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The Effect of Orem's Self-care Education on Interdialytic Weight and Blood Pressure Changes in Hemodialysis Patients

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ABSTRACT

Chronic renal disease is known as progressive and irreversible loss of renal function. These diseases cover a wide range from proteinuria to increase in serum creatinine which is a clear sign of weak glomerular filtration rate and complete failure of kidney in final stages of kidney disease. Sodium retention in kidney patients accumulate liquids in their body, followed by the overweight and hypertension. The present study aimed to investigate the effect of Orem's self-care education on overweight between two dialysis sessions and blood pressure in patients suffering chronic kidney failure under treatment in Ayatollah Taleghani Hospital at Urmia. The present study is a quasi-experimental one conducted in a group with pretest and posttest in the hemodialysis ward of Ayatollah Taleghani Hospital of Urmia. 50 patients suffering chronic kidney failure were selected according to the purpose of the study and characteristics of the units under study. The data for the study were collected through interviews and the questionnaire for identifying needs, demographic information and the checklist. İn the pretest, the patients were asked to fill out the questionnaire for needs, demographic information and checklist and their average overweight between two dialysis sessions were recorded along with their blood pressure. Then, an educational plan was commenced based on problems identified and Orem's self-care theory and was taught to the patients in three thirty-minute sessions in five groups of ten subjects. Supplementary resources like videos, booklets etc. were also utilized. Two months later, average overweight and blood pressure for two months after training were measured. The data collected were analyzed through SPSS (version 18) computer application and coupled T test. The study revealed that the patients overweight decreased significantly between two dialysis sessions (P<0.001). However, no meaningful difference was observed between the systolic blood pressure (p=0.233) and diastolic blood pressure (p=0.196) before and after of educational program (P>0.05). Conducting self-care teaching programs on patients under hemodialysis treatment could reduce their problems especially in case of overweight between two hemodialysis sessions. Therefore, the use of this model in hemodialysis patients is recommended.

Keywords: Education; Orem; Self-care; Weight; Blood pressure; Hemodialysis

INTRODUCTION

Chronic diseases are among the most important causes of death and disability in many countries of the world [1]. Chronic kidney disease for progressive and irreversible advance of failure in the performance of all the definition of the disease range proteinuria. to increase serum creatinine, indicating a decrease in the amount of glomerular

filtration rate and finally the complete loss of kidney function, which is the final stage kidney disease is variable [2]. The symptoms of chronic renal failure include: cardiovascular, pulmonary disorders, digestive, nervous, skeletal muscle, skin, blood-electrolyte and acid, genitalia, and open that the main mechanisms of disorders caused by the retention of urea and other nitrogen substances in the blood [3]. Some Causes of chronic renal failure include: metabolic disorders such as diabetes mellitus, obesity, amyloidosis, hypertension, renal vascular diseases such as atherosclerosis, nephrosclerosis-hypertension, immunologic disorders such as glomerulonephritis, pyelonephritis, lupus erythematosus, infections such as pyelonephritis, tuberculosis, primary tubular disorders, nephrotoxins, Urinary tract obstruction such as renal calculi, hypertrophy of prostate, urethral constriction, congenital disorders such as polycystic disease, congenital absence of kidney tissue [4]. Hemodialysis, peritoneal dialysis and kidney transplant are available treatment for patients with renal failure, and hemodialysis is the most common treatment method among these [2]. Dialysis means passing through a membrane-permeable surface half to the other side and include: blood dialysis injective dialysis and [5]. The aim of hemodialysis is to bring out the extra fluid and waste material accumulation in the body and balance the electrolytes and chemicals in the blood, as well as an immediate way to fend off dialysis, toxin and poisons is that if you stay in the body leads to permanent damage and can be fatal [6].

Prevalence of chronic kidney failure in the world of 242 people per one million inhabitants and is about 8% of the annual amount is added [7]. This amount in USA 350 persons per one million inhabitants and an annual increase of 10% (8). The prevalence rate of chronic kidney failure in Iran in the year 2000 from 238 to 357 people per one million people in 2006 has increased [9]. The annual rate of 15% increase regresses [10].

According to the theory of Orem, self-care is a human regulatory action that people are doing this on purpose, to maintaining life, health and well-being. Take care of yourself should be learned and adjusted based on the needs of individuals and health status, the stages of growth, environmental factors, and Intentional done on a permanent basis [11].

In patients with chronic renal failure causes fluid accumulation increasing lack of disposal of sodium in the body, raising blood pressure, shortening the breathing and heart failure, edema, weight gain between dialysis sessions also depends on the amount of liquids are received [12].

