

Patient satisfaction with nursing care and the role of nurses in the management of arterial hypertension

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ABSTRACT

HTA is estimated to be the cause of about 7.1 million deaths per year worldwide, as well as the cause of about 64.3 million disabled for life-years.

Purpose. Identification of best practices for improving the quality of nursing care in patients with high blood pressure. Comparison and analysis of patient satisfaction with nursing services. The use of a standard questionnaire among SR nurses in Peja, focused on the Department of Internal Medicine, and in the coronary unit in the role of nurses in the management of patients with hypertension; as well as their ability to educate these patients. For the realization of this paper, the partial research method was also used, which is carried out through questionnaires prepared and divided into descriptive and retrospective phases from the statistics obtained from the protocols of the Regional Hospital of Peja. Excel and SPSS programs.

Results. Total of 50 nurses from the regional hospital of Peja participated in the research Specialist ambulances and 200 patients. From the analysis of the hypotheses, we came to the conclusion that the management of nursing care and the perception of nurses regarding the information and education of patients have a positive influence on the management of nursing care of patients with HTA, this is proven through the correlation ($\rho=0.625^{**}$, value and $p=0.000$). The results hypothesis show that good nursing care practices as guidance through brochures, determination of appropriate therapy and hospital support have positive impact on patient satisfaction and Hypertension disease management arterial with correlation ($\rho=0.767^{**}$, p value=0.000).

Discussion. Well as in our country and in other countries, there is a lack of studies on the specific preparation of nurses and regulatory protection of NCD.

Conclusion. Education programs improve care, reduce re-hospitalization and increase quality of life and functional status of patients, as well as decrease mortality from HTA.

Keywords: satisfaction, patients, nursing care, hypertension

INTRODUCTION

HTA is estimated to be the cause of about 7.1 million deaths per year (12.8% of total deaths), worldwide, as well as the cause of about 64.3 million years of disability (4.4% of the total) [1].

In agreement with the US National Heart Lung and Blood Institute (NIHLB), HTA for adults is defined when the blood pressure is above: 130 mm Hg systolic pressure and above 80 mm Hg diastolic pressure or higher [2]. In another recommendation of the US National Heart Lung and Blood Institute (NIHLB), for hyperten-

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sion in 2003, the new blood pressure is added which is categorized as prehypertension: 120-139 mm Hg systolic pressure and: 80-89 mm Hg diastolic pressure [3,4]. About 90-95% of people with high blood pressure do not know the true cause of hypertension, but it is related to many risk factors: smoking, family history, overweight (obesity), alcohol consumption, inactive life (passive), stress, the food consumed, kidney diseases, diseases of the endocrine-hormonal system, narrowing of the coronary arteries. Arterial hypertension in most cases has no symptoms and is called a silent killer. Symptoms of hypertension are: headache, ringing in the ears, fatigue, difficulty breathing, irregular heart-beat, severe chest pain, nosebleeds.

HTA is divided into primary (usually affecting people over the age of 40) and secondary hypertension (which affects somewhere around 10% of the population, usually as a result of some other diseases). In 95-97% of people with high blood pressure the true cause of hypertension is not known.

Non-modifiable risk factors: age, ethnicity (hypertension is more severe and develops at younger ages in African Americans), sex (men ≥ 55 , women ≥ 65 , and the risk is higher for postmenopausal), family history.

Modifiable factors: obesity B.M.I. ≥ 30 Kg/m², Lack of physical activity (increases the likelihood of high blood pressure, vascular and heart disease, cerebral stroke and obesity), smoking (can damage blood vessels), excessive amount of salt in the diet (causes fluid retention), low amount of vitamin D in the diet (inhibits the renin-angiotensin-aldosterone system and improves endothelial dysfunction), excessive alcohol consumption, stress and unhealthy diet and lifestyle.

Patients at high risk of developing cardiovascular complications, central obesity (abdominal circumference in men ≥ 102 cm, and in women ≥ 88 cm), dyslipidemia (TC >4.9 mmol/L, LDL >3.0 mmol/L, TG >1.7 mmol/L), HDL (men <1.0 mmol/L, women <1.2 mmol/L), diabetes mellitus (fasting glucose ≥ 7.0 mmol/L, postprandial glucose >11.0 mmol/L) and chronic renal disease (GFR <30 mL/min/1.73 m², proteinuria >300 mg/24h).

The causes of malignant HTA are not very clear. It is not known for example: why a patient with HTA with high values causes faster damage to vital organs and another does not. Why in one case the brain is mainly damaged and in another the heart! Malignant HTA (emergency) is not a frequent occurrence. In the USA, where this problem has been studied, it occurs in about 1% of patients with chronic HTA. Most emergent HTA occurs in patients with secondary HTA, such as in the case of renal artery stenosis, pheochromocytoma, coarctation of the aorta, primary hyperaldosteronism and hyper and hypothyroidism. Other possible causes are pregnancy complications, the use of cocaine, the use of MAO inhibitors, oral contraceptives, the immedi-

ate withdrawal of alcohol, the immediate withdrawal of beta-blockers and the immediate withdrawal of alpha-stimulators [3,4].

Complications: hypertension causes damage to vital organs and also causes serious health problems such as coronary artery disease, cerebral stroke, or renal failure. Lack of treatment for years can cause damage to vital organs, hypertensive crises and lead to serious complications. In an untreated HTA: 50% die of SAK, or heart failure, 33% die of cerebral stroke, 10-15% die of renal failure. Acute death from HTA mostly results from cerebral insult or SAH. Those with rapidly increasing HTA are more likely to die from IRK. The diagnosis of hypertension should be based on at least 3 different measurements and depending on the case separated by 2 or more doctor visits. Physical and laboratory examinations can help to identify the secondary causes of hypertension, to identify the presence of other diseases and if there is damage to the signed organ. Initially, in the treatment of a hypertensive patient who presents himself to the doctor for the first time, small doses of selected medications are preferred. Choice of the initial medication: according to previous studies, any of the medications belonging to one of the classes of diuretics, ACE-inhibitors, Ca blockers, ARBs or B-blockers can be chosen as the first preference for the treatment of HTA.

THE PURPOSE OF THE PAPER

Indicators for the management and complications that can occur from arterial hypertension. Identification of the best practices for improving the quality of nursing care in patients with high blood pressure. Comparison and analysis of patient satisfaction with nursing services. The use of a standard questionnaire among SR nurses in Peja, focused on the Department of Internal Medicine, and in the coronary unit in the role of nurses in the management of patients with hypertension; as well as their ability to educate these patients.

Evaluation of patients satisfaction with nursing services and receiving advice on hypertension during their hospital stay. Evaluation of the knowledge of nurses for the education of patients in the shift of lifestyle.

Main hypotheses

Hypothesis 1. Management of nursing care and the perception of nurses regarding information and HTA patient education.

Hypothesis 2. To identify the best practices for improving nursing care in secondary care for TA.

Hypothesis 3. Patients perception of health services is a potential indicator of adequate and quality management of the nursing staff and the opinion of patients in the first approach with the nurses.

Hypothesis 4. The use of the questionnaire in order to identify the role of nurses in the management of patients with arterial pressure diseases and education for the prevention of complications of arterial hypertension.

