

Effect of Health education on Blood Pressure Control & Life Modification in Hypertensive Patients: Sample from Primary Health Care centers, Al - Rusafa Sector/Baghdad

Sahar A E Al Shatari
FICMS

Yahya B H Al- Juboori
FICMS

Khelowd Salih
D. FM

Alaa Safaa Abed
MBChB

Ahmed Sabbar Gabur
PHC, IMOH

Sally A Witwit
PHC, IMOH

Shams Wisam Talib Al Tabtabaee
PHC, IMOH

Abstract:

Background: Health education is very important to control hypertension in patients with it.

Objectives: To explore the effect of health education on blood pressure control by modifying the lifestyle of patients who visited the Rusafa sector centers PHCs-Baghdad 2018.

Method: A cross sectional study with an analytical element conducted during the period 1 Feb - 31 May 2018; by taking a sample of patients who visited these centers during this period. Those who were diagnosed with hypertension six months and more; pregnant women were excluded; 108 patients were interviewed using a questionnaire based on the American Family Physicians Association manual, demographic-social information, diagnosis-date, visiting-regularity, compliance, doctors & nurses communication skills, lifestyle, measure fasting/random blood glucose and BMI.

Results: The doctor's visiting was regularly in 93(86%), two thirds were diagnosed within 5 years, only 25(23.41%) were smokers during diagnosis, 16(64%) received health education about smoking cessation, and four (25%) discontinued. Health education about sports activity received by 71(65.74%) of the patients, saturated /unsaturated fats 98(90.74%), salt intake 102(94.44%), most of them follow these instructions, all of which have a strong statistical relationship. 43(39.81%) had a weak drug commitment, 34 (31.48%) had high adherence to medication, 30(27.78%) had average commitment, a strong relationship with their monthly income and doctor's communication skills.

Conclusion: Health education has a significant relationship with all studied variables to control hypertension except smoking.

Keywords: Health Education, Blood Pressure Control, Lifestyle Modification, Morisky Scale, Communication Skills,

Introduction:

Hypertension (HT), also known as high blood pressure (HBP), is long term medical condition in which the arterial blood pressure is persistently elevated. ⁽¹⁾

Long term high blood pressure (HBP), however, is risk factor for coronary artery disease, stroke, heart failure, atrial fibrillation, peripheral vascular disease, vision loss, chronic kidney disease, and dementia. ⁽²⁻⁵⁾

Hypertension is a major public-health challenge worldwide because of its high prevalence and concomitant risks of cardiovascular, cerebral and kidney diseases, as well as being the leading risk factor for mortality and disability globally; and it is the most common primary diagnosis in United States (USA) with an estimated direct and indirect cost of HT is 46.4 billion \$ in 2010. ^(6, 7)

Globally, HT affect over one billion people, with an overall prevalence of around 40% in adults aged 25 and over in 2008. HT is also responsible for at least 45% of deaths due to heart disease and 51% of deaths due to stroke. ⁽⁸⁾

For most medical conditions, correct diagnosis and effective medical treatment are essential to a patient's survival and quality of life. A significant barrier to effective medical treatment, however, is the patient's failure to follow the recommendations of his /her physician or other healthcare provider. Patient nonadherence, sometimes called noncompliance- can take many forms; the advice given to patients by their healthcare professionals to cure or control disease is too often misunderstood, carried out incorrectly, forgotten, or even completely ignored. Nonadherence carries a huge economic burden. Yearly expenditures for the consequences of nonadherence have been estimated to be in the hundreds of billions of dollars. ⁽⁹⁾

Modern healthcare systems are designed to fulfill needs of the patient, his system environment and other determinants of the treatment with proper support of technical aids. A whole system of care is compatible to the technical solutions and organizational framework based on legal rules. ⁽¹⁰⁾ A meta-analysis of controlled studies in China found that community interventions provided by

primary care professionals in China remain effective for managing patients with hypertension. ⁽¹¹⁾

In the WHO Eastern Mediterranean Region, two out of five adults are estimated to have high blood pressure. Develop and test service delivery reforms that combine health promotion, prevention, screening and treatment, as well as providing a continuum of care, is one of its recommendation. ⁽¹²⁾

