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ORIGINAL ARTICLE

Nutritional Behavior and Medication Adherence among Patients Undergoing Hemodialysis

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ABSTRACT

Background: Chronic kidney disease is a progressive disease with five phases based on the glomerular filtration rate. In each of these stages, the patient continues to suffer from the condition and must take responsibility for his health, such as changing his diet and lifestyle and taking significant doses of medication. If not treated effectively, Chronic kidney disease can lead to a high rate of morbidity and mortality, lowering the quality of life and hastening death.

Objectives: This study aimed to evaluate the effectiveness of an interventional program on patients' knowledge toward nutritional behavior and medication adherence as health-protective behaviors.

Methodology: A quasi-experimental (tow-group pretest-posttest) design was used to conduct this study at the hemodialysis unit in Al-Hussain Teaching Hospital. A non-probability (purposive) sampling was used to select (80 patients) undergoing hemodialysis. To measure the effectiveness of the interventional program on patients' knowledge, the researcher used a knowledge form which included (40) questions. The validity of the questionnaire and the interventional program were verified by presenting it to (17) experts. The reliability was determined using the test-retest approach for the knowledge questionnaire.

Results: The study findings showed that there are highly statistically significant differences between the scores of patients knowledge in two levels of measurements (pre-test and post-test) at p-value (0.000), where the statistical mean of the overall knowledge at p-value of patients in the pre-test was (0.896), while it becomes (0.000) in post-test.

Conclusion: The study concluded that the interventional program positively affects the patients' knowledge concerning nutritional behaviors and medication adherence as health-protective behaviors.

Keywords: Nutritional behavior, Medication adherence, Hemodialysis, Health promotion.

INTRODUCTION

Advanced chronic renal failure is an irreversible disability in which the kidneys' ability to filter metabolic waste products from the blood and maintain water and electrolyte balance is lost, resulting in uremia. People with advanced chronic renal failure cannot exist without effective alternative treatment. Hemodialysis is the greatest alternative treatment nowadays.[1]

Chronic hemodialysis (HD) is a treatment and preventive measure to save the lives of patients with end-stage renal disease (ESRD). They are completely reliant on the availability of vascular access works (VA) and the establishment and successful use of access to the blood vessels, arteries, and veins necessitates a multidisciplinary team of learners to ensure a coordinated vasculature.[2]

Majors in health behavior science study and analyze how human activities, cognitions, communications, and the environment affect health, relationships, chronic disease, and quality of life through time. They work to promote healthy lifestyles through education, policy change, needs assessment, program development, and implementation, individual counseling and coaching, media and materials creation, and evaluation of the impact and outcome of their efforts.[3]

Patients must undoubtedly make several changes and adaptations to their everyday habits to fit into the dialysis sessions' rhythm. Non-adherence to the prescribed dietary change and medications is prevalent among HDPs (hemodialysis patients), given the required dietary change (restricted in salt, phosphorus, potassium, and fluid contents of food) and the numerous drugs HDPs must take. Chronic disease management necessitates a lot of effort on the part of patients, their families, and caregivers. Non-adherence to diet and medication in HDPs can have substantial repercussions, including poor health outcomes and increased morbidity and mortality.[4]

Health protection is the science and art of modifying one's lifestyle to achieve perfection. It entails activities such as proper eating, frequent exercise, avoiding harmful habits, and enhancing one's performance despite the disease. Controlling emotions and stress, as well as coping with disease-related problems, as well as independence and constancy. In other words, health promotion empowers individuals by assisting them in identifying beneficial aspects in their personal and social health, as well as making sound decisions in the selection of hygienic behaviors and, as a result, leading a healthy lifestyle.[5]

Renal disease and hemodialysis therapy have been demonstrated to affect health-promoting habits in individuals undergoing hemodialysis in several studies. Ma[6], for example, found that health-promoting activities in hemodialysis patients are not at an acceptable level and that some interventions are required to improve these behaviors.

METHODOLOGY

A quasi-experimental design of the study has been used in the present study to assess the effectiveness of an instructional program on Patients' knowledge concerning nutritional behaviors and medication adherence as health-protective behaviors in Al-Hussain Teaching Hospitals during the period from November 14th, 2021 to April 19th, 2022.

