

Impact of a Protocol of Care on Physical, Psychological Responses and Compliances to Therapeutic Regimen among Hypertensive Patients in Hemodialysis Unit

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ABSTRACT

Aim: This study was carried out to evaluate the impact of a protocol of care on physical, psychological responses and compliances to therapeutic regimen among hypertensive patients in hemodialysis unit.

Patients & Methods: This study was conducted in hemodialysis Unit at Shiben El -Kom Teaching Hospital. A convenient sample comprised of thirty adult patients male and female these were randomly assigned into pre/post test. Protocol of care was developed based on reviewing the relevant literature. Two tools were used for data collection. 1. A Structured interview sheet. 2. Psychological responses measured by Stress Measurement Scale.

Results: The results revealed that, half (50%) of the sample had hypertension from 2-5 years. The most sources of stress as reported by patients were from disease 86.7%, income 76.7%, noisy 76.7%, transportation 40%, and family member 40% respectively. There was significant difference between patients' knowledge before intervention and after intervention follow up one and two as regard to nature of the disease, medication, diet, rest and sleep, and importance of exercises. Regarding blood pressure before intervention it was found that a highest percent 53.3% of the sample had moderate hypertension while after intervention follow up one and two a high percent 43%, 40% of the sample had mild hypertension respectively. Statistically significant difference were found before intervention and after intervention follow up one and two in relation to, sodium, potassium and stress measurement respectively. In coping strategies among studied sample, the most frequently used coping method as reported by hemodialysis patients before intervention were change place 70%, followed by setting alone 30%, use recreation 26.7%, lessening to radio and seeing T.V 20 % and reading Koran (16.7%). While after intervention follow up one and two, the most frequently used coping method were change place 86.7%, 93.3% followed by listing to radio and seeing T.V 70%, 76.7%, use progressive relaxation technique 46.7%, 50%, use breathing exercises 50%, 43.3%, use distraction technique 40%, 40%, use physical exercises 30%, 33.3%, use recreation 23.3%, 26.7%, reading Koran 16.7%, 16.7% and setting alone 6.7%, 3.3% respectively. There were significant differences between before and after intervention in relation to patients' compliance to medication, rest and sleep, diet, exercises, and follow up.

Conclusion: Enrichment of patients with knowledge and compliances to therapeutic regimen, Lifestyle change including diet, exercise, and stress management in addition to practicing coping method as use progressive relaxation technique, breathing exercises, distraction technique, physical exercises and recreation may contribute significantly to lowering of blood pressure.

Key words: protocol of care, responses to therapeutic regimen of hypertensive patient, hemodialysis unit

INTRODUCTION

As a result of advanced technology, the number of individuals living with chronic illness is increasing. The nursing profession will be increasingly involved in the care of the chronically ill ⁽¹⁾. Chronic renal failure is a progressive irreversible loss of kidney function that usually developed gradually over many years. It is managed by hemodialysis, peritoneal dialysis and kidney transplantation⁽²⁾. The incidence of end - stage renal disease (ESRD) has been doubled over the past 10 years and the leading causes of ESRD are hypertension and diabetes. The prevalence of arterial hypertension among dialysis patients is high and approximately 80-90% of patients are hypertensive by the time chronic renal failure progresses to ESRD ⁽³⁾.

Hemodialysis is a safe and effective method of managing renal failure. It is currently used for more than 100000 American patients who are actually ill and required short term or permanent therapy⁽²⁾. In Egypt around 200 for every million people are suffering from CRF and 75 % of them are treated by hemodialysis⁽⁴⁾. The number of patients who have CRF in Shebin El Kom teaching hospital in 2002 was 91 patients. According to statistical records of Menoufia Main University hospital, there are about 108 patients scheduled for hemodialysis during 2004. In Egypt, high blood pressure is prevailing among 26.3% of the population⁽⁵⁾.

Patient on regular hemodialysis are subjected to multiple physiological stressors includes pain, discomfort, fluid and diet restrictions, fatigue and general weakness⁽⁶⁾. Psychological stressors in the form of anxiety, depression and feeling of inadequacy may be threatened with many potential losses of life style changes. Both physiological and psychological stressors alter the life style of patients and their families^(7,8).

Hypertension is one of the leading causes of disability or death, due to stroke, heart attack, and kidney failure. Hypertension in the patient with chronic renal failure is a multifactorial problem. Secondary complications of renal failure, such as volume overload, sodium imbalance, elevated catecholamine levels, and

derangements in the rennin-angiotensin system. It is very common and often poorly controlled and it contributes to increased cardiovascular morbidity in patients undergoing long-term hemodialysis therapy⁽⁹⁾. Antihypertensive drugs are prescribed for most hemodialysis patients. Previous studies showed that suboptimal antihypertensive drug therapy and poor patient adherence are associated with poor blood pressure control in these population^(10,11). Non compliance is especially common when a complex antihypertensive drug regimen is prescribed or when the patient has poor knowledge, understanding and perception of hypertension therefore, patient with hypertension need education, counseling and support to enable them to adjust and reduce stress associated with illness ^(12,13).

Hypertension control might be optimized if patient adhere to their medication regimen, are able to afford drugs, understand risks of hypertension and have no physical limitations to taking antihypertensive drugs. Essential components of lifestyle modification for management of hypertension include weight loss, increased aerobic activity, smoking cessation, reduction of dietary saturated fat and cholesterol, reduction of sodium intake, stress management and limiting daily alcohol intake lifestyle modification alone can be successful but it may be necessary to couple with drug therapy⁽¹⁴⁾.

Studies have demonstrated that a nutritional program of weight loss, sodium and alcohol restriction achieved a 39% success rate in reducing blood pressure without drugs. Also research showed that a healthy eating plan can not only help reduce weight but can lower the risk of developing high blood pressure and reduce already elevated pressure⁽¹⁵⁾. In addition to American Heart Association (2000) mentioned that moderate level of physical activity on a daily basis thirty minutes a day well not only help weight loss but can reduce blood pressure and the risk of cardiovascular disease⁽¹⁶⁾.