Hypothesis 5. The content of advice received by nurses is an important indicator and valuable for the quality of care and hospital performance and positively affects recognition of risk factors and management of hypertension.

Alternative hypotheses

Hypothesis 1: Education to protect patients from risk factors has a positive effect on management of nursing care of patients with hypertension, and prevention of complications.

Hypothesis 2: The perception of patients according to the information, education and management of HTA from the side of nurses and their opinion on the first interaction with them, they have a positive effect in patient satisfaction to nursing care in the hospital.

MATERIAL AND METHOD

This research is cross-sectional and case-control, based on a prospective study conducted in the USA by the author Schlesinger, L.A., and J.L. Heskett, and research conducted at the Karachi Surgical Hospital (CHK) by Press Ganey Associates. 2005 “Physician and Patient Satisfaction”. Unpublished re-search report, and from research on “The Role of Nurses in Hospital Quality Improvement”, by authors Debra A. Draper, Laurie E. Felland, and research: Nurse Staffing and Quality of Patient Care by Beth A. Collins Sharp, Ph.D.R.N. from The Agency of Healthcare Research and Quality (AHRQ), through its Evidence-Based Practice Centers (EPCs). For the realization of this paper, the partial research method was also used, which is carried out through prepared and retrospective questionnaires from the statistics obtained from the protocols of the Regional Hospital of Peja.

INCLUSION CRITERIA IN THE RESEARCH

Nurses who worked at the Peja Hospital (those of The Coronary and Internal Medicine Unit, the specialist ambulance nurses, the Emergency nurses, the Neurology department nurses, (mainly the nurses who deal with patients with HTA) and patients of different ages who have been admitted to the Peja Hospital, from HTA during the year 01.01.2020- 01.10.2022 (22 Months).

Research exclusion criteria

Patients who were not admitted to the hospital because of HTA, and nurses who did not work in the wards where TA is treated.

Statistical analysis

Excel and SPSS programs were used for data analysis, while for testing data were used for descriptive analysis and for the validation of hypotheses was used

Bivariate correlation (Pearson correlation), partial correlation, independent sample t-test and on one another way.

RESULTS

We tested 200 patients: 100 women and 100 men. Age of the tested patients: from the age of 20-34 there were 25 patients, from the age of 35-49 there were 52 patients, from the age 50-64 were 70 patients and over 70 were 53 patients.

Descriptive results – nurses

Management of nursing care at the time of admission of patients to the Unit Coronary and Internal Medicine of the Regional Hospital of Peja.

TABLE 1. Management of nursing care at the time of admission of patients to The Coronary and Internal Unit of the Regional Hospital of Peja

Do you ask the patient about the time of first symptoms?	%
Yes	70.00%
No	30.00%
Do you record the patient's admission time?	%
Yes	65.00%
No	35.00%
Do you document the patient's symptoms on admission and during hospitalization?	%
Yes	48.00%
No	52.00%
Do you record the patient's vital signs on admission and during hospitalization?	%
Yes	100.00%
No	00.00%
Do you ask the patient about previous illness?	%
Yes	60.00%
No	40.00%
Do you ask the patient about risk factors for HTA?	%
Yes	45.00%
No	55.00%

In the group of questions, we see that 70% of nurses ask patients about the first symptoms, while 65% of them record the time of admission of patients. About 48% of nurses state that they record patients symptoms on admission and during hospitalization, while 100% of them state that they record patients vital signs on admission and during hospitalization. About 60% of nurses state that they ask patients about previous diseases and that only 45% of nurses state that they ask patients about the risk factors of HTA disease.

TABLE 2. Perception of nurses regarding the information and education of patients in Peja hospital

Do you think that the patient, during his stay in the hospital, receives sufficient information about his/her illness?	N	%
Yes	61	35%
No	149	65%
Do you think that the patient, during his stay in the hospital, receives enough information about the modification of risk factors?	N	%
Yes	50	25%
No	150	75%
Do you think that the patient, during his stay in the hospital, receives sufficient information about the drugs he will use?	N	%
Yes	198	98%
No	2	2%
Do you think that the patient, during his stay in the hospital, receives information about daily activities after discharge from the hospital and for eventual restrictions?	N	%
Yes	175	75%
No	25	25%
Do you think that the patient, during his stay in the hospital, receives enough information about the examinations diagnostics to which it is subjected, or to which it may be subjected?	N	%
Yes	180	80%
No	20	20%
Do you think that the patient, during his stay in the hospital, receives enough information about the possibilities of prevention and treatment of HTA disease?	N	%
Yes	130	65%
No	70	35%
During the hospital stay, do you tell the patient about the symptoms of hypertension and the complications caused by this disease?	N	%
Yes	83	48%
No	117	52%
During the hospital stay, do you educate the patient about nutrition and lifestyle changes?	N	%
Yes	110	55%
No	90	44%

Regarding the perception of nurses regarding the information and education of patients, we see that 35% of nurses think that during their stay in the hospital patients receive sufficient information about their disease, while only 25% think that they receive information about the modification of factors of danger. About 98% of nurses think that patients receive sufficient information about the use of drugs, while 75% of nurses say that during the patients stay in the hospital, they receive information about daily activities after discharge from the hospital and about possible restrictions. Regarding the information about the diagnostic examination of the patients, 80% of the nurses say that they receive enough information, while 65% of them say that

the patients during their stay in the hospital receive enough information about the possibilities of preventing and curing the HTA disease. 48% of nurses during the hospital stay tell the patient about the symptoms of hypertension and the complications caused by this disease.

TABLE 3. Management of nursing care for patients with HTA

Do you have information brochures for patients with high blood pressure?	N	%
Yes	0	0.00%
No	200	100%
Do you think that the nurse, in addition to other workloads in the ward, should also deal with patient education?	N	%
Yes	188	88%
No	12	12%
Do you think that patient clubs should be formed that deal with the education and support of patients after internal diseases?	N	%
Yes	160	60%
No	40	40%
Do you think that fast food increases blood pressure?	N	%
Yes	200	100%
No	0	0%
Should food contain less salt?	N	%
Yes	200	100%
No	0	0%
Should HTA patients have mid-meals rich in fruit every day?	N	%
Yes	130	65%
No	70	35%
Does food affect blood pressure?	N	%
Yes	200	100%
No	0	0%
Should you choose milk that has less fat and is it preferable to choose foods with fewer calories?	N	%
Yes	100	100%
No	0	0%
Does garlic help control blood pressure?	N	%
Yes	200	100%
No	0	0%
Should each patient be informed about the damage that smoking can cause?	N	%
Yes	200	100%
No	0	0%

As for the management of hypertension by the nurses of the Regional Hospital of Peja, 100% of them state that they do not have any brochure for patients in which they would have had the opportunity to be informed about high blood pressure, while 88% of the nurses think in spite of their work, they should also deal with educating patients about HTA disease. About 60% of nurses think that patient clubs should be formed that deal with the education and support of patients after internal diseases. As factors that affect blood pressure,

100% of nurses say that they are fast food, 100% of food that contains fiber, while 65% say that HTA patients should have mid-meals rich in fruit and vegetables every day.

We see that 100% of nurses say that food has an impact on blood pressure, low-fat milk and foods with fewer calories should be chosen. Also, 100% of the nurses say that garlic helps control blood pressure, while smoking is a factor that affects the deterioration of blood pressure.