Study done in South Korea found the effects of a hypertension education programs worked differently for groups, more customized hypertension management programs need to be targeted at each group to improve the effectiveness of hypertension education programs. ⁽¹³⁾

Other study done in Brazil found that health education was effective in incentivizing the adherence to non-pharmacological treatment in arterial hypertension, evidenced by the relevance of the adoption of these educational strategies for health professionals. ⁽¹⁴⁾

Study done in Uzbekistan found both drug adherence and BP control rate were suboptimal and significantly associated with patients' hypertension knowledge, and the study specifies potential areas of hypertension education that could be improved by patients' knowledge of hypertension. ⁽¹⁵⁾ Same as other study done in Algeria. ⁽¹⁶⁾

Another study done in Sri Lanka revealed that inadequate knowledge on hypertension, its complications and management strategies was seen and targeted health education strategies are urgently needed to improve knowledge to prevent consequences of poorly controlled hypertension. ⁽¹⁷⁾ Study done in Basra found a significant association between certain life style risk factor. Early detection for hypertension and education health program regarding life style behavior was high recommended. ⁽¹⁸⁾

According to world health organization, non-communicable diseases report, Iraqi profiles 2018, Raised blood pressure for adults aged 18+ (%), was in male 20% & 19% in female and total 19% in 2015. ⁽¹⁹⁾

Iraqi Ministry of Health had instruction and health educational letters, for PHC workers, given to hypertension patients about the smoking stoppage, exercises, food instruction, nutrition, salt restriction and disease seriousness and complications and drugs important and patients' compliance. ⁽²⁰⁾

Objectives:

- To explore the health education effect on Hypertensive control and life-style modification in hypertensive patient attend six PHCs in Al Rusafa sector -Baghdad 2018.

Patients and Methods:

A Cross sectional study with analytic element was conducted by recruiting all patients who attended six of al-Rusafa sector PHCs and had diagnosed since six months at least with hypertension, according to guide of Iraqi Ministry of Health(any patient had confirmed the high blood pressure to him/her in two visits separated with two weeks at least). Pregnant women were not included in the sample. During four months of planned data collection; 108 hypertensive patients (who visit the PHC during this period) were enrolled in this study and were interviewed by questionnaire adapted from the American family physician association and opinion of three community medicine specialist, five family physicians, and three internal physicians taken in consideration.

A pilot study with 10 patients. The questionnaire consisted of socio-demographic (age, gender, educational level, marital status), date of diagnoses, follow up visits regularity, (5 Q) on health education adapted from the American family physician association guideline, (1Q) on his/her opinion about his/her compliance and (8Q) on doctors and nurse communication skill, (8Q) on lifestyle modification, measuring fasting/random blood sugar, height, weight& the body mass index. The data collection was carried out over a period from 1st Feb to 31st May/2018, after an ethical and scientific approval was confirmed from the Al Rusafa /Baghdad directorate.

Inclusion criteria:

hypertensive patients (except pregnant women) attending the primary health care centers during the four months of planned data collection, who were diagnosed for six months at least, were involved in this study.

Scoring system:

Self-report {Morisky 8-Item Medication Adherence Scale (MMAS)}

Eight questions scored: one for no, zero for yes, results classified into three categories: good compliance (score=8), Medium compliance

(score=6-7) and low compliance (score less than 6).⁽²¹⁾

Communication skill:

(Understand my disease, understand disease seriousness, understanding drugs & treatment, understanding complication & dangers, doctor

explain my disease, doctor explain drugs & management, doctor explain cost & benefit, dr. communication is very good help me to follow his all counseling): considers good if the patient answer yes for 8-5 items is done, weak if 4-0 items.⁽²²⁾

Blood pressure level ⁽²⁰⁾:

a) Normal blood pressure < 140 and <90	c) Stage 2 hypertension 160-179 and/or 100-109
b) Stage I hypertension 140-159 and/or 90-99	d) Stage 3 hypertension ≥180 and/or ≥110.