Lithner⁽¹⁷⁾ stated that nurses are in a key position to carry out health education since they are the health care providers who have continuous contact with patients and families are usually the most accessible source of information for the patients. Therefore if nurses are aware of which stressor causes the most distress for individuals with chronic hemodialysis, they can design nursing intervention to alleviate these stressors. Nurses responsibility is to assess the type of coping strategies used and their effectiveness, based on this assessment they must reinforce positive coping methods or assist them to develop effective coping strategies, so that individual with chronic dialysis progress toward optimum⁽¹⁸⁾. Therefore, one approach to improving the management of hypertension is to evaluate the current patterns of antihypertensive drug use and explore potential barriers to patient adherence to the prescribed regimens. Compliance includes the patients adherence to the prescribed rehabilitation regimen as well as the patients independent follow up months to years after the program is completed⁽¹⁹⁾

Hence, the present study was conducted to evaluate the impact of a protocol of care on physical, psychological responses and compliances to therapeutic regimen among hypertensive patients in hemodialysis unit.

AIM OF THE WORK

The aim of the present study is to evaluate the impact of a protocol of care on physical, psychological responses and compliances to therapeutic regimen among hypertensive patients in hemodialysis unit.

MATERIAL AND METHODS

Material (Setting): This study was conducted in hemodialysis Unit at Shebin El -Kom Teaching Hospital

Material (Subjects): A convenient sample comprised of thirty adult patients male and female these were randomly selected based on the following criteria:

- Diagnosed with hypertension

- First initiation of hemodialysis session
- Had the same number of hemodialysis session/week

Tools: for the purpose of the study and to collect the necessary data two tools was utilized by the researchers based on the review of the related literature.

Tool 1: A Structured interview sheet:

Which developed by the researchers it includes four parts:

Part 1: Bio-socio-demographic and medical data sheet as:

- A) Socio-demographic data as: age, sex, education, marital status and occupation, income and family members.
- B) Past history for: onset of hypertension, history of smoking, over weight and salty diet.

Part 2: Interview questionnaire:

It includes the following items: patient knowledge and self care practice regarding hypertension with hemodialysis and its management. The questionnaire covered the following items: The nature of the disease, problems regarding activity and rest, medication, diet, importance of regular weighting and smoking.

Part 3: Physical responses monitoring sheet: it includes the following:

- A) Physical response as: vital signs, edema, patient weight, and skin condition
- B) Degree of fatigue and dyspnea measured by: Dyspnea analogue scale. This tool was developed by Borg⁽²⁰⁾. It is used to provide information on intensity of dyspnea and fatigue, it contained 10 items. Groups' scores ranged from 0 to 10. Zero means no dyspnea, 0.5 mean very very slight, 1 very slight, 2 slight, 3 moderate, 4 some what severe, 5 to 6 severe, 7 to 8 very severe, 9 very very severe and 10 is the maximum level of dyspnea.
- C) Diagnostic test: serum sodium and potassium

Part 4: Patient compliance to the prescribed regimen: it includes Compliance to medication, diet, rest, and daily activity, relaxation technique, exercise and follow up.

Tool 2: Psychological responses measured by Stress Measurement Scale: A modified

adopted Scale by Wichita.⁽²¹⁾ This scale consists of 20 items and scored by Yes and No, each yes is worth 1 point, each no is worth 0.

0 - 3 = mildly stressed

4-6 = moderately stressed

7 or more = extremely vulnerable

Methods:

The study was conducted over a period of 12 month from August 2004 to July 2005.

1. An official approval was obtained from the responsible authorities after explaining the aim of the study.
2. Study tool 1 was developed after review of related literature and was tested for content validity by five experts in the fields of nursing and medical education and necessary modifications were done.
3. Patients consent was obtained to participate in the study after explaining its purpose.
4. A pilot study was carried out on 3 patients to test feasibility and applicability of the tool and modification was done accordingly.
5. Patients who fulfill the studied criteria were selected randomly and tested as pre/post test.
6. To fulfill the study aim a protocol of care was carried out in four consecutive phases namely: assessment, planning, intervention and evaluation.

Procedures of data collection: it included four phases:

Assessment phase: The aims of this phase were to collect the baseline patients' data as well as to identify individualized learning needs and needed care. Each patient was interviewed using tool 1 and 2 immediately within 24 hours of admission to hemodialysis unit and start dialysis.

Planning phase: Individualized plan of care for patient with hypertension in hemodialysis was developed based on the findings of the assessment and review of current related literature.

Implementation phase:

- Subjects were randomly assigned as mentioned before to pre/post test

- Patients were seen three times per week according to sessions of dialysis. During this period, a protocol of care was provided to them according to individualized patient needs. Teaching was done by the researchers to each patient. The methods of teaching used were the personal interview to achieve individualized instructions as well as solve personal problems. Each patient was scheduled for a minimum of 7 teaching session according to the patient condition. Each session lasted 30- 45 minutes. Each patient received verbal instruction supplemented by written material that is supplemented by pictures as an illustrative guide for more clarification to the patients. The first session help the patients to gain knowledge about definition, manifestation and related factors of hypertension in hemodialysis. The second and third session help patient to gain knowledge about benefits of rest, daily activities and exercise also enhance patients to perform the relaxation technique. The fourth session helps the patient to appreciate the value of following certain dietary regimen and to know to plan the diet. The fifth and sixth session gain patients knowledge about medication also enhance patients performance to measure fluid intake and output, body weight and blood pressure. The 7th session help patient to gain knowledge about smoking, stress and their management and the importance to follow up. After the protocol of care was given each patient was interviewed three times / week to reinforce provided knowledge, to respond to their question if any and to try to help them to solve any problems.

Evaluation phase: Each patient was assessed three times during the study period utilizing the two tools. The first one before the administration of protocol of care and the others two assessment were one every month after the implementation of the protocol of care. Also patients compliance to therapeutic regimen was assessed two times, the first assessment after one month after the implementation the protocol of care and the second assessment after two months.

Statistical Analysis: Results were collected, tabulated, statistically analyzed by IBM personal

computer and statistical package SPSS. Two types of tests were done:

- Paired t-test: to measure the differences between the two results correlation test: to measure the qualitative data
- A P-value of < 0.05 was considered statistically significant.

RESULTS:

The results of this study are presented as following: results related to subject characteristics, source of stress, patient's knowledge, physical & psychological response, coping strategies and patients compliance.