Descriptive results – patients

Patient satisfaction with hospital nursing care

Satisfaction of patients regarding nursing care in the hospital, where 200 patients were included in the research. From the results of the research, we see that 30% of the patients were asked by the nurses about the first symptoms of the disease, while 70% were not asked at all. Over 60% of patients say they know the date of hospitalization, while 40% do not. We understand that more than 79% of patients have had complaints or weakness, breathing difficulties, ringing in the ears during hospitalization, while 90% state that arterial pressure was measured during their hospitalization. About 33% of patients say that they were asked by nurses about previous illnesses, while 29.2% of them say that they were also asked about the risk factors of corneal disease and HTA.

TABLE 4. Patient satisfaction with hospital nursing care

Did the nurse ask you about the time of first symptoms?	N	%
Yes	50	30%
No	150	70%
Do you know the time of admission to the hospital?	N	%
Yes	110	60%
No	90	40%
Do you have complaints of weakness, breathing difficulties, ringing in the ears during hospitalization?	N	%
Yes	240	79.7%
No	60	19.3%
Is arterial pressure measured during hospitalization?	N	%
Yes	270	90%
No	30	10%
Did the nurse ask you about previous illnesses?	N	%
Yes	67	33.2%
No	133	66.8%
Has the nurse asked you about risk factors for corneal disease and HTA?	N	%
Yes	88	29.2%
No	112	70.8%

Perception of patients regarding information and education by nurses

We see that over 50% of patients received information about their illness during their stay in the hospital,

34% did not and 16% say they did not know. Regarding the modification of the risk factors that are threatened by this disease, only 45% of the patients received information in the hospital, 83.3% of them say that they received sufficient information about the use of the drugs they need. About 50% of patients say that they have received sufficient information about daily activities after discharge from the hospital and about possible restrictions. Only 30% of patients have received information about the diagnostic examinations they have undergone and may undergo in the future, while 35% of patients, during their stay in the hospital, have received sufficient information about the possibilities of preventing and curing HTA diseases. As it can be seen that 100 patients or 50% were hospitalized once, 30% or 70 patients were hospitalized twice and 20% were hospitalized more than three times due to arterial hypertension.

TABLE 5. Patients perception regarding information and education by nurses

During your stay in the hospital, did you receive enough information about your illness?	N	%
Yes	104	50.33
No	70	34.7
I do not know	26	16.0
During your stay in the hospital, did you receive enough information to modify risk factors?	N	%
Yes	90	45.7
No	80	30.3
I do not know	30	24.0
During your stay in the hospital, did you receive enough information about the drugs you will use?	N	%
Yes	150	83.3
I do not know	50	16.7
During your stay in the hospital, did you receive information about daily activities after discharge from the hospital and about possible restrictions?	N	%
Yes	100	50.0
No	60	27.0
I do not know	40	23.0
During your stay in the hospital, did you receive sufficient information about the diagnostic examinations that you underwent and that you may undergo?	N	%
Yes	60	30.0
No	100	50.0
I do not know	40	20.0
During your stay in the hospital, did you receive enough information about the possibilities of preventing and curing TA diseases?	N	%
Yes	70	35.0
No	100	50.0
I do not know	30	15.0
How many times have you been hospitalized for high blood pressure?	N	%
1 time	100	50.0%
2 times	70	30.0%
Over 3 times	30	20.0%

The opinion of patients in the first approach with the nurse in the Coronary and Internal Medicine Unit

We see that 100% of the patients stated that they never received information brochures from the nurses about the HTA disease. Over 83% of patients agree that nurses, in addition to their daily work, should also deal with patient education regarding the HTA disease. Regarding patient clubs for their education and support, about 53% of patients say that it would be necessary to create this club, 45.7% of them say that smoking is a factor that affects blood pressure, while 50% of them have the opposite opinion, and that 62% of patients say that alcohol consumption affects blood pressure.

TABLE 6. The opinion of patients in the first approach with the nurse in the Coronary and Internal Medicine Unit

Have you received information leaflets from nurses about HTA?	N	%
No	200	100.0
Do you think that the nurse, in addition to other workloads in the coronary unit, should also be involved in patient education?	N	%
Yes	150	83.3
I do not know	50	16.7
Do you think that patient clubs should be formed that deal with the education and support of patients after internal diseases?	N	%
Yes	115	53.0
No	78	43.0
I do not know	7	4.0
Does smoking affect blood pressure?	N	%
Yes	87	45.7
No	63	31.0
I do not know	50	23.3
Smoking avoids excessive appetite and smoking does not cause blood pressure to rise?	N	%
Yes	100	50.0
No	77	27.0
I do not know	23	23.0
Does alcohol consumption affect blood pressure?	N	%
Yes	162	62.0
No	18	18.3
I do not know	20	19.7

Comparative analysis

Questions for nurses and patients related to knowledge about risk factors

From the following results we see that when asked who should give information to the patient about the disease, we see that 30% of the nurses said that the nurses themselves should give this information, while 70% of them think that this information should come from the doctor. and no one said that the patient himself should be interested. On the other hand, patients have a relatively divided opinion in two groups, where

53.3% say that this information should be provided by the nurse, while 46.7% by the doctor and none said that the family member should provide information. Regarding the question of how many times blood pressure is measured in patients, 20% of nurses state that they do it twice during shift change, 15% at the request of the patient and 12% of them at the request of the doctor and 53% of nurses say I don't do it because the doctor does it himself.

TABLE 7. Results of responses from nurses and patients, related to knowledge about risk factors

Who should provide information to the patient about the disease?	Nurse		Patients	
Infirmery	15	30.0%	154	53.3%
Doctor	35	70.0%	46	46.7%
Do you measure your blood pressure?	Nurse		Patients	
Twice during my shift	12	20.0%	15	5.0%
Once during my shift/shift	\	\	10	3.3%
At the patient's request	6	15.0%	80	40.0%
At the request of the doctor	4	12.0%	24	20.0%
I don't do it because the doctor himself does it	28	53%	71	31.7%
Do these factors affect blood pressure control?	Nurse		Patients	
Food	/	/	33	16.0%
Addictions such as smoking and alcohol	/	/	27	13.0%
Physical activity	/	/	23	11%
Stress management and regular medication use	/	/	12	8%
All of the above	50	100.0%	105	55.0%
For stress management help?	Nurse		Patients	
Listening to relaxing music	8	12.613%		16.7%
Expressing feelings by crying	3	4%		19.0%
Expressing feelings by laughing	6	7%		7.0%
The company of people who know how to make humor	20	40%		23.3%
Continued smoking	\	\		9.3%
Choice of working problems, and muscle relaxation exercises	13	36%		24.7%

Patients have a different opinion about these aspects in relation to nurses, where 5% of them say that their blood pressure is measured twice during the nurses shift, 3.3% say that only once during the nurses shift, 40% of patients say that their pressure is measured only when there is a request from them, 20% when the doctor asks and 31.7% say that nurses do not measure pressure, because doctors do it. 100% of nurses emphasize that the main factors that influence high blood pressure are food, vices such as smoking and alcohol, physical activity and stress management and regular use of drugs. While patients have approximately the

same opinions, where 16% think it's food, 13% say it's vices like smoking and alcohol, 11% say it's physical activities, 8% stress management and regular use of drugs, and 55% think all together. Factors that affect stress management according to nurses: 13% say they are listening to soothing music, 4% is expressing feelings by crying, 7% is expressing feelings by laughing, 40% is the company of people who know how to make humor and 36% are the choice of working problems and exercises for muscle relaxation. Patients have relatively the same opinions in this regard, where 16.7% say that listening to soothing music is a factor for managing stress, 19% expressing feelings by crying, 7% expressing feelings by laughing, 23.3% company with people who know to make a mood, 9.3% the constant consumption of tobacco and 24.7% is the choice of problems by working and exercises to relax the muscles.

