Effectiveness of an Instructional Program Concerning Non-Pharmacological Guideline on Controlling Essential Hypertension among Patients at AL-Sader Hospital in AL-Najaf AL-Ashraf City

فاعلية البرنامج الارشادي المتعلق بالتدابير غير الدوائية في السيطرة على فرط ضغط الدم الاساسي بين المرضى في مستشفى الصدر في مدينة النجف الاشرف

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المستخلص

الهدف : ايجاد فاعلية البرنامج الارشادي في التداخلات غير الدوائية للسيطرة على فرط ضغط الدم

المنهجية: دراسة شبه التجريبية إجريت في مستشفى الصدر التعليمي للفترة من 8 أيلول 2019 إلى الخامس والعشرين من أذار 2020 ، لمعرفة فاعلية البرنامج الارشادي للتداخلات اللادوائية للسيطرة على فرط ضغط الدم الأساسي بين المرضى في مستشفى الصدر في مدينة النجف الاشرف، تم اختيار عينة هادفة تكونت من (50) مريض تم تشخيصهم مسبقا بفرط ضغط الدم الأساسي

تم بناء استبيان لتقييم فاعلية البرنامج الارشادي للسيطرة على فرط ضغط الدم الأساسي وتكونت من أربعة أجزاء

الجزء الأول: شمل البيانات الديموغرافية للمرضى هي (الجنس ، العمر ، مستوى التعليم ، الحالة الاجتماعية ، الحالة الاقتصادية ، المهنة).

الجزء الثاني: شمل بعض السلوكيات الصحية للمريض مثل التمارين (النشاط البدني) والوزن والطول (مؤشر كتلة الجسم) وقراءة ضغط الدم.

الجزء الثالث: قائمة الفحوصات المختبرية

الجزء الرابع: تالف من محورين، الاول متعلق بمعارف المرضى عن فرط ضغط الدم وتكون من (15) فقرة والمحور الثاني تعلق بنظام داش المتكون من (13) فقرة.

تم تحقيق صحة الاستبانة والبرنامج الارشادي من خلال عرضها على 10 خبراء، وتم استخدام الاحصاء الوصفي والاستدلالي لتحليل نتائج الدراسة

النتائج: أشارت نتائج الدراسة بفاعلية البرنامج الارشادي المتعلق بالتداخلات اللادوائية على فرط ضغط الدم من خلال تحسين قراءات ضغط الدم من مستويات عالية لما قبل البرنامج الى مستويات ادنى لما بعد البرنامج الارشادي حيث كانت نسبة الضغط الطبيعي صفر % في الاختبار القبلي وارتفعت النسبة الى 22% في الاختبار البعدي ونسبة فرط ضغط الدم المرحلة الثالثة (من 180 / 110) فما فوق فقد انخفقض من نسبة 44% في الاختبار القبلي الى 8% في الاختبار البعدي

التوصيات: أوصت الدراسة بضرورة العمل بالدليل الارشادي العالمي (داش) وتطبيقه على جميع المراجعين الى المؤسسات الصحية المصابين بفرط ضغط الدم الاساسي من قبل وزارة الصحة والمراكز الصحية

الكلمات المفتاحية: فاعلية برنامج ارشادي ، اللادوائية ،سيطرة ، فرط ضغط الدم الأساسي ، مستشفى الصدر.

Abstract

Objective: The aims of present study to detect the effectiveness of instruction program of non-pharmacological guideline on blood pressure and laboratory test.

Methodology: A pre-experimental study was conducted in Al-Sader Teaching Hospital from 8th of September 2019 to 25th of May 2020, in order to find out the effectiveness of instruction program concerning non-pharmacological guideline on controlling essential hypertension among patients. A non- probability (purposive sample) of 50 patients with essential hypertension is selected. Those patients are already diagnosed with Essential Hypertension and had already used the medication and they visited the hospitals for treatment or follow-up or both. A questionnaire is constructed to assess the effectiveness of the instruction program for controlling essential hypertension which consist of four part

Part one: It is concerned with the patients' socio-demographic data which include (gender, age, level of education, marital status, economic status, and occupation)

Part two: Consist of patient health behavior which as exercise, weight, height and assessing of BP.