Table (1): In relation to bio-socio-demographic characteristics of the sample data analysis revealed that, 50% were males and 50% were females. Regarding age, a high percent 43.3% of patients ranged from 50 years and above. As regards education most of the patients were either illiterate 40% or read and write 33.3%. In relation to occupation a high percent 26.7%, 40% of the patients were either farmer or house wife respectively. Regarding marital status it is evident that the majority 93.3% of the sample were married. A high percent 50%, 63.3% of the sample had income below 200 pound and family member from 2-5 respectively. Almost half 50% of the sample had hypertension from 2-5 years.

Table (2): Represents the sources of stress. The results revealed that the most sources of stress as reported by patients were from disease 86.7%, income 76.7%, noisy 76.7%, transportation 40%, and family member 40% respectively.

Table (3): shows the impact of nursing intervention on patient's knowledge it was found that there was significant difference between patients' knowledge before intervention and after intervention follow up one and two as regard to nature of the disease, medication, diet, rest and sleep, and impotence of exercises. Regards follow up activities there was no significant difference between before intervention and after intervention follow up one. But there was significance difference before intervention and after intervention follow up two with $P < 0.03$.

Table (4): The impact of nursing intervention on patient physical responses showed that regarding blood pressure before intervention it was found that a highest percent 53.3% of the sample had moderate hypertension while after intervention follow up one and two a high percent 43%, 40% of the sample had mild hypertension respectively. Concerning dyspnea before intervention it was found that 26.7% had slight dyspnea as compared to after intervention follow up one and two the majority 63.3%, 83.3% had no dyspnea respectively. As regards edema before intervention it was found that 33.3% had edema. While after intervention follow up one and two 83.3%, 93.3% had no edema respectively. As related to fatigue it was found that 58.7% had moderate fatigue before intervention on the other hand after intervention follow up one and two it was found that 43.3%, 36.7% respectively had slight fatigue. Regarding skin condition it was found that 40% had dry skin before intervention while 76.7%, 90% had healthy skin after intervention follow up one and two. The results revealed statistically significant differences were found before intervention and after intervention follow up one and two in relation to the above mentioned variables .

Table (5): shows impact of nursing intervention on patient physical and psychological response. The results revealed statistically significant difference were found before intervention and after intervention follow up one and two in relation to, sodium, potassium and stress measurement respectively. Regarding body weight there was no significance difference between before intervention and after intervention follow up one. While after intervention follow up two there was a significance difference.

Table (6): Showed that the effect of nursing intervention in coping strategies among studied sample, the most frequently used coping method as reported by hemodialysis patients before intervention were change place 70%, followed by setting alone 30%, use recreation 26.7%, lessening to radio and seeing T.V 20% and reading Koran (16.7%). While after intervention follow up one and two, the most frequently used coping method were change

place 86.7%, 93.3% followed by listening to radio and seeing T.V 70%, 76.7%, use progressive relaxation technique 46.7%, 50%, use breathing exercises 50%, 43.3%, use distraction technique 40%, 40%, use physical exercises 30%, 33.3%, use recreation 23.3%, 26.7%, reading Koran 16.7%, 16.7% and sitting alone 6.7%, 3.3% respectively. There was a significant difference in relation to the above mentioned variables except reading Koran and use recreation, there was no significant differences before and after intervention.

Table (7): Reveals that an obvious improvement in patient compliance with medication as a high percent 63.3% of the patients before intervention reported that they usually taking medication while a small percentage 16.7% of patients reported that they always take the medication as compared to a high percent 56.7%, 83.3% after intervention follow up one and two reported that, they usually and always take the medication respectively. In relation to compliance with diet, a high percent 40 %, 50% after intervention one and two reported they

usually and always compliance with diet compared to before intervention a high percent 43.3% reported rarely compliance with diet. As regards to rest and sleep a high percent 56.7%, 53.3% after intervention one and two reported usually and always compliance for rest and sleep respectively compared to before intervention a high percent 43.3% reported rarely compliance with rest and sleep. In relation to exercise a high percent 66.7%, 53.3% after intervention follow up one and two reported rarely and always compliance with exercise respectively compared to before intervention a high percent 46.7% reported never compliance with exercise. As regard follow up a high percent 46.7%, 46.7% after intervention follow up one and two reported usually and always compliance with follow up respectively as compared to before intervention 33.3% reported rarely compliance with follow up. There were significant differences between before and after intervention in relation to the above mentioned variables.

Table (1): Bio-socio-demographic characteristics of the studied sample.

Item	No	%
Age:		
▪ 20-	3	10
▪ 30-	2	6.7
▪ 40-	12	40
▪ 50-	13	43.3
Sex:		
▪ Male	15	50
▪ Female	15	50
Level of education:		
▪ Illiterate	12	40
▪ Read and write	10	33.3
▪ Secondary	6	20
▪ University	2	6.7
Occupation:		
▪ Farmer	8	26.7
▪ Housewife	12	40
▪ Retired	6	20
▪ Administrative	4	13
Marital status:		
▪ Single	2	6.7
▪ Married	28	93.3

Table (1) cont. : Bio-socio-demographic characteristics of the studied sample.

Item	No	%
Income:		
▪ >200	15	50
▪ 300	7	23.3
▪ 400	4	13.3
▪ <500	4	13.3
Family member:		
▪ 2-5	19	63.3
▪ 6-8	8	26.7
▪ >9	3	10
Over weight		
▪ No	20	66.7
▪ Yes	10	33.3
Onset of hypertension		
▪ <1 year	4	13.3
▪ 2-5	15	50
▪ 5-10	9	30
▪ >10	2	6.7
Salty diet		
▪ Yes	15	50
▪ No	15	50
History of smoke		
▪ Yes	7	23.3
▪ No	23	76.7

Table (2): Sources of stress among the studied sample as verpatated by patients.

Sources of stress	No	%
Transportation		
▪ No	18	60
▪ Yes	12	40
Work		
▪ No	20	66.7
▪ Yes	10	33.3
Marital relation		
▪ No	24	80
▪ Yes	6	20
Income		
▪ No	7	23.3
▪ Yes	23	76.7
Family member		
▪ No	18	60
▪ Yes	12	40
Noisy		
▪ No	7	23.3
▪ Yes	23	76.7
Disease		
▪ No	4	13.3
▪ Yes	26	86.7
Tension and pressure		
▪ No	12	40
▪ Yes	18	60

Table (3): The Impact of Nursing Intervention on Patients Knowledge among Studied Sample.