Questions for nurses and patients related to knowledge about risk factors and common medications used for HTN (circle 1, 2 and more in question 5, 7, 8)

As for the management of antihypertensive drugs, the nurses all unanimously say that antihypertensive drugs should be used only according to the doctor's instructions, they should be stored in separate places, their expiration date should be checked and if the patient does not feel well after the drugs at home, emergency services should be called or the nearest medical facility should be notified. While the patients have other opinions, where in the first case 30% of the patients say that they should use the drugs only when they are not well, with the doctor's instructions, 23.3% say that they should be kept in separate places and 100% say that the expiration date should be checked. As for counseling sessions, 7.7% of nurses say that yes, I do individual counseling sessions with each patient, 49.2% yes,

TABLE 8. Responses from nurses and patients related to knowledge about risk factors and common medications used for HTA

Management of antihypertensive drugs	Nurse		Patients	
He recommended the patients to use the drugs only when they are not well	/	/	70	30%
Medicines against high blood pressure should be used only according to the doctor's instructions	50	100%	200	100%
He recommended a special place for storing medicines	50	100%	50	23%
Before using the drugs, the expiration date should usually be checked	50	100%	200	100%
If after taking the medicine the patient does not feel well at home, he should call the emergency or report to the nearest medical institution	130	100%	200	100%
Do you practice counseling sessions for patients with high blood pressure?	Nurse		Patients	
Yes, I do individual counseling sessions with each patient	7	7.0%	\	\
Yes, when I have free time	24	49.2%	157	68 %
No, because we do not have space for health education of patients	16	39.2%	15	12 %
No, because I don't have that knowledge	3	3.0	28	20.0%
What are the risk factors for HTN that cannot be modified?	Nurse		Patients	
Legacy	50	100.0%	139	88.5%
Gender	27	53.8%	80	29.6%
Age	50	100.0%	170	85.0%
I have no information	/	/	30	11.1%
What are the modifiable risk factors for HTN?	Nurse		Patients	
Smoking	41	76.9%	200	100.0%
Diet, stress, hypertension	44	86.0%	160	53.0%
Total cholesterol	27	53%	120	40.0%
low HDL	24	49.6%	87	29.0%
How much physical activity should a patient with hypertension have during the day?	Nurse		Patients	
2 hours a day regardless of the patient's age	3	2.3%	13	10.0%
At least 30 minutes	37	28.5%	152	53.3%
up to 2 hours regardless of age	\	\	12	11.7%
30 minutes for seniors and up to 2 hours for young people	47	69.2%	23	25.0%
How should the patient with HTA be fed?	Nurse		Patients	
Food with as little salt and fat as possible, as much fruit and boiled vegetables as possible	130	100.0%	250	83.33%
Sweet and salty foods	/	/	/	/
Fast food	/	/	20	8.0%
Food with salt, fat and sweets	/	/	30	12.0%

when I have free time, 39.2% no, because we don't have space for health education of patients and 3.8% no, because I don't have that knowledge, while 68% of patients state that they receive individual counseling sessions and 12% do not, because nurses do not have space for health education of patients. 20% of patients say no, because they do not have that knowledge.

Nurses emphasize that the risk factors of the disease that cannot be modified are heredity, where 100% of nurses present it as the main factor, 53.8% say that gender is a factor, another 100% present age, while 88.5% of patients present it nor hereditary. hypertension disease, 29.6% gender, 85% say age and 11.1% have no information.

As for factors that can be modified, 76.92% of nurses see smoking as a factor, 86% diet, stress, 53.8% cholesterol and 49.6% low HDL. While 100% of patients see smoking as a repairable factor, 53% diet, stress, 40% cholesterol and 29% low HDL. Nurses say that 2 hours a day regardless of age, the person with HTA should have physical activities. This is what 2.3% of nurses think, 28.5% of nurses think at least 30 minutes a day, 30 minutes for the elderly and up to 2 hours for young people, about 69.2% of nurses think. 10% of patients say 2 hours a day regardless of age, 53.3% say at least 30 minutes, 11.7% 1 to 2 hours regardless of age and 25% say 30 minutes for the elderly and up to 1 hour for the young.

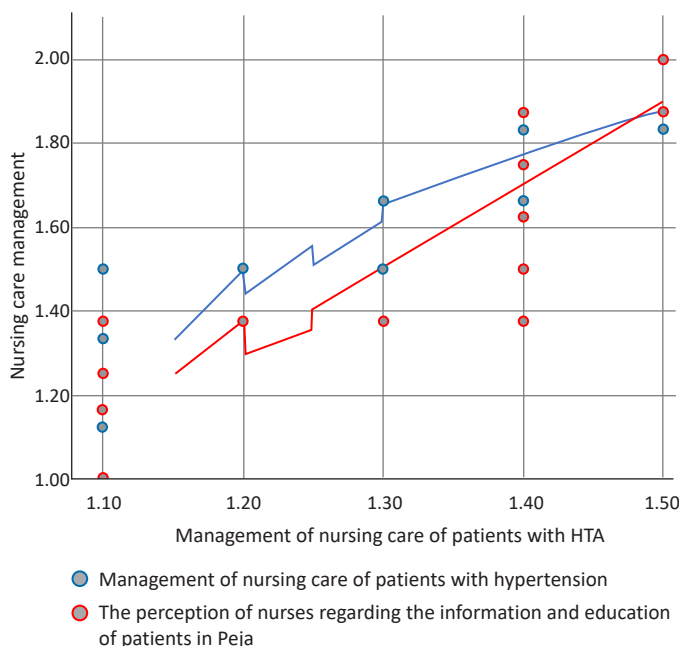
Regarding food, 100% of nurses say that patients with HTA should eat as little salt and fat as possible and with a lot of boiled fruits and vegetables, while 83.33% of patients say they need foods with less salt and fat, 8% foods sweet and salty as little as possible and 12% as little fast food as possible.

Verification of hypotheses

Hypothesis 1. Nursing care management and nurses perception regarding patient information and education have a positive impact on nursing care management in HTA patients. To analyze the hypothesis, I used the Partial Correlation (Pearson Correlation). The relat-

ed independent variables are the management of nursing care and the perception of nurses regarding the information and education of patients in the hospital and the dependent variable is the management of nursing care of patients with HTA.

Simple scatter of nursing management and the perception of nurses regarding the education of patients in Peja Hospital and the management of nursing care of patients with HTA



From the above results we see that the management and perception of nurses related to informing patients with HTA has a positive impact ($\rho = 0.625^{**}$, $p \text{ value} = .000 < .01\%$) in the management of nursing care in patients with HTA, which means that statistically there is a positive correlation and we accept the hypothesis that the management of nursing care and the perception of nurses regarding the information and education of patients have a positive impact on the management of nursing care in patients with hypertension.