After receiving the necessary approvals to conduct the study from the Council of the College of the Nursing / University of Baghdad and the Research Ethics Committee, the researcher submitted a detailed description of the study, including its objectives and methodology to the Ministry of Planning (Central Statistical Organization) and the Al-Muthanna Health Directorate to obtain official permission to conduct the study. Finally, approval was issued to Al-Hussain Teaching Hospital to secure the management and employees of Al-Hussain Teaching Hospital's agreement and cooperation.

The researcher obtained approval from all patients and the names of the patients were not collected. Also, the researcher explains the research and its goals for all patients. Therefore fully informed about their mission was obtained. The researcher told all participants that the results of the questionnaire would be utilized specifically for research purposes. Also told those that all participants are autonomous individuals have the right to refuse involvement.

Setting of the study, this research was conducted at AL-Muthana City Hospitals including AL -Hussain Teaching Hospital AL-Amal and AL-Hayat dialysis center. A purposive sample of 80 patients was chosen: 40 patients were exposed to the instructional program as the study group, and another 40 patients were not exposed to the program as the control group. Ten patients were excluded from the study sample as part of a pilot study.

The questionnaire instrument and program were presented to a panel of seventeen (17) specialists to assess their validity for the study project. In each field, the professionals had more than (5) years of experience. The experts' examination of the questionnaire and program found that the items on the questionnaire and program were clear and sufficient for the study. According to the experts' recommendations, minor changes were made to a few sections of the questionnaire and the program.

A pilot study was carried out on (ten randomly selected patients), to determine the study instruments' reliability. The patients in the pilot study have the same criteria as the original study sample. The pilot study was conducted in the hemodialysis unit at Al-Hussain Teaching Hospital during the period from 22nd of December 2020 to the 10th of January 2022. The participants submitted to the test, then they participated in an interventional program and after completing the program a retest was done after two weeks. The ten patients who participated in the pilot study are excluded from the original study sample.

The reliability of the knowledge questionnaire was determined using a test and re-test approach that was obtained through evaluating (five) patients undergoing hemodialysis in Al-Hussain Teaching Hospital. The time interval between the test and re-test was two weeks for the knowledge questionnaire reliability. The result of the questionnaire reliability shows that the person correlation coefficient is (r = 0.84). Descriptive and inferential statistics were used to analyze the results of the study using the Statistical Package of Social Sciences (SPSS) version 26.

RESULTS AND DISCUSSION

Table 1: Knowledge of sample (Study and Control Groups) in pretest.

Variables	Classification	Groups				Significance
		Study		Control		
		F	%	F	%	
	Poor	19	47.5	12	30.0	T-test = 1.322 df =78 p. value=0..190 NS
	Moderate	20	50.0	28	70.0	
	High	1	2.5	0	0	
	Total	40	100	40	100	
Medication adherence	Moderate	14	35.0	8	20.0	T-test =2.763 df =78 p. value= 0..007 S
	Poor	25	62.5	32	80.0	
	High	1	2.5	0	0	
	Total	40	100.0	40	100.0	
Total knowledge	Poor	24	60.0	27	67.5	T. test= 0.131 df=78 p. value=0.896 NS
	Moderate	16	40.0	13	32.5	
	Total	40	100.0	40	100.0	

Table 2: The Knowledge of the Sample (Study and Control Groups) in Posttest

Variables	Classification	Groups				Sig.
		Study		Control		
		F	%	F	%	
Nutritional behaviors	Poor	8	20.0	12	30.0	HS
	Moderate	32	80.0	28	70.0	
	High	0	0	0	0	
	Total	40	100	40	100	
	T-test=15.624 df=78 P. value=0.000					
Medication adherence	Poor	1	2.5	28	70.0	HS
	Moderate	5	12.5	12	30.0	
	High	34	85.0	0	0	
	Total	40	100.0	40	100	
	T-test=20.107 df=78 P. value=0.000					
Total knowledge	Poor	0	0	24	60.0	HS
	Moderate	1	2.5	16	40.0	
	High	39	97.5	0	0	
	Total	40	100.0	40	100.0	
	T-test=20.282 df=78 P. value=0.000					

Table 3: Comparing between pre and post the educational program for the study group