Part three: included list of Laboratory test

Part four: deals two domain related to patient's knowledge about hypertension which as 15 items and Second domain related to DASH regimen which as 13 items.

The validity of the questionnaire and the instructional program had been achieved by 10 panel of experts, the descriptive and inferential statistics was used to data analysis of the results.

Results: The results of the study indicated that the stage of hypertension according to category of hypertension was 44% stage 3 the pre-test and their hypertension was improved in the post-test where become 26% prehypertension, and 22% norm tension.

Recommendations: The study recommended that the instructional guideline (DASH) should be used and applied to all patients' to health institutions with essential hypertension by the Ministry of Health and health care centers.

Keywords: Non-pharmacological, Controlling blood pressure, Essential hypertension, DASH regimen

Introduction

Hypertension is a very serious medical condition of risk of heart attack, stroke, kidney failure and blindness. It is one of the leading causes of premature death worldwide, of the 1.13 billion people with hypertension, less than 1 in 5 control it. (1)

There are more than 3 types of hypertension that may affect humans and for each type of hypertension there is a special diagnosis and effective treatment types are: primary hypertension, rebound hypertension, and secondary hypertension. (2)

Primary hypertension also called essential hypertension; denotes high blood pressure from an unidentified cause, rebound hypertension: blood pressure that is controlled with medication and that becomes uncontrolled (abnormally high) with the abrupt discontinuation of medication, secondary hypertension: high blood pressure from an identified cause, such as renal disease (3)

Non-pharmacological treatment is the basis of antihypertensive therapy. It is recommended that healthy lifestyle should be maintained regardless drug treatment, including healthy diet, regular physical activity, smoking cessation, alcohol restriction, maintaining ideal weight, improving sleep and keeping warm (4)

Factors that influence blood pressure variability are circumstances of measurement, temperature, respiration, bladder distension, emotion, pain, exercise, age, meals, race, tobacco alcohol, and diurnal variation (blood pressure lowest during sleep). (5)

Methodology

A pre-experimental design study conducted between 8th of September 2019 to 25th of May 2020. in Al-Najaf Al-Ashraf City, Najaf Health Directorate Al-Sader Medical City. A Non- Probability (purposive Sample) of 50 patients with Essential Hypertension is selected, the researcher constructed a questionnaire format based on program in order to reach the objectives of the study, which consists of three parts; First part: It is concerned with the patients' socio-demographic data that include (gender, age, level of education, marital status, level of income, and occupation), also physical activity, weight, height, and diagnosis period. Second part: includes list of important investigation that contain 16 items and blood pressure readings Third part: This section contains two main domains in the research First domain: concerning Patient knowledge of essential hypertension 15 items. Second domain: concerning Patient knowledge about the Dash Diet: where the DASH A brief diet Approach to stop Hypertension, which contain 13 items. The content validity of the present program and instruments was established through a panel 10 experts. The reliability of the research instrument is acceptable and sufficient to evaluate the sample according to Cronbach's Alpha value 0.94. Therefore, the instrument is reliable to test research phenomenon. The data was analyzed through the use of the Statistical Package of Social Sciences (SPSS) version 23.0 through descriptive statistics: frequencies, and percentages and arithmetic mean were

used in tables in order to get the total results of the sample and to make a comparison between the variables. and statistical inferential: Analysis of variance (ANOVA) for equality of means (testing of coincidence for differentiation of means parameter). It is used to determine the significant differences between knowledge domains of patients and their socio-demographic characteristics at $p \leq 0.05$ levels

Ethical considerations

The Institutional Review Board (IRB) in college of nursing /university of Baghdad reviewed contents of program and questionnaire before conducting a study. Informed consent was taken orally before participating in the study. After that information regarding study title and objectives had been given. Two official requests were submitted through the College of Nursing / University of Baghdad to medical city directorate/ Ministry of Health (MOH) to take approval for data collection from Iraqi center for cardiac disease and Al-Karkh health directorate/ Ministry of Health (MOH) to take approval for data collection from Ibn-Albetar specialist center for cardiac surgery in Baghdad city.