Correlations

Control Variables		Management of nursing care of patients with hypertension	Perception of nurses regarding the information and education of patients in Peja Hospital
Management of nursing care of patients with hypertension	Correlation	1.000	0.625
	Sig. (2 tailed)		0.000
	Df	0	97
Perception of nurses regarding the information and education of patients in Peja Hospital	Correlation	0.625	1.000
	Sig. (2 tailed)	0.000	
	Df	97	0

Hypothesis 2. Education, assessment of patients with HTA, has a positive impact on patient satisfaction and the management of arterial hypertension in the Dukagjin region and in Kosovo.

To prove the above hypothesis, I used Bivariate correlation (Pearson correlation), where the independent variable is good nursing care practices, while the dependent variable is patient satisfaction and the management of arterial hypertension disease.

Correlations

		Good nursing care practices	Patient satisfaction and disease management arterial hypertension
Good nursing care practices	Pearson Correlation	1	0.767**
	Sig. (2 tailed)		0.000
	N	100	100
Patient satisfaction and disease management of arterial hypertension	Pearson Correlation	0.767**	1
	Sig. (2 tailed)	0.000	
	N	100	100

** Correlation is significant at the 0.01 level (2-tailed)

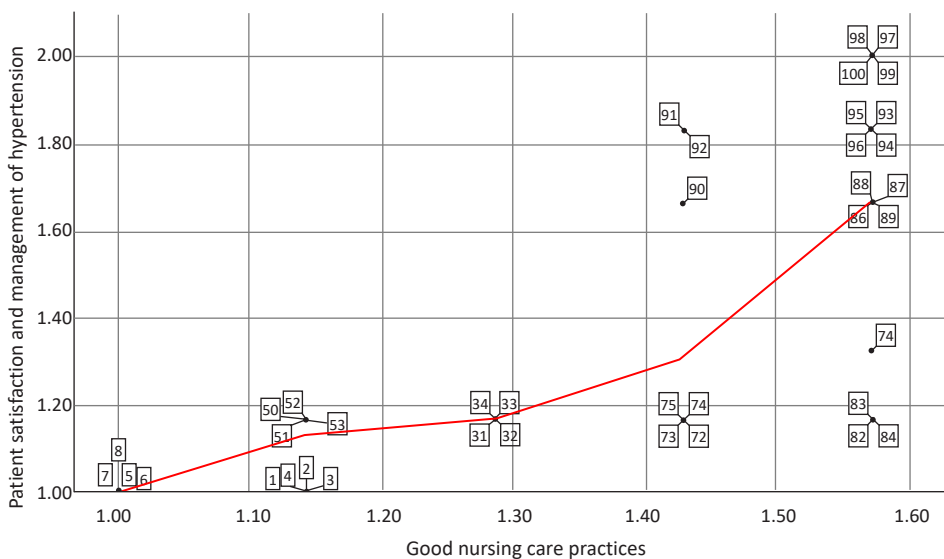
From the above results we see that between good nursing care practices we have a positive correlation ($\rho = .767^{**}$, $p \text{ value} = .000 < 0.1\%$) and patient satisfaction and the management of arterial hypertension disease, which falls that statistically we have a positive impact of good nursing care practices and patient satisfaction.

Hypothesis 3. The perception of patients towards health services is a potential indicator of adequate and quality management related to the management of HTA by nurses and their opinion in the first approach with nurses, have a positive impact on the satisfaction of patients towards nursing care in the hospital.

To measure whether patients satisfaction with nursing care in the hospital depends on the perception and opinion of the patients in the first approach with the

nurse in the Coronary and Internal Unit, we used the Partial correlation. The independent variable is the perception and opinion of the patients, while the dependent variable is the satisfaction of the patients with nursing care in the hospital.

Of Patient satisfaction and management of HTN by good nursing practices



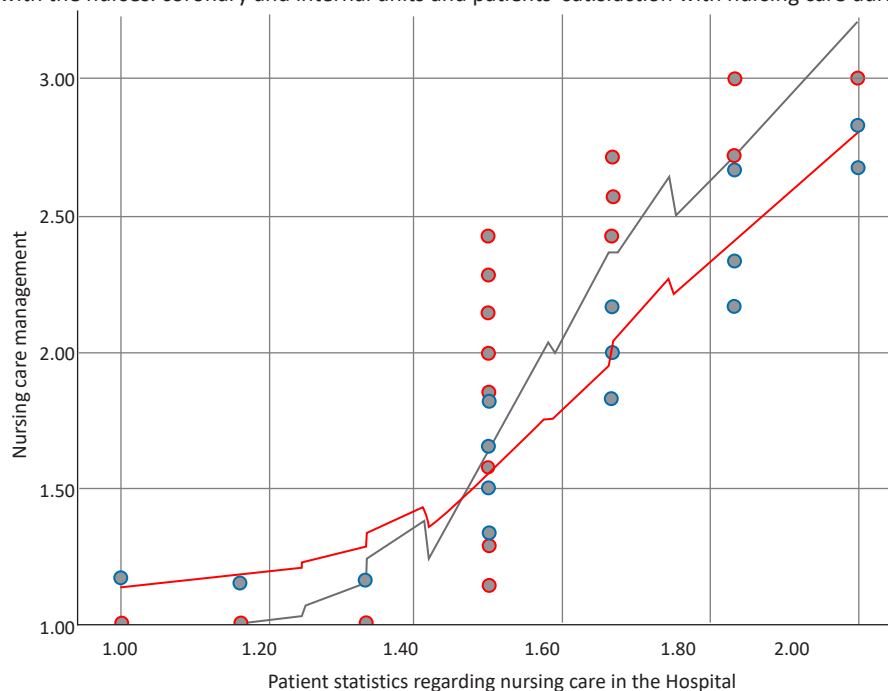
So, the more positive practices and nursing care, we will have a very high level of patient satisfaction and a positive management of arterial hypertension disease. We accept the hypothesis that good nursing care practices such as: guidance through brochures, determination of appropriate therapy and nursing support, have a positive impact on patient satisfaction and the management of arterial hypertension in the Peja Region.

Correlations

Control Variables		Perception The patients related to information and education from The nurses	Patients opinion on the approach first with the Nurse in the Unit Coronary and Intern
Satisfaction of patients perception of patients regarding nursing care with information and in hospital education from the nurses	Correlation Sig. (2 tailed) df	1.000 0.000 0	0.850 297 0
The opinion of patients in the first approach with the nurse in the Coronary and Internal Unit	Correlation Sig. (2 tailed) df	0.850 0.000	1.000 297 100

From the above results we see that the correlation of patients perception regarding information and education by nurses and patients opinion in the first approach with the nurse in the Coronary and Internal Unit has a positive impact ($\rho=0.850^{**}$, p value $=0.000 < 0.1\%$) with patients satisfaction with nursing care in the hospital.

Perception of patients regarding information and education by nurses of the patients' opinion in the first meeting with the nurses. coronary and internal units and patients' satisfaction with nursing care during hospital stay



So, we accept the hypothesis and say that the perception of patients regarding the management of HTA by nurses and their opinion in the first approach with nurses, have a statistically significant positive impact on patient satisfaction with nursing care in the hospital.