Items	Before intervention		After intervention one		P Significant	After intervention two		P Significant
	No	%	No	%		No	%	
Knowledge about nature of disease					-3.500 .000			-4.146 .000
Don't know	23	76.7	9	30		4	13.3	
Know	7	23.3	21	70		26	86.7	
Total	30	100	30	100		30	100	
Knowledge about diet					3.317 .001			-3.500 .000
Don't know						1	3.3	
Know	15	50	4	13.3		29	96.7	
Total	30	100	30	100		30	100	
Knowledge about importance of rest and sleep					-3.692 .000			-4.491 .000
Don't know	24	80	5	16.7		2	6.7	
Know	6	20	25	83.3		28	93.3	
Total	30	100	30	100		30	100	
Knowledge about importance of exercise					-3.207 .001			-4.359 .000
Don't know	25	83.3	13	43.3		6	20	
Know	5	16.7	17	56.7		24	80	
Total	30	100	30	100		30	100	
Knowledge about medication					-2.828 .005			-3.317 .001
Don't know	13	43.3	5	16.7		2	6.7	
Know	17	56.7	25	83.3		28	93.3	
Total	30	100	30	100		30	100	
Knowledge about importance of follow up					-1.508 .132			-3.000 .003
Don't know	16	53.3	11	36.7		4	13.3	
Know	14	46.7	19	63.3		26	88.7	
Total	30	100	30	100		30	100	

Table (4): Impact of Nursing Intervention on Patient Physical Response among Studied Sample.

Items	Before intervention		After intervention one		P Significant	After intervention one		P Significant
	No	%	No	%		No	%	
Assessment of BP					-4.491 .000			-4.786 .000
Normal	0	0	4	13.3		10	33.3	
Mild	7	23.3	13	43.3		12	40	
Moderate	16	53.3	7	23.3		8	26.7	
Sever	7	23.3	6	20		0	0	
Total	30	100	30	100		30	100	
Assessment of dyspnea					-2.842 .005			-3.020 .003
No	15	50	19	63.3		25	83.3	
Slight	8	26.7	10	33.3		5	16.7	
Moderate	6	20	1	3.3		0	0	
sever	1	3.3	0	0		0	0	
Total	30	100	30	100		30	100	

Table (4) cont. : Impact of Nursing Intervention on Patient Physical Response among studied Sample.

Items	Before intervention		After intervention one		P Significant t	After intervention one		P Significant
	No	%	No	%		No	%	
Assessment of edema					-2.236			-2.828
No	20	66.7	25	83.3	.025	28	93.3	.005
Yes	10	33.3	5	16.7		2	6.7	
Total	30	100	30	100		30	100	
Assessment of fatigue					-4.000			-4.326
No	6	20	7	23.3	.000	17	56.7	.000
Slight	3	10	13	43.3		11	36.7	
Moderate	17	58.7	10	33.3		2	6.7	
Sever	4	13.3	0	0		0	0	
Total	30	100	30	100		30	100	
Assessment of skin Condition					-2.238			-3.000
Healthy	18	60	23	76.7	.025	27	9	.003
Dry	12	40	7	23.3		3	10	
Total	30	100	30	100		30	100	

Table (5): Impact of Nursing Intervention on Patient physical and Psychological Response among Studied Sample.

	Before intervention		After intervention one		P Significant	After intervention two		P Significant
	Mean	SD	Mean	SD		Mean	SD	
Assessment of stress measurement					9.898			12.042
	2.433	.6261	1.6000	.4983	.000	1.1000	.3.51	.000
Weight	72.8667	12.1477	72.1667	11.3889	1.538	71.0000	10.4683	3.573
					.135			.001
Sodium	141.400	5.6969	139.7667	4.6734	3.774	138.1000	3.7997	5.100
					.001			.000
Potassium	5.1667	1.3800	4.8933	1.1120	3.74	4.4367	.9227	5.158
					.005			.000

Table (6): Impact of Nursing Intervention on Coping Strategies among Studied Sample

Coping Strategies	Before intervention		After 1 intervention		P Significant	After 2 intervention		P Significant
	No	%	No	%		No	%	
Change place					-1.667			-2.111
Yes	21	70	26	36.7	.095	28	93.3	.035
No	9	30	4	13.3		2	6.7	
Total	30	100	30	100		30	100	
Lessening to radio and seeing T.V.					-3.873			-4.123
Yes	6	20	21	70	.000	23	76.7	.000
No	24	80	9	30		7	23.3	
Total	30	100	30	100		30	100	

Table (6) cont. : Impact of Nursing Intervention on Coping Strategies among Studied Sample

Coping Strategies	Before intervention		After 1 intervention		P Significant	After 2 intervention		P Significant
	No	%	No	%		No	%	
Setting alone					-2.111			-2.530
Yes	9	30	2	6.7	.035	1	3.3	.001
No	21	70	28	93.3		29	96.7	
Total	30	100	30	100		30	100	
Reading Koran					.000			.000
Yes	5	16.7	5	16.7	1.000	5	16.7	1.000
No	25	83.3	25	83.3		25	83.3	
Total	30	100	30	100		30	100	
Use progressive relaxation technique					3.742			-3.873
Yes	0	0	14	46.7	.000	15	50	.000
No	30	100	16	53.3		15	50	
Total	30	100	30	100		30	100	
Use breathing exercises					-3.873			-3.606
Yes	0	0	15	50	.000	13	43.3	.000
no	30	100	15	50		17	56.7	
Total	30	100	30	100		30	100	
Use physical exercises					-2.121			-2.111
Yes	3	10	9	30	.034	10	33.3	.035
No	27	90	21	70		20	66.7	
Total	30	100	30	100		30	100	
Use destruction technique					-3.464			-3.464
Yes	0	0	12	40	.001	12	40	.001
no	30	100	18	60		18	60	
Total	30	100	30	100		30	100	
Use recreation as a way of coping					-.447			.000
Yes	8	26.7	7	23.3	.655	8	26.7	1.000
No	22	73.3	23	76.7		22	73.3	
Total	30	100	30	100		30	100	

Table (7): Impact of Nursing Intervention on Patients Compliance among Studied Sample.