Lack of awareness of or absence of sufficient knowledge in the field of proper diet, the exact amount of liquid intake causes numerous problems and complications, reduced quality of life and decreased life span is in these patients [3]. As well as these patients due to having multiple pharmaceutical treatments, specific dietary restrictions and gain the necessary ability in compatibility with the physical inability to Venice in order to deal with the complications of hemodialysis, are in need of special and continuous education [12].

Several studies in communities' variety show that the quality of life of patients treated with hemodialysis markedly compared with the general population is located in the lower level [13]. Training is a process during which the cognitive awareness of people, given the emotional and skill [14]. The ability to take care of yourself and learn the patient in connection with the disturbance created, saving time, energy and also encourage the patient to take care of themselves and to prevent the frequent hospitalizations [13].

As regards the observance of the diet and fluid restriction in patients with chronic renal failure treated with hemodialysis is considered completed, therefore, observe patients in the diet leads to down load all the prevention of uremia and gets renal complications [9].

Due to the nature of the chronic and debilitating disease of chronic renal failure and actual and potential problems of these patients as well as health care and the exorbitant cost of the country's economy on the import of the present study aims to determine the impact of Orem's Self-care education on inter dialytic weight and blood pressure in patients with chronic renal failure treated with hemodialysis was performed.

MATERIALS AND METHODS

This study was a quasi-experimental pretest-posttest. A total of 174 patient referred to the Hospital of hemodialysis in Taleghani Hospital in Urmia, 50 hemodialysis patients was selected with the method of sampling for objective-based, according to the characteristics of the case study.

Criteria to Participate in the Study
The desire to participate in the study, in the age range 15-50 years, at least in the elementary literacy (reading and writing), the lack of disability and learning disorders such as blindness, deafness, lack of mobility in hands, a lack of mental illness, having the ability to teach the definitive disclosure, chronic kidney failure, according to the NIT detects a Nephrology specialist physician, having at least 6 months of experience in hemodialysis section.

Criteria for Leaving the Study
Medical and paramedical education having, having the intention to leave and withdrawal from research within the educational program, a history of having courses in the field of nutrition and diet, and having a memory or consciousness disorders were aphasiac.

Data Collection Procedure
The method of data collection , interview and data collection tools was a questionnaire for determining the properties of the educational needs and demographic patients age, sex, marital status, education level, life style, employment status before and after the illness, duration of dialysis initiation, frequency and hours of dialysis a week, the primary causes of chronic renal failure and check-list in order to collect information about the values of the overweight , systolic and diastolic blood pressure with regard to the objectives of the study was prepare and set up.

The direction of the scientific validity of the questionnaire and check list of content validity was used so that beginning with the study of books and articles and new data collection tools (questionnaire and check list), and then in the voluntary of teachers and experts of Faculty of nursing and midwifery, Islamic Azad University Tehran and Urmia and collected their opinions seriously address violations of the proposed reform was necessary, and to trust the tools of scientific method, were used to test this For which the questionnaire by 15 patients have qualified in two steps to a distance of 15 days was completed and the amount of correlation was calculated and the validity of the tool with the correlation coefficient was confirmed 0.84 cases.

In the first phase of the research, the researcher explained the objectives of the research and the process of its implementation, since every single sample testimonial for participating in the research were taken, then set the education and needs demographic questionnaire and check list of interviews completed by the scholar levels systolic and diastolic blood pressure in overweight and a hours of hemodialysis for two months prior to training measurement and registration, it should be noted that each patient every week Hemodialysis three times, in order to verify the obtained information more tools used to evaluate their performance and carefully selected and then used to control the blood pressure of a mercury manometer yamasu 602 model along with the stethoscope with Mark Laitman and to control the weight of the digital scale that its performance had been carefully examining the use of advance order was in addition to the potential for error, the researcher as a person, the prior information and after training and registration. After you determine the needs of training, a training program based on scientific principles and the pattern of Orem self-care training and patient consultations with Nephrologist and dietitian aims to empower patients in the areas of self-care, diet, and limited food list, how to calculate the amount of protein and fluids are made daily, take care of the vascular path (fistulas and catheters) and also the complications of overweight between two dialysis sessions ,systolic and diastolic blood pressure design and was accomplished.

Before the implementation of educational programs patients were divided into five groups of ten subjects. Then during three sessions 30-minute the training based on problem set and Orem Self Care Model was conducted with the use of educational tools (video projector and an educational pamphlet) by researcher.

İn the third stage of research was conducted two months after the last session which was again the values of overweight, systolic and diastolic blood pressure for two months after training, measuring an average of data as they are after training was recorded. The data obtained using the statistics analytical-descriptive (paired t) and with the help of the SPSS (version 18) software of statistical analysis.