Statistical analysis:

Data entry and statistical analysis done by using SPSS ver.23, frequencies and percentage, chi square and P value ≤ 0.05 consider significant.

Results:

One hundred and eight hypertensive patient involved in this study, 40(37%) patient aged 50 -59 years, 34(31.4%) complete secondary school, 86% visiting doctor regularly, and two- third of them diagnosed within (6 months - 5 years) as shown in table (1), fig (1) and (2).

The study revealed that only 25(23.41%) patients were smokers during the diagnosis of hypertension firstly, 16 (64%) patients received health Education about stopping smoking, and only four (25%) of them stopped smoking while six (37.5%) of them decrease the average smoked cigarettes/day, and 4(44.44%) patients decreased smoking without receiving health education and all that with no-significant relation, shown in table 2. Seventy-one (65.74%) patients received Health Education about exercises, and 38(53.52%) of them had practicing exercise, while only 8(21.62%) they were practicing it; without health education, with

Significant relation (p value= **0.001**) as appeared in table (3).

Increase unsaturated fat and decrease saturated fat are important advice to hypertensive patients. In current study 98(90.74%) patients received such advice, most of them increase unsaturated fat and decrease saturated fat all the time since the health section occurred and some of them do that sometimes (8 patients, 7 patients respectively) but 14 patients, 12 patients respectively did not do that at all. Both were with high significant relation (0.005, 0.002 respectively, as shown in Table (4). According to table (5), most of the patient (102) educated about the lowering of salt intake and it's important to control their blood pressure and most of them (86) did that, and with significant relation (P value= 0.012) The study revealed that according to Morisky Medication Adherence Scale, the highest percentage 44(39.81%) had weak Medication Adherence, followed by high Medication Adherence 34(31.48%) and middle Medication Adherence 30(27.78%), and there is significant relation with patients' monthly income (p value= 0.023) and there is highly significant relation with their doctor communication skills (p value= 0.002) as shown table (6).

Table 1: Distribution of studied sample according to demographic characteristics:

		N	%
Age	< 40	9	8.3
	40-49	20	18.5
	50-59	40	37.0
	≥60	39	36.1
Gender	male	26	24.1
	female	82	75.9
Educational level	0-5 years education	24	22.2
	complete primary	31	28.7
	complete secondary	34	31.5
	institution and more	19	17.6
Married condition	currently not married	17	15.7
	currently married	91	84.3
Income / month	< half million	58	53.7
	half million-million	35	32.4
	> million	15	13.9
Total		108	100.0