Hypothesis 4. The use of a semi-structured questionnaire in order to identify nurses in the management of patients with arterial pressure diseases and educa-

tion for the prevention of complications of arterial hypertension.

To measure the impact of nursing care on the preservation of patients and the impact this has on the management of nursing care of patients with HTA, and the prevention of complications from this disease, I used Bivariate correlation (Pearson correlation), where the independent variable is education for the preservation of patients and dependent is the management of nursing care of patients with HTA.

Correlations

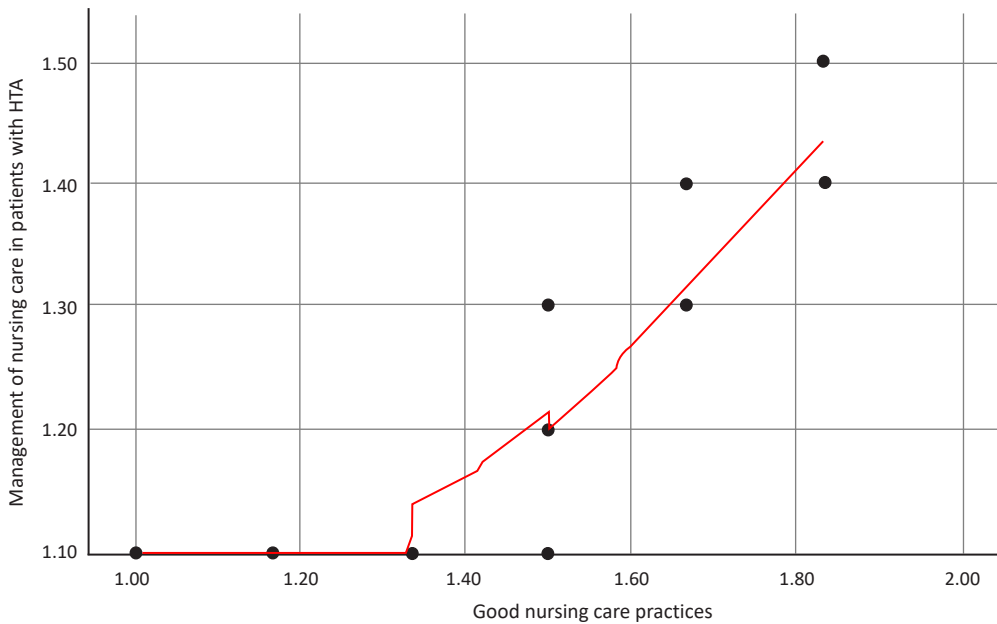
Control Variables		Patient care education	Care management nursing of HTA patients
Patient care education	Pearson Correlation	1	0.913**
	Sig. (2 tailed)		0.000
	N	100	100
Management of nursing care of patients with hypertension	Pearson Correlation	0.913**	1
	Sig. (2 tailed)	0.000	
	N	100	100

** Correlation is significant at the 0.01 level (2-tailed)

From the above results, we see that there is a positive correlation between the education for maintaining the health of patients ($\rho=0.913^{**}$, p value = $0.000 < 0.1\%$) and the management of nursing care of patients with HTA. So, we accept the hypothesis that patient care education has a statistically positive effect on the nursing care management of patients with hypertension.

In order to analyze whether the content of the advice received from nurses has a positive effect on the recognition of risk factors and the management of the HTA disease, I performed the bivariate correlation analysis (Pearson correlation) between the content of the advice received and the learning of risk factors. risk and their management for HTA prevention.

Management of nursing care of patients with HTA by management of nursing care



Hypothesis 5: The content of advice received by nurses is an important and valid indicator for the quality of care and hospital performance and positively affects the recognition of risk factors and the management of the HTA disease.

From the below results we see that we have a positive correlation between the content of the advice received from the hospital ($\rho=0.410^{**}$, p value = $0.000 < 0.1\%$) and the learning of risk factors and their management. So, we accept the hypothesis that the con-

Correlations

Control Variables		Content of advice taken from HOSPITAL	Have you learned about Risk Factors and their management?
Content of advice received from the hospital	Pearson Correlation	1	0.410**
	Sig. (2 tailed)		0.000
	N	100	100
Have you learned about risk factors and their management?	Pearson Correlation	0.410**	1
	Sig. (2 tailed)	0.000	
	N	100	100

tent of the advice received from the hospital has a statistically positive effect on the recognition of risk factors and the management of HTA disease.

DISCUSSION

More than one in three adults worldwide have high blood pressure, or about 1.8 billion people have hypertension. 50% of these people are not aware of their condition. But even those who are aware, half of them do not take any action to control their blood pressure, changing their lifestyle, or using medications, 75% of the world's population who have hypertension are at risk and are potential candidates for heart disease, stroke, kidney disease or sudden death [6].

The percentage of high blood pressure increases with age, which means that: high blood pressure in people aged 20-30 years is found at a rate of 1 in 10. High blood pressure in people aged 50 years is found in 5 out of 10, or one out of two people [7]. Complications of high blood pressure account for more than 9 million deaths worldwide each year. This includes 51% of deaths due to stroke and 45% of deaths due to coronary heart disease [8, 9]. In our country, Kosovo, hypertension occurs in 36% of the age group 25 years and above. Among men aged 25 and over, it is found in about 40%, and in women aged 25 and over in about 32% (WHO, World Health Statistics, 2014). Also, 80% of women and 90% of men with hypertension were not aware of their condition (ADHS, 2010) [3,9]. According to GBD 2010 estimates, the overall mortality rate attributed to high blood pressure in Albania has increased significantly over the last twenty years, from 27% in 1990 to 35% in 2010 [10-12].

It can be concluded that the results of the study raised some important issues, first of all, insufficient education of hospitalized patients regarding TA. At the same time, the demand of the time about the necessity of the existence of a protocol, which would include the education of patients in this vulnerable phase of the fight against the disease, is highlighted.

The status of nurses in the past in Kosovo was low compared to other health professionals. This is also reflected in this paper by the analyzed answers of nurses that present the lack of standards and knowledge for proper management of nursing care of patients with HTA. The role of the nurses was to assist the doctors and carry out their instructions. The problems faced by nurses are also reflected in the research carried out by us, with the aim of nursing care for patients with HTA. Educating citizens about the disease is the primary duty of health workers but this is understandable and to be understood, the professional development of nurses should be done by being educated [13-15,].