Items	Before intervention		After intervention one		P Significant	After intervention two		P Significant
	No	%	No	%		No	%	
Compliance for medication					-3.742			-4.400
Never	0	0	0	0	.000	0	0	.000
Rarely	6	20	0	0		0	0	
Usually	18	63.3	17	56.7		5	16.7	
Always	5	16.7	13	43.3		25	83.3	
Total	30	100	30	100		30	100	

Table (7) cont.: Impact of Nursing Intervention on Patients Compliance among Studied Sample.

Items	Before intervention		After intervention one		P Significant	After intervention two		P Significant
	No	%	No	%		No	%	
Compliance of diet					-4.025			-4.443
Never					.000			.000
Rarely	5	16.7	1	3.3		0	0	
Usually	13	43.3	9	30		3	10	
Always	10	33.3	12	40		12	40	
	2	6.7	8	26.7		15	50	
Total	30	100	30	100		30	100	
Compliance for rest and sleep					-3.771			-4.315
Never					.000			.000
Rarely	3	10	0	0		0	0	
Usually	13	43.3	7	23.3		5	16.7	
Always	12	40	17	56.7		9	30	
	2	6.7	6	20		16	53.3	
Total	30	100	30	100		30	100	
Compliance for exercises					-3.873			-4.524
Never					.000			.000
Rarely	14	46.7	2	6.7		1	3.3	
Usually	10	33.3	20	66.7		9	30	
Always	5	16.7	6	20		16	53.3	
	1	3.3	2	6.7		4	13.3	
Total	30	100	30	100		30	100	
Compliance for follow up					-3.606			-4.515
Never					.000			.000
Rarely	5	16.7	0	0		0	0	
Usually	10	33.3	10	33.3		3	10	
Always	12	40	14	46.7		13	43.3	
	3	10	6	20		14	46.7	
Total	30	100	30	100		30	100	

DISCUSSION

In a primary care practice or other health care provider practitioner can have a positive impact on prevention and management of hypertension through patient education and counseling. The nurse practitioner is often the first provider when a new patient comes to the provider. The nurse practitioner performs the initial evaluation and sets up a care plan for primary and secondary prevention strategies⁽¹⁵⁾.

The results of this study clarified that 43.3% of the sample were above 50 years old. This on line with the result of Onal et al.,⁽²²⁾ who reported that advanced age was the risk factors for hypertension. Also Abd- Elstar⁽²³⁾ found that about two third of the subject (65%) were in age

group 50-60 years. Lewis, Callier and Heitkemper⁽²⁴⁾, mentioned that hypertension is more prevalent in low socioeconomic groups and among the less educated. Also Abd-Elstar⁽²³⁾ support this finding which found that a high percent 32% of the sample have low monthly income less than 100 pound and almost half of the subjects 49% were illiterate. The present study support this finding as 40% of the subject were illiterate and half of the sample 50% have low monthly income less than 200 pound.

With respect to the nutritional factors; results showed that half of the samples 50% were consuming salty diet and 33.3% of the samples were having over weight. The majority of the

sample were consuming salty food and have overweight because they were farmers and this food are available all the time and they have lower socioeconomic levels. Also, they have bad dietary culture. This results are in agreement with the results obtained by Beare⁽²⁵⁾ who found that increased caloric intake leading to obesity and higher than recommended intake of cholesterol and sodium are related to hypertension. Also Abd-Elsatar⁽²³⁾ found that the majority of the sample were consuming pickles, fat, salty cheese egg, salt and carbohydrate 85.0%, 74.0, 57.0, 93.0, 87.0 and 91.0% respectively.

The present study revealed that only 23.3% of the subjects were smokers because 50% of the samples were female and who didn't smoke. This results are in line with Abd-Elsatar⁽²³⁾ who found that only 27.0% of subjects were smokers because of the females in the sample 53.0% who didn't smoke. There was a significant association between sever uncontrolled hypertension and current cigarette smoking in patient who were complaining with hypertension medication⁽²⁶⁾. Also Narkiewicz⁽²⁷⁾ who found that smoking was considered as a risk factor of hypertension because vasoconstriction is caused by nicotine.

Concerning sources of stress, the study results showed that, the most frequent identified stressors as verbatated by patients were disease, tension and pressure, noisy, income, family member, transportation, work and marital relation 86.7%, 60%, 76.7%, 40%, 40%, 33.3%, and 20% respectively. These results were in line with Brunner et al.,⁽²⁾ who stated that persons undergoing long term hemodialysis are concerned with real problems, generally their medical status is unpredictable and their lives are disrupted. They often have financial problems, difficulty in holding a job, waning sexual desires and impotence depression. Younger persons worry about marriage, having children and burden that they bring to their families⁽²⁾. Also this results are consistent with Bedier et al.,⁽⁸⁾ who reported that patients in El-Mansoura setting significantly identified job interference decreased sexual drive and reversal in family role with spouse as a top psychosocial stressors.

The present study found that most of the studied patients were either housewife's or farmer with low socioeconomic status, they significantly identified transportation to and from the unit of hemodialysis as sources of stress. This results are in line with Bedier et al.,⁽⁸⁾ who found that high percentage of studied patients in Alexandria setting were either housewife's or not working male with low socioeconomic status, they significantly identified transportation problems to and from the unit and frequent hospitalization as top psychosocial stressors.

Finding of the present study showed that after the protocol of care were applied there was an improvement of dyspnea and fatigue. This result was supported by El-shikh⁽²⁸⁾ who found that dyspnea and fatigue decreased among the study group subjects more than those of the control group. El-Hefinawy⁽²⁹⁾ reported that, after intervention, differences between the study and control groups were statistically significant in relation to dyspnea. Also Badway⁽³⁰⁾ found that after intervention dyspnea analogue scores were decreased among study group as compared to control group. Regarding edema, and body weight findings of this study revealed that after intervention there was an improvement of edema and weight⁽³⁰⁾. These results were in line with El-shikh⁽²⁸⁾ who found that after intervention the studied group had fluid balance as evident by edema, ascites, body weight and intake and output. The results revealed significant differences between both groups.