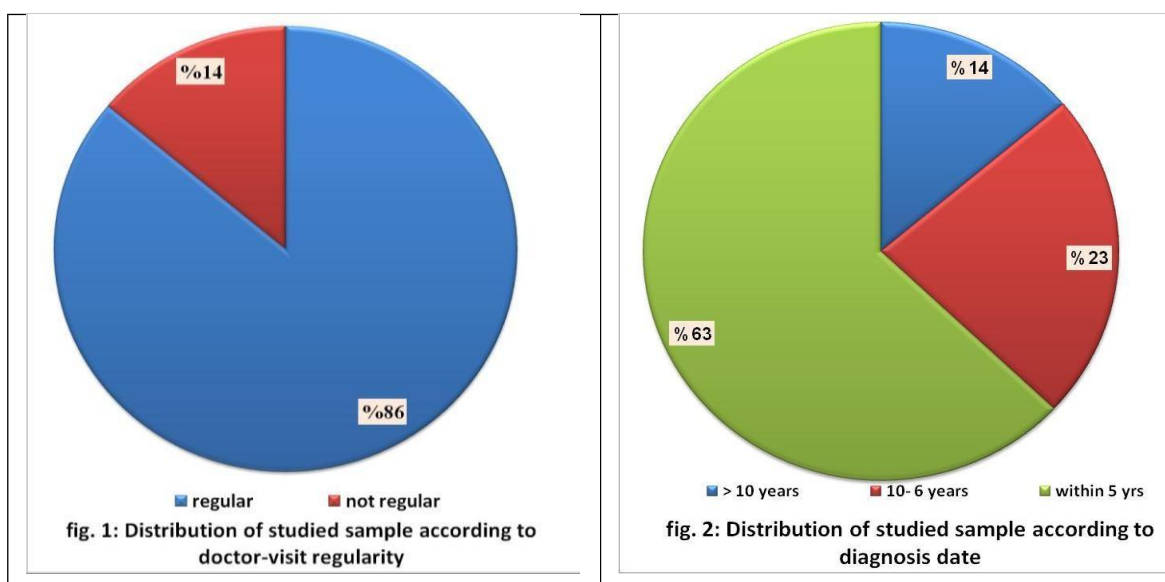


Table 2: Relation between the patients' received Health Education about smoking and smoking stopping:

		stop smoking			Total
		yes	no	decrease smoking	
Health education about smoking	yes	4(25%)	6(37.5%)	6(37.5%)	16(64%)
	no	0	5(55.56%)	4(44.44%)	9(43%)
Total		4(16%)	11(44%)	10(40%)	25(100.0%)
P value = 0.253					

Table 3: Relation between the patients' Health Education about exercises and their practicing exercises

		Practicing exercise		Total
		yes	no	
health education about Exercise	yes	38(53.52%)	33(46.47%)	71(65.74%)
	no	8(21.62%)	29(78.37%)	37(34.25%)
Total		46	62	108
		P value= 0.001		

Table 4: Relation between the patients' receiving Health Education about fatty food and their increase unsaturated fat and decrease saturated fat

		increase unsaturated fat intake			decrease saturated fat intake			Total
		yes	sometimes	no	yes	sometimes	no	
fat Health Education	yes	76	8	14	79	7	12	98
	no	3	2	5	3	3	4	10
Total		79	10	19	82	10	16	108
		P value = 0.005			P value = 0.002			

Table 5: Relation between the patients' receiving Health Education about Salt and their salt intake

			Practicing low-salt intake			Total
			yes	sometimes	no	
Salt Health Education	yes		86	6	10	102
	no		3	0	3	6
Total			89	6	13	108
			P value= 0.012			

Table 6: Relation between the patients' Morisky Medication Adherence Scale and their income / month and Doctor Communication

		Morisky Medication Adherence Scale			Total	P value
		high	middle	weak		
income / month	< half million	14(24.14)	20(34.48)	24(41.38)	58	0.023
	1/2 million- million	10(28.57)	9(25.71)	16(45.71)	35	
	> million	10(66.67)	1(6.67)	4(26.67)	15	
Doctor Communication	good	28(44.45)	12(19.04)	23(36.50)	63	0.002
	weak	6(13.34)	18(4%)	21(46.67)	45	
Total		34	30	44	108	

Discussion:

Hypertension is the most significant, preventable cause of cardiovascular and renal complications and premature death. ⁽²³⁾

The distribution of the disease in these parameters -age, educational level, married condition, income /month - is going with normal distribution of them in the community except in gender- females 82(75.9%) are more affected This is normally in Iraq where most of the PHCs clients are females either as patients or with their children, while most of males are working in the morning time. ⁽²⁴⁾ Also this is consistent with Iraqi NCD survey in which females seemed to seek advice

more than males. ⁽²⁵⁾ And same result was found in other study done in Québec, Canada. ⁽²⁶⁾

Age distribution is the same as normal distribution of the disease in the community and that's due to the nature of the disease which mostly involves the ages of 40years and above and also due to the screening program which also involves these ages. The increase in blood pressure with age is mostly associated with structural changes in the arteries and especially with large artery stiffness. ⁽²⁷⁾

Increased the percentage of diagnosis with advance of years and especially last five years may be due to improved health services, and developing

of hypertension screening program with time. Screening System and Comprehensive Care for Hypertension and Diabetes at Primary Health Care Level in Iraq has evident that more than 16% of the PHC attendant adults of 25 years and older were with undiscovered high blood pressure and this is expected to be doubled by the year 2012.⁽²⁸⁾ While in 2018 raised blood pressure for adults was in male 20% & female 19% and total 19% in 2015.⁽¹⁹⁾

