliance, Basrah.

Corresponding author: Rasha A. Abdul Qader

✉ **E-mail**: dr_rasha29@yahoo.com

Introduction

Hypertension is considered the most important public health disease around the world due to its high prevalence after 65 years [(1)], and it is a modifiable risk factor for cardiovascular diseases like myocardial infarction, renal insufficiency, and stroke. It can also cause death if not diagnosed and treated early. [(2)] According to the World Health Organisation (WHO), it is estimated that 9.5 million people die annually due to hypertension problems. The prevalence of hypertension worldwide is 29 percent and increases in people over 65 years old. [(3)] As population age increases, there is an elevation in blood pressure due to vascular stiffness produced by the accumulation of calcium, smooth muscle hyperplasia in the arterial wall, and alterations in vascular wall collagen. Also, old patients tend to have more sedentary lifestyles, which leads to an increase in body weight, so the prevalence of hypertension in the world will continue to increase. It is expected that the number of people with hypertension will rise by 15–20% in 2025 and may reach 1.5 billion. [(4)] In general, Middle Easterners have a high prevalence of

hypertension. A study conducted in Iran revealed that 57% of people aged ≥ 60 years have hypertension, compared to 3.6% of people aged < 30 years. [5] In 2014, a household survey done in Thi-Qar Governorate showed a prevalence of hypertension of 26.5%. [6] In spite of the importance of antihypertensive therapies, non-compliance with treatment is common among patients with hypertension around the world. Many studies have recommended that there is no compliance with anti-hypertensive treatment, mainly among elderly people with multiple chronic diseases. [4] Patients' compliance with their medication regimen reduces the risk of myocardial infarction by 20%–25%, cardiac failure by >50%, and stroke by 35%–40%. Therefore, taking appropriate intervention measures to control blood pressure levels is of great significance to reduce the risk of cardiovascular disease and improve the quality of life of patients. [7]

Materials and methods:

A cross-sectional study was carried out at the consultant clinic of Al-Seder Teaching Hospital in Basrah, Iraq, including hypertensive patients who visited the clinic during the period from 1st of April 2021 to 1st of August;2021. Patients who were twenty years old and older, and of different socioeconomic classes and educational levels were included in the study. Also, patients who were diagnosed with hypertension by clinical physicians for 1 year and those who took at least one antihypertensive drug were included. At the same time, the exclusion criteria of this study were pregnant women with hypertension. The sample size was calculated according to the following formula [$n = Z^2 * P (1-P) / E^2$] where P=54.7% prevalence of non-compliance to the treatment of hypertension [8], Z = 1.96, and E = 0.05. According to the formula above, the sample size was 381.

A special questionnaire was prepared for the study, including sociodemographic characteristics regarding age, gender, educational level, marital status, occupation, economic level, and family number. Clinical characteristics, which included duration since diagnosis of hypertension, comorbidities, and severity. Drug history, including type of antihypertensive drugs, number of drugs, traditional treatments, and source of payment for the drugs. Also, a special questionnaire was used to assess compliance with antihypertensive drugs. This study used the following self-report questions to measure the patient's medication compliance: 1) Can you take your antihypertensive medication every day based on the frequency prescribed by doctors? 2) Can you take your antihypertensive medication every day based on the timing prescribed by doctors? 3) Can you take your antihypertensive medication every day based on the required dose prescribed by doctors? and 4) Do you continuously take your antihypertensive medication even during travel? The 4-scale answers to these questions include: 1) never complete, 2) sometimes complete, 3) usually complete, and 4) always complete. The participants who chose either the third or the fourth option as answers to all four questions were identified as adherent; those who did not were considered nonadherent. [9]

Data were fed to the SPSS computer program (Statistical Package for Social Sciences version 26) for checking and for statistical analysis. Frequency and cross-tabulation were obtained. Chi-squared test was conducted and a p-value less than 0.05 was considered statistically significant

Results:

Table 1: Socio-demographic characteristics of the study population

Demographic Characteristics		Number	Percentage
Age	20-	3	0.8
	30-	22	5.8
	40-	61	16
	50-	126	33
	≥60	169	44.4
Gender	Male	151	39.6
	Female	230	60.4
Marital statues	Married	334	87.7
	Widow	41	10. 8
	Divorced	4	1
	Single	2	0.5
Education	Illiterate	94	24.7
	Just read and write	84	22.1
	Primary	96	25.2
	Intermediate	74	19.4
	Secondary	28	7.3
	College and postgraduate	5	1.3
Occupation	Governmental employee	75	19.7
	Housewife	169	44.4
	Retired	93	24.4
	Self-employed	44	11.5
Economic level	Poor	115	30.2
	Medium	195	51.2
	Good	71	18.6
Total		381	100 %