Abd-Elsatar⁽²³⁾ found that there was an improvement in the subject's blood pressure level after conducting the program. The researcher suggested that this was because of subjects' compliance to the dietary management of hypertension lead to improvement in subject's blood pressure levels. This results are in agreement with the results obtained by present study which founded that 53.3% of sample had moderate hypertension while after intervention two 40% of the sample had mild hypertension.

El-Hefinawy⁽²⁹⁾ reported that teaching sessions provided to study group subjects increased the

patient's knowledge. Frantz,⁽³¹⁾ and Goodwin⁽³²⁾ founded that education of the patient is the main component of their rehabilitation. Also Thompson⁽³³⁾ stated that education of cardiac patients during their hospitalization enhanced life style changes as dietary modification. These findings are consistent with the finding of the present study which revealed that there was a significant difference between before intervention and after intervention two as regard to knowledge about diet. Also this finding is agreement with Krautzig et al.,⁽³⁴⁾ who stated that the management of hypertension in patients with end stage renal disease on maintenance haemodialysis has changed completely in the past three decades. In the early 1960 it was possible to control even the severest hypertension without drugs by the use of a low sodium dialysate and a restricted salt intake. The diet was simple, it required home cooking without add salt and the avoidance of obviously salted foods. Excellent results using this regime were reported from several centers⁽³⁴⁾. Also Franges⁽¹⁵⁾ stated that studies have also demonstrated that nutritional program of weight loss, sodium restriction and alcohol restriction a achieved 39% success rate in reducing blood pressure without drugs. Moreover Pekovic- Perunicic⁽³⁾ found that the removal of excess water and sodium improves blood pressure control in patients with advanced renal disease.

The results of this study showed that there was a significant difference between before intervention and after intervention as regard to knowledge about the nature of disease. This finding is in agreement with that of Badr⁽³⁵⁾ who found that patients of the study group had a significant difference in their knowledge from the preoperative to the discharge time as compared to the control group. Other studies also supported this study findings, Abou Donia⁽³⁶⁾ found that the difference between the pre-and post-test in relation to patients, knowledge in all areas of learning about the disease were highly significant.

In relation to the patients' knowledge about medication the study results showed that the pre intervention scores indicated that the patients did not have enough knowledge about

the medication while after intervention there was an improvement of the patient's knowledge about medication there was a significant differences between before intervention and after intervention two. This results are in line with Rahman M⁽¹¹⁾ who stated that to improve blood pressure control in hemodialysis patients, technical advances in our ability to optimize intravascular volume need to be complemented by a better understanding of the pharmacologic treatment of hypertension understanding and overcoming barriers to adherence to medication and dialysis regimens will be instrumental in the implementation of new therapeutic advances.

Franges⁽¹⁵⁾ mentioned that moderate level physical activity on a daily basis will not only help with weight loss but can reduce blood pressure and the risk of cardiovascular disease. In the current study patients pre-intervention denoted the fact that almost all of them lack any essential knowledge about importance of exercise. The protocol of care that had been given resulted in a significant increase in patient's knowledge. There was a significant differ between before intervention and after intervention two.

End-Stage renal disease is a chronic illness that challenges the coping ability of patients and their families, demanding behavioral and emotional lifestyle changes⁽³⁷⁾. Also Suzanne et al.,⁽³⁸⁾ stated that patients subjected to chronic hemodialysis and chronic peritoneal dialysis experience stress of different nature which is one of the risk factor for hypertension and their coping ability varies. Coping behaviors can be constructive or destructive. Constructive behaviors help the individual to accept the challenge, resolve the conflict and results in adaptation. Destructive behaviors do not help a person to cope with stressors, affect reality, problem-solving abilities, personality and result in maladaptation⁽³⁹⁾. Coping may be psychological or sociological. The psychological coping includes direct actions related to the physiologic response to stress, social response (tries to remove the causes of stress) and emotional impact of stress (help the individual to modify his on her internal to the stimulus). Also psychological coping mechanisms include:

crying, laughing, sleeping, physical activity and exercise, smoking, lack of eye contact and withdrawal or limiting relationship to those with similar values and interests, while the sociologic coping behavior rely on resources of the individual or group⁽⁴⁰⁾. When the individuals tend to use one or more of the coping mechanisms on a regular basis and generally use all of them at some point, help the individual to modify his psychological status, this indicates that there is no one best method of coping, and no single method is uniformly applied or effective with all stressful situations⁽⁴¹⁾.

This results were in line with the results of the present study which found that their is statistical significance improvement in the stress measurement before and after intervention and the most frequent used coping strategies before intervention were change place setting alone, use recreation, lessening to radio and Seeing T.V., reading Koran 70%, 30%, 26.7%, 20% and 16% respectively. While after intervention two the most frequent used coping strategies were change place, lessening to radio and seeing T.V., use progressive relaxation technique, breathing exercises, destruction technique, physical exercises, recreation, reading Koran and setting alone as a way of coping 93.3%, 76.7%, 50%, 43.3%, 40%, 33.3%, 26.7%, 16.7 and 3.3% respectively.

This results were contradicted with Mathers⁽⁴²⁾ who stated that the application of psychosocial sessions did not have a significant effect on the adaptation level of elderly hemodialysis patients. This is supported by Haber. et al.,⁽⁴³⁾ and Edlin et. al.,⁽⁴⁴⁾ who emphasized that the use of stress management strategies is based on the belief that the mind and body are interrelated. The condition of one will necessarily affect the other. If the body is relaxed, the mind will feel relaxed as well. The stress could be reduced by techniques that produce a peaceful state of being as, patient recognition of the symptoms of stress, Supportive psychotherapy, social support, a discussion of the patient's current health care practices, relaxation exercises as breath meditation, progressive muscle relaxation,

guided imagery^(43,44).

Findings of the current study indicated that compliance to regimen was mostly influenced by nursing clarifications and explanation through the protocol of care. This was supported by Mai⁽⁴⁵⁾ who found that highest level of compliance were found on attendance at clinic appointments, non use of alcohol or drugs, and use of medications. Compliance was worse on diet, fluid intake and smoking behavior⁽⁴⁵⁾. Also, Patton et al.,⁽⁴⁶⁾ stated that this study was an assessment of the effect on compliance of a longitudinal, individualized educational program for patients with hypertension in managed care setting. Found that most of the patients who participated showed a statistically significant decrease in both systolic and diastolic blood pressure. There was also an effect on various recommended behaviors, including compliance with medication taking, ideal body weight, salt restriction, stress and exercise. A statistically significant relation existed between improved compliance with individual behavior changes and decreased blood pressure⁽⁴⁶⁾.