Result

Table (1): Distribution of the Study Sample by their Socio-demographic Characteristics

Variables	Classification	Frequency	Percent
Age/ years	19 – 28	3	6
	29 – 38	7	14
	39 – 48	12	24
	49-58	8	16
	Above 58	20	40
	M±SD	52.9± 17.3	
	Total	50	100
Gender	Male	30	60
	Female	20	40
	Total	50	100
Educational level	Not read and write	10	20
	Reads and writes	9	18
	Primary	3	6
	Medium	7	14
	Secondary	5	10
	Diploma	5	10
	University and above	11	22
	Total	50	100
Marital status	Single	8	16
	Married	29	58

	Widow	11	22
	Divorced	2	4
	Total	50	100
Economic status	Low	33	66.0
	Middle	15	30
	High	2	4
	Total	50	100
Occupation	Governmental job	11	22
	Privet job	4	8
	free business	10	20
	Retired	18	36
	Housewife	7	14
	Total	50	100

Table 1: revealed that the highest percentage of patients at age group (58 and above) years which of **40%**, most of them was males which of **60%** . Regarding the educational level the highest percentage **22% was** graduated from university and above of education, **58%** of them was married at low economic status which of **66%**, high percent of the study sample was retired which of **36%.**

Table (2): Health Behavior of the Study Sample at Pre and Post-test

Variables	Classification	Pre-test one Group NO=(50)		Post-test one Group NO=(50)	
		Frequency	Percent	Frequency	Percent
Exercise	No	31	62	26	52
	Yes	19	38	24	48
iF yes exercise Training	Monthly	12	63	1	4.2
	Weekly	2	11	7	29.2
	Daily	5	26	16	66.6
Time of exercise (iF yes)	Less than 30min	17	90	15	62.5
	More than 30min	2	10	9	37.5

Table 2: shows the health behavior of the study sample that **38%** of them doing exercise in pre-test while the percent change to **48%** in post-test. Concerning the item if the patient doing exercise daily in pre-test, the percent was **26%** while in the post test was **66.6%**. The time of exercise more than 30 minutes in pre-test was **10%** while the percent change it to **37.5%** in post-test.

Table (3): Body Mass Index and Blood Pressure Reading of the Study Sample at Pre and Post-test

Table 3: shows the results of BMI was changes from pre-test to post-test as

Variables	Classification	Pre-test study Group n=50		Post- test study Group n=50	
		Freq.	%	**Freq.**	%
BMI	Skinny<18.5	5	10	1	2
	Normal weight (18.5–24.9)	14	28	25	50
	Over weight (25–29.9)	23	46	16	32
	Obesity (30-34.9)	5	10	5	10
	Very obese= BMI of 35 or greater	3	6	3	6
Categories of hypertension	120-129/80-84 (Normotension)	0	0	11	22
	130-139/85-89 (Prehypertension)	1	2	13	26
	140-159/90-99 (stage1)	9	18	12	24
	160-179/100-109 (stage 2)	18	36	10	20
	More than 180/more than110(stage 3)	22	44	4	8

follows skinny **10%** change to **2%**, normal weight was **28%** change to **50%**, overweight **46%** change to **32%** at post-test. In regards the categories of hypertension also change from pre-test to post-test which as normotension was **0%** change to **22%**, pre-hypertension was **2%** change to **26%** stage1was **18%** change to **24%**, stage2 was **36%** change to **20%** stage 3 was **44%** change to **8%** at post-test.

Table (4): Effectiveness of the Instruction Program on Patients' Knowledge Regarding Hypertension and DASH Regimen

Domains	Period of measurement	Mean	Std. Deviation	t-value	Df	p-value
knowledge ' Patients about hypertension	Pre-test	1.977	0.48648	6.051	49	0.001 H.S
	Post-test	2.505	0.45696			
Patients' knowledge about the DASH regimen	Pre-test	1.789	0.54919	5.363	49	0.001 H.S
	Post-test	2.344	0.53930			

P Value: probability value; Df: degree of freedom; T value: t-test; Std. Deviation: stander; H.S = high significant

Table 4: Shows the effectiveness of the instruction program on the Patients' knowledge about hypertension and DASH regimen, that there were a highly significant between the pre and post-test of instruction program on patients' knowledge at p-value (0.001).