Table 1 shows the socio-demographic characteristics of the study population. Forty-four percent of the participants belonged to the age group 60 years and older, and only three patients were between 20-30 years old. Nearly two-thirds of the patients were female, 230 (60.4%), and 151 were males (39.6%), with a male-to-female ratio of 0.65:1. Regarding marital status, 334 patients were married, and most of them had a low level of education (illiterate to primary school), which collectively constitutes 71.9%. Moreover, the highest percentage of the participants were housewives (44.4%) and had a medium economic level (51.2%).

Table 2: Clinical characteristics of the study population

Clinical Characteristics			Number	Percentage
Duration		1-4	109	28.6
		5-9	125	32.8
		≥10	147	38.6
Comorbidity		No chronic disease	202	53.0
		One chronic disease	157	41.2
		≥2 chronic disease	22	5.8
Severity		Asymptomatic	273	71.7
		Headache	74	19.4
		Dizziness	34	8.9
Blood pressure check		Weekly	111	29.1
		Irregularly	270	70.9
Type of drug		Do not know	326	85.5
		know the name of drug	55	14.5
Number of antihypertensive drugs		1	282	74
		2	97	25.5
		≥3	2	0.5
Traditional treatment	Salt restriction	Yes	277	72.7
		No	104	27.3
	Fat restriction	Yes	202	53
		No	179	47
	Physical exercise	Yes	61	16
		No	320	84
Source of payment		Family	222	58.3
		Them-self	149	39.1
		Governmental	10	2.6
Total			381	100%

About the clinical characteristics of the study population, which are shown in Table(2), 38.6% of the participants were diagnosed with hypertension before 10 years and more, compared to 28.6% of them who were diagnosed before 4 years. Nearly half of the patients had no comorbidities, 41.2% had one chronic disease, and 71.7% were asymptomatic. Seventy-nine percent of the patients checked their blood pressure irregularly; the majority of them took only one drug and did not know the name of the drug that they had taken. Regarding the traditional treatment, 72.7% of the study participants restricted salt in their food, 53% restricted fatty food, and 84% of them didn't perform any form of physical exercise. Only 2.6% of participants received treatment from the primary health care centres; payment was made by patients in (39%). Moreover, regarding compliance with antihypertensive treatment, about two-thirds of the participants did not take the drug every day on time and with the exact frequency and dose. Furthermore, more than 50% of the patients stopped the medication when they felt better and without the doctor's advice. Also, about 70% of the patients do not stop the drug due to its cost or their busy schedules, and 72.5% of the patients visit their doctor after a period of more than 6 months or on need.

Table 3: Distribution of patient's compliance to treatment according to the time prescribed by doctors with other variables

Character		Non-compliance		Compliance		Total	P-value
		Frequency	%	Frequency	%		
Age	20 -	3	100	0	0	3	0.001
	30 -	19	86.4	3	13.6	22	
	40 -	57	93.4	4	6.6	61	
	50 -	68	54	58	46	126	
	≥60	113	66.9	56	33.1	169	
Gender	Male	106	70.2	45	29.8	151	0.506
	Female	154	67	76	33	230	
Education	Illiterate	76	80.9	18	19.1	94	0.001
	Just read & write	73	68.9	11	13.1	84	
	Primary	63	66.3	32	33.7	95	
	Intermediate	34	45.9	40	54.1	74	
	Secondary	12	42.9	16	57.1	28	
	College & Postgraduate	2	33.3	4	66.7	6	
Occupation	Governmental employee	48	64	27	36	75	0.001
	Housewife	124	73.4	45	26.6	169	
	Retired	50	53.8	43	46.2	93	
	Self-employed	38	86.4	6	13.6	44	
Economic level	Poor	106	92.2	9	7.8	115	0.001
	Medium	21	30	50	70	71	
	High	133	68.2	62	31.8	195	
Duration	1-4	103	94.5	6	5.5	109	0.001
	5-9	97	77.6	28	22.4	125	
	≥ 10	60	40.8	87	59.2	147	
Comorbidity	No	166	82.2	36	17.8	202	0.001
	One	68	43.3	89	56.7	157	
	≥ Two	5	22.7	17	77.3	22	
Number of drugs	1	100	52.6	90	47.4	190	0.110
	2	158	83.6	31	16.4	189	
	3	2	100	0	0	2	

Table (3) shows a significant statistical association between compliance to the treatment according to the time prescribed by doctors and the age of participants, education, occupation, economic level, duration, and comorbidity with a p-value <0.05, while there was no significant association with gender or the number of drugs (p-value >0.0.5).