CONCLUSION

The finding of this study revealed a proposed protocol of care on physical, psychological responses and compliances to therapeutic regimen when implemented markedly improved the results in the hypertensive patients in hemodialysis. It has also revealed an improvement in patients' knowledge after nursing intervention regarding nature of disease, diet, importance of rest and sleep, importance of exercises, medication and follow up. A significant improvement after nursing intervention regarding physical responses as BP, dyspnea ,edema, fatigue , skin condition and reduction on sodium and potassium level. In addition, reduction of stress measurement after nursing intervention and improvement in the use of coping strategies as change place, lessening to radio ,physical exercises, breathing exercises, progressive relaxation technique and use of destruction technique. In addition an improvement after nursing intervention on

compliance for medication, diet, exercises, follow up, rest and sleep.

RECOMMENDATION

1-Coping with chronic illness as {CRF} requires the coordination of the efforts of policy makers , health providers as physicians, nurses, physiotherapist, and mass media for the provision of complementary services that is directed toward prevention of hypertension among hemodialysis patients.

2-Planning, implementing and evaluating in-services educational program and job training programs for nurses working with chronic ill patient to update their knowledge and skills required to deal with stress experienced by the patient and their families.

3-Raising awareness among hemodialysis patients about hypertension problems is a must.

4-Future studies might be focused on psychological and social aspect of chronic illness is required to help them to adapt

REFERENCES

1. Mahat G. (1997): Percerved stressors and coping strategies among individuals with rheumatoid arthritis. *Journal of advanced Nursing*; 25: 1 144-50.
2. Brunner S. Smaltzer S and Baro B. (2000): *Textbook of Medical Surgical Nursing 19th ed.* Philadelphia, JB Lippincott Co., 114-18; 115-153.
3. Pekovic- Perunicic G. (2004): Hypertension in patients on chronic hemodialysis: Pathophysiology and treatment. *Hippokratia*,; 8, 4: 147-50.
4. Barsoum R. (1995): *Kidneys: How to care and manage 1st ed.* Elahram center for translation and publishing, Cairo; 14672 -86.
5. Ibrahim MM , Rizk H, Appel LJ, Helmy S, Ashour Z. (1995): Hypertension, prevalence, awareness, treatment and control in Egypt. Results from the Egyptian National Hypertension Project (NHP). *NHP investigative tem. Hypertension Dec.*; 26 (6 pt 1): 886-90.
6. Statistical record of El-Mansoura University Hospital. El-Mansoura, 1999-2000.
7. Lok P. (1996): Stressors, coping mechanisms and quality of life among dialysis patients in Australia *Journal of Advanced Nursing*; 23: 873-81.
8. Bedier NA. (2001): Stressors, coping mechanisms and quality of life among patients on maintenance hemodialysis. *The New Egyptian Journal of Medicine*; 24(1); 47-59.
9. Mailloux LW. (2001): Hypertension in chronic renal failure and ESRD: Prevalence, Pathophysiology and outcomes. *Semin nephrol*; 21: 146-56
10. W.S. (2002): *Renal data system. USRDS annual data report.* Bethesda, diseases. MD: National institute of diabetes and digestive and kidney
11. Rahman M, Fup, Sehgal AR. (2000): Interdialytic weight gain, compliance with dialysis regimen and age are independent predictors of blood pressure in hemodialysis patients. *Am J Kidney Dis*; 35: 257-65.
12. Jaarsm, T. Abu-Saad H.H. Halfens, R. and Dracup, K. (1997): Maintaining the balance-nursing care of patients with chronic heart failure. *Int. J. Nurse stud*; 34(3): 213-21.
13. Kiellgren K, Ahlner J, Saljo R. (1995): Taking antihypertensive medication. Controlling or cooperating with patients? *Int J cardiol*; 47: 257-68 (Cross Ref) medline.
14. The Sixth Report of the Joint National Compliance on Prevention, Detection, Evaluation and Treatment of High Blood Pressure (JNCVI) 1997. Retrieved February 23, 2003, from National Heart Lung and Blood Institute National.
15. Franges Ellie (2004): Reducing risk factors for hypertension nursesaregreat.com.
16. American heart association Selected patient education references, Dallas texas 2000; <http://www.americanheart.org>.
17. Lithner, M. Zilling, T. (2002): Pre and post operative information needs. Patients education and counseling 2000; 40:1129-1137. In Badr, M.E. S.
18. Killing, Worth A, Vanden A. (1996): The quality of life of renal dialysis patients: Trying to find the missing measurement. *Int J Stud*; 33(1): 107-20.
19. Gurklis A, Mene M. (1988): Identification of stressors and use of coping methods in chronic hemodialysis patients. *Nursing research*; 3(4): 236-39.
20. Borg G. (1998): Borg's Scale, Borg's Perceived Exertion and Pain Scale. 22 - 24 at [http://: WWW.psychology.SU.Se](http://WWW.psychology.SU.Se).
21. Wichita KS. (1990): From the Department of Psychiatry, St. Joseph Medical Center. Printed in The Wechita Eagle, November 10.