Table (5): Association between the Effectiveness of Instructional Program concerning Patient Knowledge about Hypertension regarding to Age, Gender, Educational level, Social status, Economic status, and Occupation

df= degree of freedom, F= F-value, S. = significant, N.S. = non-significant

Variables		Sum of Squares	df	Mean Square	F	Sig. P≤0.05
Age	Between Groups Within Groups Total	1353.394 1308.686 2662 80	16 33 49	84.587 39.657	2.133	0.032/S
Gender	Between Groups Within Groups Total	3.353 8.647 12 00	16 33 49	.210 .262	.800	.676/ N.S
Level of education	Between Groups Within Groups Total	155.314 203 06 358.320	16 33 49	9.707 6.152	1.578	.131/ N.S
Social status	Between Groups Within Groups Total	6.353 19.667 26 20	16 33 49	.397 .596	.666	.805/ N.S
Economic status	Between Groups Within Groups Total	5.177 10.603 15.780	16 33 49	.324 .321	1.007	.473/ N.S
Occupation	Between Groups Within Groups Total	28.661 61.359 90.020	16 33 49	1.791 1.859	.963	.514/ N.S

Table 5: revealed that there were significant association between effectiveness of instruction program and patient age, while there were no significant association between effectiveness of instruction program and patient gender, educational level, social status, economic status, and occupation at P≤0.05 level.

Table(6): Association between the Effectiveness of Instruction Program Concerning Patient Knowledge about the Dash Diet Regarding to Age, Gender, Educational level, Social status, Economic status, and Occupation

Variables		Sum of Squares	Df	Mean Square	F	Sig. P≤0.05
Age	Between Groups Within Groups Total	843.285 1818.795 2662 80	17 32 49	49.605 56.837	.873	.607/N.S
Gender	Between Groups Within Groups Total	3.939 8 61 12 00	17 32 49	.232 .252	.920	.560/N.S
level of education	Between Groups Within Groups Total	160.737 197.583 358.320	17 32 49	9.455 6.174	1.531	.146/N.S
Social status	Between Groups Within Groups Total	7.391 18.629 26 20	17 32 49	.435 .582	.747	.734/N.S
Economic status	Between Groups Within Groups Total	6.235 9.545 15.780	17 32 49	.367 .298	1.229	.298/N.S
Occupation	Between Groups Within Groups Total	25.558 64.462 90 20	17 32 49	1.503 2 14	.746	.735/N.S

df= degree of freedom, F= F-value, S. = significant, N.S. = non-significant

Table 6: revealed that there were no significant association between effectiveness of instruction program and patient age, gender, educational level, social status, economic status, and occupation at P≤0.05 level.

Discussion:

Throughout the data analysis in result, the characteristics of the study present show that the highest percentage of the study sample at (59 and above) conducted a study on ‘‘hypertensive patients to assess the medication adherence through instructional program", their characteristics of study was the age group is more than 48 years. The researcher opinion this result comes according to the nature of hypertension patients, and is more common in patients with advanced age, compared to younger age. Regarding gender, high percent of present study are males. These results indicate that men were higher than women. The results also came the researcher believe the men may be more exposed to risk factors for the nature of work and

lifestyle that reality imposes, such as smoking and work stress. [12]

High percent of participant in percent study was high education graduated. Evaluate the influence of illness acceptance on the adherence to pharmacological and non-pharmacological therapy in patients with hypertension, they revealed that a higher education was (40%) [7]

Additionally, the study results show that the marital status of participants is "married". conducted study about "Locus of control and anti-hypertensive medication adherence in Ghana". These study indicate that most participant are married. Also, most participants are over the age of 40 years old. The proportion of married couples is expected to be the highest. [14]

The researcher opinion about the high percent of men than woman that the social and economic burden on men and their roles in family may lead hypertension, the results of the research showed that in most of the study sample at low income started in their study to know the changes in adherence to non-pharmacological guidelines for hypertension among household they finding that high percent of them was Low income 25.3% . With regard to the occupation, most of the study sample are retired was highly percent. [16] conducted a study, improve patients for control of blood pressure the characteristics of their study was high percent of retired patients'. [5]

The effectiveness of instruction program on patients was clear improved, the patient healthy behavior, body mass index, and reading blood pressure at pre and posttest which as, the patient who doing exercise at pre-test was 38% while changes to 48% at posttest , 26% of them doing exercise daily at pre-test , and changes the percent to 66.6% at post –test ,and 10% doing exercise more than 30 mint, and change the percent to 37,5% at post-test . presented in their study that the percent of doing exercise at pre-test was 2%, and the percent was increased to 12% at post test of their instruction program on hypertension patients. [12]