Through the questionnaire, an overview of the knowledge of nurses in the management of nursing care cases with a focus on the education of patients related to the disease which is their professional preoccupation was obtained. The questionnaires started with the question about the most critical moment, the onset of the first symptoms. These data are very important and determine the therapeutic approach. So, with the data that are necessary, such data are recorded. Such a thing raises the necessity of the questionnaire which would have to be completed by the nurse within the "processing" of the patient. Through this completed questionnaire, it can be seen that nurses do not have enough information about the disease and about the modification of risk factors. So there is a need for continuous education and for the existence of specialized nurses for patient education. Informing nurses about risk factors is also somewhat unsettled. On the other hand, it is clear that nursing care should include evidenced education in addition to interventions. This gives us the right to think that the nurse does not take an active role in the diagnosis and therapy of the patient with TA. From the descriptive results of the nurses, we understand that the nurses of the Peja Region need to have more continuous education, or training for arterial TA and other internal diseases, which is distinguished in the first question: do you ask the patient about the time of the symptoms of money? To this question, 70% of the nurses answered yes, we ask them, while 30% answered no, with the reasoning that there is no need for the nurse to know about the time and manner of the symptoms, only if they had worked in the Coronary Unit or in Cardiology, need to ask the patient, because there are more emergencies in those two wards. When recording patients, we see that 65% of nurses record the time of admission of patients. About 48% of the nurse state that they document the patient symptoms upon admission and during hospitalization, the others do not document them, because there are no evidence cards. And 100% of them state that they record the patient vital signs on admission and during hospitalization, which are recorded in the patient's temperature list. About 60% of nurses state that they ask patients about previous disease and that only 45% of nurses state that they ask patients about the risk factors of HTA disease. Others reason that this was not done by the nurses, but should be done by the doctor. Regarding the perception of nurses regarding the information and education of patients, we see that 35% of nurses think that during their stay in the hospital patients receive enough information about their illness, and 65% think that they do not receive enough information. Only 25% think that they receive information about the modification of risk factors. It is worth discussing that even nurses know that there is a lack of

patient information, but it is not done. About 98% of nurses think that patients receive sufficient information about the use of drugs, while 75% of nurses say that during the patients stay in the hospital, they receive information about daily activities after discharge from the hospital.

Regarding the information about the diagnostic examination of the patients, 80% of the nurses say that they receive enough information, while 65% say that the patients during their stay in the hospital receive enough information about the possibilities of prevention and treatment of HTA disease. And this gives high positive results, for the improvement of the patient's health condition. Of the respondents, 48% of the nurses affirm that during the stay in the Hospital we tell the patient about the symptoms of HTA and the complications caused by this disease, while 52% of them say that this is the competence of the doctor. As for the management of hypertension by the nurses of the Regional Hospital in Peja, 100% said that they do not have any brochure for patients in which they would have had the opportunity to be informed about high blood pressure, while 88% of the nurses think in spite of their work, they should also deal with the education of patients about HTA disease. About 60% of nurses think that patient clubs should be formed that deal with the education and support of patients after internal diseases. As factors that affect blood pressure, 100% of nurses say that they are fast food, 100% of food that contains salt, while 65% say that patients with HTA should have meals rich in fruits and vegetables. every day. We see that 100% of nurses say that food has an impact on blood pressure, low-fat milk and foods with fewer calories should be chosen. Also, 100% of nurses say that garlic helps control blood pressure, while smoking is a factor that affects the deterioration of blood pressure.

Regarding the satisfaction of patients with nursing care in the hospital, where 200 patients were included in the research, during the research it was found that 30% of the patients were asked by the nurses about the first symptoms of the disease, while 70% were not asked at all. We understand that over 79% of patients have had complaints or trouble, breathing difficulties, ringing in the ears during hospitalization, and express their satisfaction with the nursing care. While 90% of them state that their blood pressure was measured during their hospitalization, and the rest say that it was not measured regularly. About 33% of patients say that they were asked by nurses about previous diseases, while 29.2% of them say that they were also asked about the risk factors of coronary disease and HTA and 70.8% say that they were not asked, which clearly shows that the patients are satisfied with the nursing care, but they are not satisfied with the nurses interest in their illness in relation to asking questions about

symptoms and risk factors, etc. Analyzing the perception of patients regarding information and education from nurses, it can be seen that over 50% of patients received information about their illness during their stay in the hospital, 34.7% did not and 16% said they did not know if they received a not information.

Regarding the modification of risk factors that are threatened by this disease, only 45.7% of patients received information in the hospital, 83.3% say that they received sufficient information about the use of the drugs they need. About 50% of patients say that they received enough information about daily activities after leaving the hospital. Only 30% of patients received information about the diagnostic examinations they underwent and may undergo in the future, while 35% of patients during their stay in the hospital received sufficient information about the possibilities of preventing and curing diseases of HTA. It can also be seen that 100 patients, or 50% of them, were hospitalized once, 70 patients, or 30% of them, were hospitalized twice and 20% were hospitalized more than three times due to arterial hypertension. This makes us understand that the patients have good nursing care during their stay in the hospital, but they do not have information about the education and management of this disease, analyzing it with the answers of the patients whom we monitored for a year and a half, where during monitoring and counseling, none of those patients were ever hospitalized, because during this time we advised and treated them in the most professional way. We see that 100% of the patients expressed that they never received informative brochures from the nurses about HTA disease. Over 83% of patients agree that nurses, in addition to their daily work, should also deal with educating patients about the HTA disease, others think that this is not a nurse's job.

Regarding patient clubs for their education and support, about 53% of patients say that it would be necessary to create this club, 45.7% of them say that smoking is a factor that affects blood pressure, while 31% of them have the opposite opinion, and that 62% of patients state that alcohol consumption affects blood pressure. From the results obtained for the patient and the nurse from the question of who should provide information to the patient regarding the disease, we see that 30% of the nurses said that the nurses themselves should provide this information, while 70% of them think that this information should be given by the doctor, and no one said that the patient himself should be interested. It is worth discussing here that the nurse, in order to know his competence and protect it, must have at least a Bachelor's degree. On the other hand, patients have a relatively divided opinion in two groups, where 53.3% of them say that this information should be given by the nurse, while 46.7% by the doctor and

CONCLUSION

none said that the family member should give information. It is worth discussing that even patients in our country have the opinion in some cases that the nurse has no other competences than providing therapy.

As for the question of how often the blood pressure of patients is measured, 20% of nurses say that they do it twice during the shift change, (all who worked in the Coronary Unit), 5% at the patient's request, 12% of them at the doctor's request, and 53% of the nurses say they don't do it because they do it themselves the doctor. Patients have a different opinion about this aspect compared to nurses. Where 5% of them say that their blood pressure is measured twice during the nursing shift, 3.3% say that their blood pressure is measured only once during the nursing shift, 40% of patients say that the pressure it is measured only when there is a request from them, 20% when the doctor asks and 31.7% say that the nurses do not measure the pressure because the doctors do it. All (100%) of the nurses emphasize that the main factors that affect high blood pressure are food, vices such as: smoking and alcohol, physical activity and stress management and not using drugs regularly. Patients have approximately the same opinions, where 16% of them think it's food, 13% say it's vices such as: smoking and alcohol, 11% say it's physical activities, 8% stress management and not using drugs regularly and 55% think all together. Factors that influence stress management according to nurses are: 40% company with people who know how to make humor and walking, 36% are the choice of problems while working and exercises for muscle relaxation, and the rest did not have correct answers. The patients have relatively antihypertensives, the nurses all say that antihypertensive drugs should be used only according to the doctor's instructions, they should be stored in separate places, their term should be checked and if the patient does not feel well after the drugs at home, they should call emergency or notify the nearest medical facility. While the patients have other opinions: where in the first case, 30% of the patients say that they should use the drugs only when they are not well, with the doctor's instructions, 23% say that they should be kept in separate places and 100 % say that the expiration date should be checked.