Discussion:

Hypertension is a serious public health problem due to its high prevalence, and good control of the disease has always been considered essential for reducing its morbidity and mortality. Non-compliance is a serious problem and should be understood as one of the major obstacles to the success of the treatment of hypertension. The current study found that 44.4% of patients were in the age group of 60 and above. The result was similar to a study done in Duhok, which revealed that 50% of patients were between 50 and 79 years old. [10] This is also consistent with another study carried out in Finland, which showed that patients who were in the age group 50 and above comprised 52% of all participants; moreover, hypertension is an age-related disease, and its prevalence will be higher at older ages. [11]

In this study, the male-to-female ratio was 0.6:1. Which was similar to a study that was done in Duhok. [9.] This might be because females had more visits to clinics and more compliance than males, and it was non-compatible with a study done in Kirkuk that revealed that males comprised 53.7% of total patients [12], and another study in Italy in which males comprised 56%. [13] Also, the majority of participants in this study were married (87.7%), which was similar to a study done in Erbil [14] and Pakistan. [15] Furthermore, 44.4% of the study population were housewives. This is also similar to a study done in Pakistan in which the majority of participants were housewives. [16] This was expected since housewives had more free time and used public clinics more frequently for receiving drugs than private clinics. Moreover, the current study showed that 71.9 percent of the study population ranges from illiterate to primarily educated; this result was consistent with a previous Iraqi study in Kirkuk [12] and might reflect the general expected illiteracy rate in the community. In addition, some of the highly educated patients might seek private rather than public clinics. This result disagreed with a study that was done in the USA, and this might be due to the low illiteracy rate in Western communities. [16]

Regarding the duration of hypertension, 38.6% of the participants were diagnosed with hypertension before 10 years; this agreed with a study that was carried out in Erbil [17] and China [18]. When evaluated for co-morbidities, it was noticed that 53.0% had no other diseases; this was dissimilar to a study done in Saudi Arabia in which the percentage of those with no other comorbid conditions was 15% [19] and similar to a study in Ethiopia in which (65.3%) had no comorbidities. [20] In Sulaymaniyah, a study was done and showed that 68.6% of the patients were classified as asymptomatic [8], which is similar to the current study, while in China only 37.7% of the patients were asymptomatic by self-reported severity. In addition, it showed that 37% of the study participants had regular blood pressure check-ups which is similar to the results of the current study. [18]

A study that was done in Saudi Arabia showed that 68.8% of the patients were on monotherapy, [19] which is similar to the result of the current study. Regarding salt restriction, a study carried out in Erbil showed that those with no table salt intake comprised (98.1%) and those who were performing physical exercise 92.1%, which is inconsistent with the current study. [14] In the present study, only 38.1 percent of the participants were taking their treatments according to the doctor's prescription, while in Sulaymaniyah, 54% of their patients were taking regular medication. [8]

This study found that about a third of the participants stopped medication when they felt better, and half of them stopped medication due to its side effects. These results agreed with a study carried out in the United States. This was because patients thought that they became better, so there was no need to take drugs regularly. Also, in a study in the United States, 52.1% of the participants were not compliant due to forgetfulness. [21] One-quarter of the patients stopped taking drugs due to their cost. This result disagreed with a study that was carried out in Ghana. [22] Also, only 27.5% of the patients had regular medical check-ups every 3-6 months, which disagreed with a study done in China in which only 27.2% had no medical check-ups. [18] In addition, a significant statistical association was found between compliance with

treatment and those aged 50 years and older. This result was consistent with a study done in Erbil that revealed compliance was significantly higher among older patients > 60 years [14]. Also similar to the results of other studies conducted in Ardabil, Iran [23], Saudi Arabia [19], and Cameron. [24]