The changes in body mass index was clearly improved from pre-test to post-test of instruction program which as the follows skinny 10% change to 2%, the normal weight 28% change to 50% overweight 46% change to 32% at post-test, shows in their study to identify the prevalence of hypertension among adults they presented that the overweight was high percentage among study participants.[7]

The reading of blood pressure for hypertension patients' who participate in present study was different from pre to posttest which as the change was in a stage of hypertension which as the risky stage(stage3) was 44% of participant reading of blood pressure at pre-test while the percent of reading was change to 8%, and the percent of reading for (stage2)was 36% at pre-test while change the percent to 20% at posttest ,and the reading of normal blood pressure was improved from 0% at pretest to 22% at posttest . These results revealed that the instruction program was effective on patient

knowledge, subsequently change the participant lifestyle. Evaluate the Beneficial effects of non-pharmacological in the management of essential hypertension. In a subgroup analysis, study on (male, female, African Americans, non-African Americans, hypertensive and non-hypertensive individuals). They funded that the DASH diet BP reductions (SBP and DBP by 11.6 and 5.3 mmHg, respectively) being more profound in hypertensive individuals. Concluded in their study "The effects of diet alone or in combination with exercise in patients with prehypertension and hypertension " after nutrition program that the normotension group and prehypertension group was raised the percentage among study group. SBP decrease (from 136.88 ± 5.9 mmHg to 117.82 ± 6.09 mmHg) and can decrease DBP (from 82 ± 3 mmHg to 77 ± 2 mmHg) [11] stated that the nonpharmacologic strategies have been help lower blood pressure and they founded that no significantly between the gender and hypertension knowledge. [9] [13]

The study by after nutrition program the normotension reading was raised the percentage among study sample. SBP decrease (from 136.88 ± 5.9 mmHg to 117.82 ± 6.09 mmHg) and can decrease DBP (from 82 ± 3 mmHg to 77 ± 2 mmHg) [9]

Revealed in their study about the role of nutrition and exercise programs in reducing blood pressure lifestyle modification emphasizing both diet and exercise was effective for lowering BP and should be favored over diet-only modifications [4]

The patients' knowledge about hypertension at pre-test was uncertain and incorrect which of 63.3%, while the result was change it at post-test which of was 43.3%, and the patients' knowledge about DASH regimen in pre-test was uncertain and incorrect that 77.85%, while was result in post-test was 53.8% founded in their study that The instructional program had a positive effect on this group of patients and this study demonstrated significant changes in their knowledge scores comparing between pre and the post knowledge, their results revealed that the knowledge was changed from moderate grade level in pre-test to high grade level in post-test. concluded study in their the influence of illness acceptance on the adherence to pharmacological and non-pharmacological therapy among patients with hypertension that the low percent of correct answers provided for items related to non-pharmaceutical treatment, diet, hypertension definition, and drug adherence revealed in their study about the role of nutrition and exercise programs in reducing blood pressure lifestyle modification emphasizing both diet and exercise was effective for lowering BP and should be favored over diet-only modifications [4] [12] [17]

The instructional program was high Significant between pre and post-test knowledge about hypertension and patient responses toward the DASH at p-value ≤ 0.001. finded in their study that there were a significant relationship between knowledge of hypertension and lifestyle modification among the respondents. [7]

There are statistically significant differences between the effectiveness of an instructional program concerning patient knowledge about hypertension with age at P≤0.05 found in their study that there were significant between Knowledge and compliance with age of patient at p≤0.05 level. [5]

There are no statistically significant differences between effectiveness program and gender, educational level, marital status, economic status, occupation, type of occupation and patients' knowledge about Dash diet. stated that the nonpharmacologic strategies have been help lower blood pressure and they founded that no significantly between the gender and hypertension knowledge. Stated that the adherence of patient to pharmacological and non-pharmacological therapy of hypertension was significant with the females, higher levels of education and Short duration of the disease. [11] [17]

Recommendation:

The study recommended that the instructional guideline (DASH) tray to used and applied to all patients' to your health institutions with essential hypertension by the Ministry of Health and health care centers.

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