Regarding counseling sessions, 7% of nurses say yes, each patient should have individual counseling sessions, 49.2% yes, if we have free time, 39.2% no, because we don't have space for health education of patients and 3% no, because we do not know, while 68% of patients state that they receive individual counseling sessions (because I constantly ask nurses and ask them) and 12% no, because nurses do not have space for health education of patients. This shows that some patients know that there are no conditions or spaces for patient education.

During the stay in the hospital, patients do not receive enough information about the elements of secondary prevention of coronary diseases and TA, as a more efficient and cheaper form of prevention of possible complications, control of the disease, reduction of mortality. Health professionals need further training on diseases of the cardiovascular system, and patients need to have special centers for education, and sufficient informational tools ducton of disability. Education programs improve care, reduce re-hospitalization, and increase the quality of life and functional status of patients with hypertension and coronary heart disease, as well as decrease mortality from hypertension. Professional development of nurses and additional training for nurses and doctors is very necessary. Patients have good nursing care during their stay in the hospital, but they do not have information about the education and management of this disease.

RECOMMENDATIONS

If there is inadequate nursing care management in the case management of patients in the Coronary Unit and if there is a lack of patient health education by nurses, then an action plan for improvement should be developed and that plan should contain issues such as: Raising the level of knowledge of nurses regarding coronary diseases and the necessity of educating patients at the primary and secondary health level. The general commitment of the staff to the monitoring and counseling of patients with HTA. Sampling any hospital that results in a high level of adequate nursing care management of HTA patients. Continuous training of health workers for the provision of health care to patients with HTA, and SKV. The necessity of raising hygienic standards in health institutions. Increased awareness of doctor-nurse-patient communication.

Overall commitment by management staff to the advancement of nursing staff.

Provision of the patients' food menu with dietary food according to the nature of the patients' illnesses. Obtain a comprehensive medical history and physical examination in all patients with hypertension to verify the diagnosis, to detect the causes of secondary hypertension, to record cardiovascular risk factors, and to identify SKV. During the delivery of instructions for taking medicines, the importance of medical follow-up, participation in rehabilitation programs, information about ways to reduce the risk of hypertensive crisis, heart attack or other disorders of the cardiovascular system is learned. Consider referral for investigation and further management of suspected secondary hypertension to a specialized center with access to appropriate expertise.

Conflict of Interest

We declare with full responsibility that we have no conflict of interest.

Ethics

The Chamber of Nurses and Doctors was not yet closed when this work was carried out, the Ethics Group and for this research only in December we received written consent from the director of this hospital. 2020 and no. Protocol: 95/1. that we can conduct this research for scientific reasons.

Author's contributions

The collection of data and the entire research is the work of the author B.P, while the correspondent SH. A, has found the literature, and corrected the final paper.

Credit author's text in manuscript

For the publication of this paper we will not have any organization supporting us and no company.

REFERENCES

1. Bramlage P, Böhm M, Volpe M, Khan BV, Paar WD, Tebbe U et al. A global perspective on blood pressure treatment and control in a referred cohort of hypertensive patients. *J Clin Hypertension (Greenwich)*. 2010 Sep;12(9):666-77. doi: 10.1111/j.1751-7176.2010.00322.x
2. Anderson JL, Adams CD, Antman EM, Bridges CR, Califf RM, Casey DE Jr et al. ACC/AHA 2007 guidelines for the management of patients with unstable angina/non-ST-Elevation myocardial infarction: a report of the American College of Cardiology/American Heart Association Task Force on Practice Guidelines (Writing Committee to Revise the 2002 Guidelines for the Management of Patients With Unstable Angina/Non-ST-Elevation Myocardial Infarction) developed in collaboration with the American College of Emergency Physicians, the Society for Cardiovascular Angiography and Interventions, and the Society of Thoracic Surgeons endorsed by the American Association of Cardiovascular and Pulmonary Rehabilitation and the Society for Academic Emergency Medicine. *J Am Coll Cardiol*. 2007. Aug 14; 50(7):e1-e157. doi: 10.1016/j.jacc.2007.02.013
3. Maseri A, Chierchia S, Kaski JC. Mixed angina pectoris. *Am J Cardiol*. 1985 Sep 18;56(9):30E-33E. doi: 10.1016/0002-9149(85)91173-7
4. Balla C, Pavasini R, Ferrari R. Treatment of Angina: Where Are We? *Cardiology*. 2018;140(1):52-67. doi: 10.1159/000487936
5. Mottahedian Tabrizi E, Najafi Mehri S, Samiey S, Einollahi B, Babaei GR, Mohammadi E. Effect of programmed nursing care in prevention of hemodialysis complications. *J Crit Care Nurs*. 2009;2(2):55-9. Available: <http://jccnursing.com/article-1-118-en.html>
6. Koh SS, Manias E, Hutchinson AM et al. Nurses perceived barriers to the implementation of a fall prevention clinical practice guideline in Singapore hospitals. *BMC Health Serv Res*. 8,105 (2008) P.1-10. doi: 10.1186/1472-6963-8-105
- Chobanian, Aram V et al. Seventh report of the Joint National Committee on Prevention, Detection, Evaluation, and Treatment of High Blood Pressure. *Hypertension* (Dallas, Tex: 1979). 2003 Dec;42(6):1206-52. doi: 10.1161/01.HYP.0000107251.49515.c2 Epub 2003 Dec 1.
7. Viera, Anthony J et al. High blood pressure knowledge among primary care patients with known hypertension: a North Carolina Family Medicine Research Network (NC-FM-RN) study. *J Am Board Fam Med*. 2008 Jul-Aug;21(4):300-8. <https://doi.org/10.3122/jabfm.2008.04.070254>
8. The performance of public health-care systems in South-East Europe. World health statistics 2014 Avenue Appia, 1211 Geneva 27, Switzerland ISBN:9789241564717 (NLM classification: WA 900.1)
9. Health, United States, Annual Perspective, 2020-2021. National Center for Health Statistics (U.S.). doi: 10.15620/cdc:122044
10. Khaliq N, Hussain N, Akhter R, Iqbal M. Knowledge and perceptions of physicians about Evidence Based Management of hypertension in acute ischemic stroke patients. *Rawal Med J*. 2010;35:51-3. <https://www.researchgate.net/publication/289944336>
11. Gelb AW et al. World Health Organization-World Federation of Societies of Anaesthesiologists (WHO-WFSA) International Standards for a Safe Practice of Anesthesia. *Anesth Analg*. 2018 Jun;126(6):2047-55. doi: 10.1213/ANE.0000000000002927
12. Renner Jochen et al. Global end-diastolic volume as a variable of fluid responsiveness during acute changing loading conditions. *J Cardiothorac Vasc Anesth*. 2007 Oct;21(5):650-4. doi: 10.1053/j.jvca.2007.05.006.
13. Mulatero P et al. Comparison of confirmatory tests for the diagnosis of primary aldosteronism. *The J Clin Endocrinol Metab*. 2006 Jul;91(7):2618-23. <https://doi.org/10.1210/jc.2006-0078>
14. Saugel B et al. Measurement of blood pressure. *Best Pract Res Clin Anaesthesiol*. 2014 Dec;28(4):309-22. doi: 10.1016/j.bpa.2014.08.001