This current study showed that there was no significant association between sex and compliance, which is consistent with a study done in Iran. [23] But disagreed with a study in Ghana [22] and Turkey that showed a higher rate of adherence among females. [25] Regarding educational level, this study showed a statistically significant association between education and compliance; this was consistent with studies from Kirkuk [12] and Ghana [22], but it was not consistent with a study in Kuwait. [26] About the economic level of the patients, a significantly higher adherence level was found among those with a medium economic level, this agreed with a study done in Erbil in 2019 [17]. While a study conducted in Saudi Arabia showed no significant association between compliance with their treatment and economic level. [19] The duration of hypertension was significantly associated with compliance and it was higher in patients who had hypertension for 10 years or more. This might be partially due to the fact that young patients were more afraid of taking a lifelong medication than patients in the older age group, which is against the result reported in Ghana [22] but similar to a study in Iran [23].

Conclusions

The current study concludes that the compliance rate in general was low among our study participants. The Factors that decreased the rate of noncompliance were old age, a higher educational level, being retired, and the long duration of the disease. The females were more compliant than those on a single drug for hypertension, but the association was not statistically significant. Compliance is an important factor for controlling blood pressure and preventing future complications.

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Conflict of Interest

The authors declared that they have no conflict of interest.

استخدامات عدم الامتثال للعلاج بين مرضى ارتفاع ضغط الدم في البصرة

الملخص : يُعتبر ارتفاع ضغط الدم من أهم الأمراض الصحية العامة على مستوى العالم بسبب انتشاره الواسع بعد عمر ٦٥ عامًا، كما يُعد عامل خطر يمكن تعديله للأمراض القلبية الوعائية مثل احتشاء عضلة القلب، القصور الكلوي، والسكتة الدماغية. قد يؤدي عدم التشخيص والعلاج المبكر إلى الوفاة. هدفت الدراسة إلى تقييم الأسباب الرئيسية لعدم الامتثال للعلاج بين مرضى ارتفاع ضغط الدم

المنهجية :أجريت دراسة مقطعية في العيادة الاستشارية لمستشفى الصدر التعليمي في البصرة من ١ أبريل ٢٠٢١ إلى ١٥ سبتمبر ٢٠٢١، وشملت ٣٨١ مريضًا تم تشخيصهم مسبقًا بارتفاع ضغط الدم من قبل أطباء مختصين. تم جمع البيانات باستخدام استبيان ومقابلات مباشرة.

النتائج :أظهرت الدراسة أن (٤٤,٤٪) من المشاركين يبلغون ٦٠ عامًا فأكثر، (٦٠,٤٪) منهم إناث، وأن النسبة الأكبر كانوا ربات منزل (٤٤,٤٪) يليهم المتقاعدون (٢٤,٤٪). معظم المشاركين كانوا متزوجين ويمتلكون مستوى تعليمي أقل من التعليم الثانوي، و(٥١,٢٪) منهم كانوا ذوي وضع اقتصادي متوسط.
فيما يتعلق بالخصائص السريرية للمشاركين، كان ٦١,٤٪ منهم قد تم تشخيصهم بارتفاع ضغط الدم، معظمهم كانوا بدون أعراض، وأكثر من نصفهم لم يكن لديهم أمراض مصاحبة أخرى. أظهر معظمهم امتثالًا جيدًا للعلاج التقليدي، ولكن فيما يتعلق بالامتثال للعلاج الخافض للضغط، كانت النسبة الأعلى لا تلتزم إما بالوقت الذي وصفه الطبيب أو بالجرعة أو التكرار. أكثر من نصفهم توقفوا عن العلاج عند الشعور بالتحسن، وحوالي نصفهم توقفوا عن العلاج عند الشعور بالسوء بسبب الآثار الجانبية للأدوية. الغالبية لم يتأثروا بتكلفة الأدوية. كما أظهر معظمهم امتثالًا ضعيفًا للفحوصات الطبية.

الاستنتاجات :خلصت الدراسة الحالية إلى أن معدل الامتثال بشكل عام كان منخفضًا بين المشاركين. العوامل التي أدت إلى تقليل معدل عدم الامتثال شملت كبار السن، مستوى تعليمي أعلى، التقاعد، وطول مدة المرض.

الكلمات المفتاحية :ارتفاع ضغط الدم، ضغط الدم، الأدوية، الامتثال للعلاج، البصرة.