RESULTS

There were 61.3% males and 38.7% females in this study with a mean age of 46±13.6 years.33% of the samples were single and 67% married.59% of the samples was the level in reading writing, 29.7% at diploma, 7.3% at associate degree, And 4% of Bachelor's and higher. Only 11.3 % of the patients had university degree.

The primary causes of chronic kidney disease in 11.5% of cases of diabetes, 33.8% of high blood pressure, 8.8% glomerulonephritis, 2.3% Polycystic Kidney, 2.4% of causes of urologic, 1.3% of the causes of congenital, and 39/9% of unknown causes (Table 1).

Table 1. Main characteristics of the patients studied (N = 50)

Characteristics		Group (%)
Age		46±13.6
Gender	Female	38.7
	Male	61.3
Marital status	Single	33
	Married	67
Educational Degree	Reading Writing	59
	Diploma	29.7
	Associate Degree	7.3
	Bachelor and higher	4
Employment status before disease	Working	68.7
	Unemployment	31.3
Employment status after disease	Working	18.7
	Unemployment	81.3
primary causes of disease	Diabetes	11.5
	high blood pressure	33.8
	Glomerulonephritis	8.8
	Polycystic Kidney	2.3
	Urologic	2.4
	Congenital	1.3
	Cause unknown	39.9

The findings in the field to determine and compare the values of the weight gain between the two training sessions before and after dialysis in table 2 has been shown, as in the table view gets added weight amounts between the two dialysis sessions, before and after the implementation of the educational program gets no significant difference.

Table 2. Average overweight between two dialysis sessions before and after educational program

phase / Overweight	Before Education	After Education	Statistical tests result			
	$\overline{x} \pm sd$	$\overline{x} \pm sd$	P-value	t	df	Result
Interdialytic weight(kg)	2.54±1.38	1.26±1.07	0.001	3.747	49	S

The findings related to systolic and diastolic blood pressure before and after training in table 3 it is shown, as in the table view and diastolic systolic blood pressure gets before and after the implementation of the educational program does not see significant differences.

Table 3. Average blood pressure before and after educational program

phase / Blood Pressure	Before Education	After Education	Statistical tests result			
	$\overline{x} \pm sd$	$\overline{x} \pm sd$	P-value	t	df	Result
Systolic Blood Pressure (mmHg)	144/17±19.75	143.47±17.64	0.233	0.952	49	N.S
Diastolic Blood Pressure (mmHg)	89.80/±14.66	88.34±11.81	0.196	1.176	49	N.S

DISCUSSION AND CONCLUSION

The study of the impact of Orem's Self-care education on interdialytic weight and blood pressure in patients with chronic renal failure treated with hemodialysis examine.

The findings of this study showed that training with an emphasis on aspects of the care of hemodialysis patients can reduce the problems in these patients. In this context the results of the study of Oka *et.al* showed that the ability of self-care and self-care training in connection with the cause of admission of diet and reduce the amount of urea,

potassium, phosphorus, and excess weight is between two sessions of dialysis [15]. The results of the study of Scheltter *et.al* showed that the training program on the values of p does not have a significant impact, but on the amount of calcium has significant impact [16]. As well as the results of two separate study indicates that no significant impact on educational programs, weight values between the two sessions of dialysis and comply with the restrictions of liquids in hemodialysis patients [17, 18]. The research results as well as Ford *et.al* as the effects of diet on laboratory values education (phosphorus, calcium, parathyroid hormone) awareness of patients treated with hemodialysis with high phosphorus represents significant laboratory values education and patients treated with hemodialysis with high phosphorus [19]. The results of the study of Los *et.al* showed that promote quality of life for hemodialysis patients can be applied [20]. As well as the results of a study of Mohammadi *et.al* showed that educational programs on reducing that care problems and increase the quality of life for patients treated with hemodialysis is effective [7]. The research results, Ahmadi *et.al* showed that the implementation of the model of care sought significant impact on stuck average blood pressure hemodialysis patients but with no significant impact on the implementation of the model weight control registry found hemodialysis patients [12]. The results of the study, Jafari et.al showed that diet education program significant impact on reducing blood pressure, overweight and creatinine amount, but no meaningful difference on the blood urea nitrogen [21]. The results of the study, Bahadori *et.al* showed that interventional program based on self-care model significant impact on reducing blood pressure, overweight and improved all dimensions of the quality of life [22]. Finally, according to the findings of this research it can be concluded that the implementation of the educational program in patients with chronic renal failure treated with hemodialysis can have a significant effect on reducing overweight between the two dialysis sessions.

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