22. Onal, A E., et al., (2004): The prevalence of and risk factors for hypertension in adults living in Istanbul. *Blood press*; 13(1): 31-36.
23. Abd El-Satar O A. (2006): Dietary management for hypertensive patients and its effects on nutritional status and blood pressure level. Doctorate Thesis Faculty of Nursing Menoufia University.
24. Lewis S M, Collier IC, Heitkemper M M. (1996): *Medical-Surgical Nursing, Assessment and management of clinical problems*, 4th ed., Mosby year Book Company, Baltimore, Chicago.
25. Beare P.G. (1998): *Adult health nursing*, 3rd Ed., Mosby. Chicago.
26. Mcnagny A., et al., (1997): Cigarette smoking and sever uncontrolled hypertension in inner-city. *African Americans, American Journal of Medicine*; 103, 121-7.
27. Narkiewicz, K. (1995): Interactive effect of cigarettes and coffee on daytime systolic blood pressure in patients with mild essential hypertension. *J. hypertens*; 13, 965.
28. El-Shikh A.A. (2003): The impact of a protocol of care on physical responses and compliances among patients with congestive heart failure. Unpublished doctoral thesis, faculty of nursing Menoufia university.
29. El-Hefnawy K A. (2003): Impact of performing breathing and coughing exercises on prevention redaction of bronchial asthma complication among adult asthmatics in Shebin El-Kom Hospitals unpublished master thesis, Faculty of Nursing Menoufia University.
30. Badawy A.T. (2003): The impact of nursing intervention for throacostomy tube on patients' outcomes. Unpublished master thesis, Faculty of Nursing Menoufia University.
31. Frantz A. (2002): The cardiac care step-down unit at home caring 1994; 31:42-48. In Badr, M.E.S.
32. Good win B A. (1999): Home cardiac rehabilitation for congestive heart failure nursing case management approach. *Rehabilitation Nursing*; 24(4): 143- 47.
33. Thompson D R, Ersser ST, Webster R A. (1995): The experiences of patients and their partners' month after a heart attack. *Journal of Advanced Nursing*; 22: 707-14.
34. Kroutzig U. (1998): Dietary salt restriction and reduction of dialysate sodium to control hypertension in maintenance hemodialysis patients. *Nephrol Dial. Transplant*; 13(3): 552-53.
35. Badr, M.E.S. (2002): Rehabilitation of the post cardiac surgery patient review article. Faculty of Nursing, Cairo University.
36. Abou donia S.A. (1981): A study to assess the effect of a health teaching programme on knowledge, beliefs and habits of patients with heart failure. Unpublished doctoral thesis, High Institute of Nursing.
37. Courts NF, Boyette BG. (1998): Psychosocial adjustment of males on three types of dialysis. *Clin Nurs. Res.*; 7(1): 47-63.
38. Suzanne CS., Brenda GB. (2000): *Text book of Medical Surgical Nursing*, 9th edition; 1146-1162.
39. Patter P. (1991): *Fundamentals of nursing concepts, process, practice* 3rd London; Mosby year book Co.; 906-921.
40. Declan C. (1996): An Approach to dealing with stress. *Nursing times*; 92{8} 44-47.
41. Farrington A. (1997): Strategies for reducing stress and Burnout in nursing. *Brith Journal Nurse*; 44-50.
42. Mathers TR. (1999): Effects of psychosocial education on adaptation in elderly hemodialysis patients. *ANNA J*; 26(6): 587-89.
43. Haber j, Miller B, Hoskins P (1997): *Comprehensive psychiatric nursing*, 5th Ed. Mosby comp, London, Tokyo; 240-260.
44. Edlin G, Golanty E, Brown M. (1997): *Essential for health and wellness*, 2nd Ed ,Jones and Bartlett publishers sad bury, Massachusetts, Boston, London; 17-32.
45. Mai FM, Busby K, Bell RC. (1999): Clinical rating of compliance in chronic hemodialysis patients. *Can J psychiatry*; 44; 478-82.
46. Patton K, Meyers. J and Lewis BE. (1997): Enhancement of compliance among patients with hypertension. *Am J. Manage care*; 3(11): 1693-8.

الملخص العربي

تأثير البروتوكول العلاجي على الاستجابات النفسية والعضوية ومدى الاستمرارية على إتباع النظام العلاجي لدى مرضى الفشل الكلوي المزمن الذين يعانون من ارتفاع في ضغط الدم في وحدة الغسيل الكلوي

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أجريت هذه الدراسة لتقييم مدى تأثير البروتوكول العلاجي على الاستجابات العضوية والنفسية ومدى الاستمرارية على النظام العلاجي لدى مرضى الفشل الكلوي المزمن الذين يعانون من ارتفاع في ضغط الدم في وحدة الغسيل الكلوي بمستشفيات جامعة المنوفية بشبين الكوم التعليمي.

وقد تم إجراء هذه الدراسة على العينة المتاحة والتي تكونت من ثلاثين مريض بالغين من الذكور والأناس وقد صمم البروتوكول العلاجي على أساس المراجع العلمية مستخدماً اثنين آداة لجمع المعلومات قبل وبعد تنفيذ البروتوكول العلاجي . كما تم جمع البيانات اللازمة للدراسة من المرضى من خلال:

أولاً: استمارة مقابلة وقد اشتملت على (معلومات شخصية، معلومات عن المرض، الاستجابات العضوية والنفسية ومدى الاستمرارية على إتباع النظام العلاجي للمرضى)

ثانياً: مقياس مقنن لقياس الضغوط النفسية.

وقد أسفرت النتائج على:

(١) حوالي نصف العينة كانوا يعانون من ارتفاع في ضغط الدم و إن معظم مصادر الضغوط النفسية لدى المرضى كان على الترتيب من المرض نفسه (٨٦,٧%) ، الدخل (٧٦,٧%) ، الضوضاء (٧٦,٧%)، المواصلات (٤٠%)، المشاكل الأسرية (٤٠%).

(٢) اثبت البروتوكول العلاجي أن هناك تحسن بدلالة إحصائية بين معلومات المرضى قبل وبعد تنفيذ البروتوكول.

(٣) وجد تحسن بدلالة إحصائية في مدى الاستجابات العضوية مثل ضغط الدم وصعوبة التنفس والإجهاد ونقص الصوديوم والبوتاسيوم بالدم وكذلك تحسن بدلالة إحصائية في مدى قياس الضغط النفسي وإستراتيجية التكيف وكذلك مدى الاستمرارية على البروتوكول العلاجي مما يثبت أن تغيير نمط الحياة باستخدام معالجة الضغوط النفسية وتطبيق استراتيجيات التكيف والاستمرارية على البروتوكول العلاجي تؤدي إلى انخفاض في ضغط الدم.

والخلاصة: أن تحسن معلومات المرضى وإتباع النظام العلاجي وتغيير نمط الحياة الذي يشتمل على إتباع النظام الغذائي، التمارين الرياضية، معالجة الضغوط النفسية وتطبيق استراتيجيات التكيف والاستمرارية على البروتوكول العلاجي يؤدي إلى انخفاض في ضغط الدم.