Variables	Classification	Groups				Significance
		Pre		Post		
		F	%	F	%	
Nutritional behaviors						T test = -14.941 df =39 Sd= 3.69329 P value=0.000 HS
	Poor	19	47.5	8	20.0	
	Moderate	20	50.0	32	80.0	
	High	1	2.5	0	0	
	Total	40	100	40	100	

Medication behaviors	Poor	25	62.5	1	2.5	T test =16.204 df =39 Sd= 3.67868 P value=0.000 HS
	Moderate	14	35.0	5	12.5	
	High	1	2.5	34	85.0	
	Total	40	100	40	100.0	
Total knowledge	Poor	24	60.0	0	0	T test =-28.040 df =39 Sd= 10.98364 P value=0.000
	Moderate	16	40.0	1	2.5	
	High	0	0	39	97.5	
	Total	40	100	40	100.0	

The results of the present study in Table 1 explored the statistics of patients' knowledge regarding health-protective behaviors. Patient knowledge statistics are classified into two main domains: assessment of patient's knowledge about nutritional behaviors; and assessment of patient's knowledge about medication behaviors. Likert scale questions items from (Pre and Post) periods due to applying for the instructional program in the study group as well as the control one with comparison significance. The results before the application of the program show that knowledge domains in both the study and control one are non-significant except in one domain (medication behaviors). The total knowledge level is non-significant and the majority of sample subjects are at a poor level.

These findings agree with those of Shinjar[7] that there is a huge gap in the knowledge of patients undergoing hemodialysis about nutritional behaviors, and this knowledge deficiency may also be a barrier to healthy behaviors. Furthermore, it agreed with those of Dashtidehkordi[8], which shows that there is a poor patient undergoing hemodialysis knowledge regarding health promotion with a p. value of 0.669. These findings also agree with those of Humudat[9] that most samples participating in the study had poor knowledge regarding nutritional behaviors (The p-value is 0.143). These findings agree with those of Muliani[10], who found that half of the samples in the study had poor knowledge of medication behaviors (50%).

The researcher concludes that patients had a gap in their knowledge of the mentioned hemodialysis unit. Because chronic renal failure needs special and healthy behaviors, the patients have very little knowledge on this topic, and since the only treatment so far is hemodialysis, courses should be increased on healthy behaviors. Patients should be provided with continuing instructional programs to help them improve their health.

Table 2 shows that the study found high significance in both domains. In addition, the table shows that the majority of patients in the study group have a high knowledge level, in all categories, whereas the control group has a low knowledge level.

There are statistically significant differences between the study group's pre-and post-application of the instructional program, as shown in Table 3. These results agreed with those in the study by Dashtidehkordi[8], who revealed that the level of patients' knowledge changed from a lower percentage pre to a higher satisfactory percentage post-implementation of the instructional program. Reported mostly highly significant differences at P 0.002, which indicated the effectiveness of the studied instructional program.

These results agree with those of Astuti[11], Which reveals that there is a highly significant difference in patient psychosocial behaviors between before and after the application of cognitive behavior therapy with p. value (0.043). In addition, it agreed with Al-Ashour[12], who found high adequate turns in patient behaviors to advance quality (0.001) highly significant in the posttest. Furthermore, these results agreed with Borzou[13] in that a high adequate behavior knowledge level with (p-value 0.01) was highly significant in the post-test.

The researcher thinks that these changes in patients' behavioral knowledge toward health-protective behaviors reflect that most patients undergoing hemodialysis needed of instruction and explanation about healthy behaviors. They also reflect that patients needed more programs from health institutions to guide them to more healthy aspects.

CONCLUSION

Before the implementation of the interventional program (pre-test period), the patients undergoing hemodialysis in the study sample had poor knowledge of health-protective behaviors. The study shows that the interventional program had a positive effect on the patient's knowledge toward health-protective behaviors.

Recommendation: Increase health organization effort to increase training and education program for patients undergoing hemodialysis regarding healthy lifestyle through the monthly lectures in the hemodialysis unit. Putting illustrated pictures and posters about healthy nutrition and how to deal with the medicines prescribed to patients undergoing hemodialysis and alerting patients to them to see and apply them to maintain their health status and to clarify the risks about non-compliance with these instructions and what are the damages to the health status.

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