The study revealed that only one-fifth of patients were smokers during the diagnosis of hypertension firstly, this is similar to the Iraqi STEP survey 2015 which found smoking parameters among Iraqi adults was 20.3%.⁽²⁹⁾

Hypertension is powerful independent contributor to cardiovascular morbidity and mortality on average conferring a threefold increase in risk at all ages and in both sexes. The risk of cardiovascular morbidity and mortality is also greatly affected by cigarette smoking (increase risk).⁽³⁰⁻³⁴⁾

In one study they found that; the most effective variable for quitting or reducing smoking was patients' level of education.⁽³⁵⁾

Exercise programs that mostly involve endurance activity prevent the development of hypertension and lower blood pressure (BP) in adults with normal (BP) and those with hypertension. This can be explained the importance of exercise as a part of effective treatment and as a measure of prevention.⁽³⁶⁻⁴⁰⁾

In this study, although near half of those who had received education about exercise, were compliance but it appears significant and can improve with time.

Increase unsaturated fat and decrease saturated fat are important advice to hypertensive patients, in current study majority of patients received these advice, most of them follow that all the time with significant relation. A fruitful education was with good compliance of patient.

Interventions that reduce total fat intake can effectively lower systolic and diastolic blood pressure (BP). In previous epidemiologic studies, BP has been shown positively correlated with saturated fats intake & inversely correlated with mono-unsaturated and polyunsaturated fats intake.^(41, 42)

Current study show most of the patients educated about the lowering of salt intake and most of them did that, and with significant relation. Dietary salt intake has significant relation to hypertension. Over the past century; salt has been the subject of intense scientific research related to blood pressure elevation and cardiovascular mortalities. Moderate reduction of dietary salt intake is generally an effective measure to reduce blood pressure.⁽⁴³⁾

The study revealed that according to Morisky Medication Adherence Scale, the highest percentage had weak Medication Adherence, followed by high Medication Adherence and then middle Medication Adherence, and there is significant relation with patients' monthly income; this is may be due to availability of the medication price. Also there is significant relation with their doctor's communication skills, which is very important, whenever need to increase patients' Medication Adherence, we must work on doctor communication skills. This result is similar to previous study done in Marjan Teaching Hospital/Babylon.⁽⁶⁾

A study done in psychiatry and behavioral sciences department, University of Miami Miller School of Medicine, found Economic factors pertinent to medication adherence include whether patients have financial resources to pay for the medication, and Patients' relationship with their physician as well as the physician's communication style can affect adherence.⁽⁴⁴⁾

Medication Adherence is very important to reach the patients/doctors' target, the result show patients with low income had weak Morisky Medication Adherence Scale, that is may be due to not always effort many to buy the drug and can miss medication several times when it's not available due to money shortage the drug expensive.⁽⁴⁵⁾

Other factor which can affect those patients medication adhesion; was doctor communication skill, understanding the patients disease, drugs and their cost, side effects and benefit of adhesion, and that the study revealed it with significant relation. This is agreed with a self-administered cross-sectional survey which conducted for older patients visited a community senior center.⁽⁴⁶⁾

Other study done in Iran found that Patients' satisfaction resulting from building the relationship and empathy with physicians appeared to be associated with medication adherence among hypertensive patients.⁽⁴⁷⁾

Another study done in Malaysia found that Physician-patient interaction satisfaction is an important factor in achieving better medication adherence which also leads to better control.⁽⁴⁸⁾

In other American study revealed that Medication adherence is influenced by numerous variables. Trust, communication and empathy are not easily measured by current administrative databases but are associated with medication adherence. These factors may have a far greater influence on the medication behaviors of patients and explain the elusive challenge of improving adherence.⁽⁴⁹⁾

Conclusion:

Most cases of hypertension are 50 years and over, females, married, below half million monthly income, regular doctor visiting and mostly

diagnosed in last five years. Health education had significant relation with all parameters studied in this research (to control hypertension) except on smoking with no significant.

Recommendation

Enforce non pharmacological lifestyle modifications as the first line of therapy, including increasing levels of physical activity&increase their medication adherence. And increase doctors/nurses training to effective education.

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