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Physical behavior and interpersonal relationship among patients undergoing hemodialysis

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Abstract---This study aimed to evaluate the effectiveness of an interventional program on patients' knowledge toward physical behavior and interpersonal relationship as health-protective behaviors. A quasi-experimental (two-group pretest-posttest) design was used to conduct this study at the hemodialysis unit in Al-Hussain Teaching Hospital for the period from (18th of Dec 2021, to the 5th of May 2022). 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 (18) experts. The reliability was determined using the test-retest approach for the knowledge questionnaire. 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 a p-value (0.000), where the statistical mean of the overall knowledge at a p-value of patients in the pre-test was (0.896), while it becomes (0.000) in post-test.

Keywords---physical behavior, interpersonal relationship, Hemodialysis, Health promotion.

Introduction

End-stage renal disease is characterized as a total and permanent loss of kidney function, and it is a health issue that necessitates long-term and expensive treatment. End-stage renal illness has reached epidemic proportions, placing a

major medical, social, and economic load on healthcare resources, as well as a huge medical, social, and economic dilemma for patients and their families. (Ahamed & Sallam, 2018).

Management of kidney failure is depending on the stage of chronic kidney disease and if its function is less than 10-15% then dialysis treatment or kidney transplantation must be carried out to survive. Hemodialysis is the process of cleaning the blood by the accumulation of waste. It is used for patients with end-stage renal failure or acutely ill patients who require short-term dialysis. Hemodialysis does not cure or reverse kidney disease and cannot compensate for the loss of metabolic or endocrine activity carried out by the kidneys. (Suzan et al., 2016).

Health behavior science majors investigate and assess how human actions, cognitions, communications, and the environment influence health, relationships, chronic disease, and quality of life through time. They promote healthy lifestyles through education, policy change, needs assessment, program development and implementation, individual counseling and coaching, media and materials creation, and evaluation of their activities' impact and outcomes (Sabanayagam, 2019).

Individuals must first establish whether they are engaging in a certain activity and the factors that influence that behavior to develop a positive health behavior. As a result, various models for evaluating the behavior process have been developed. The Health Promotion Model is one of these models. The model, based on the social learning theory, was developed by Pender in 1982-1984 to explain health-promoting behaviors. (Tout et al., 2020).

Hemodialysis patients face a variety of physical and psychological issues that limit their ability to act, resulting in lowered self-esteem and personal independence. Patients on hemodialysis have poorer self-esteem than healthy people, according to numerous research conducted in various countries. Self-esteem, according to Rosenberg (1965), is described as a person's assessment of oneself, which shows how that person regards themselves or in approving or condemning them self. (Shad et al., 2018).

All HD patients should have their physical activity levels assessed and monitored, especially on the day of their HD operation, because they frequently have difficulties due to their sedentary lifestyle. To avoid complications from HD and to live a healthy and happy life, patients should increase their daily exercise and self-care. (Ali et al., 2021).

Renal disease and hemodialysis therapy have been demonstrated to affect health-promoting habits in individuals undergoing hemodialysis in several studies. Ma6, 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.

Method

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 physical behaviors and interpersonal relationship 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 (18) 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.

Result

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

Variables		Classification	Groups				Significance
			Study		Control		
			F	%	F	%	
Physical and follow up behaviors	Poor	25	62.5	23	57.5	T test = 0.677	
	Moderate	15	37.5	15	37.5	df =78	
	High			2	5.0	p. value=	
	Total	4	100	40.0	100	0.500	
		0				NS	
Interpersonal behaviors	Poor	28	70.0	24	60.0	T test =0.640	
	Moderate	11	27.5	14	35.0	df =78	
	High	1	2.5	2	5.0	p. value	
	Total	40	100.	40	100.0	=0.524	
			0			NS	
Total knowledge	Poor	24	60.0	27	67.5	T. test= 0.131	
	Moderate	16	40.0	13	32.5	df=78	
	Total	40	100.	40	100.0	p.	
			0			value=0.896	
						NS	

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

Variables		Classification	Groups				Sig.
			Study		Control		
			F	%	F	%	
Physical and follow up behaviors		Poor	2	5.0	23	57.5	HS
		Moderate	0	0	15	37.5	
		High	38	95.0	2	5.0	
		Total	40	100	40	100	
		T-test=17.126	df=78	P. value=0.000			
Interpersonal behaviors		Poor	2	5.0	23	57.5	HS
		Moderate	23	57.5	15	37.5	
		High	15	37.5	2	5.0	
		Total	40	100.0	40	100.	

	T-test=7.606	df=78	P. value=0.000			
	Poor	0	0	24	60.0	
Total knowledge	Moderate	1	2.5	16	40.0	HS
	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		
Nutritional behaviors		F	%	F	%	T-test =19.594 df =39 Sd= 3.38927 P value=0.000 HS
	Poor	25	62.5	2	5.0	
	Moderate	15	37.5	0	0	
	High	0	0	38	95.0	
	Total	40	100	40	100	
Medication behaviors	Poor	28	70.0	2	5.0	T-test =9.956 df =39 Sd= 3.89074 P value=0.000 HS
	Moderate	11	27.5	23	57.5	
	High	1	2.5	15	37.5	
	Total	40	100.0	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	

Discussion

Number of inflicted children is “one” in the study participants (62.9%), whereas in the control group to “one” and “two” as seen with same percentage of 42.9%. The study findings agree with study done by (Hossain, Hasan, Petrou, Telfer, & Al Mosabbir, 2021) who conducted a study to investigating the parental thalassemia knowledge gaps and perceptions in Bangladesh, Were found (82.7%) of his samples had one child regarding inflicted children in family.

Regarding to the duration of illness refers to 6-10 years (11.36 ± 7.031 year) as reported by parents in the study group (34.3%) and refers to 1-5 years (8.66 ± 5.406) in the control group (37%). This results agree with study by (Abu Samra, Auda, Kamhawy, & Al-Tonbary, 2015) who conducted a study to explore the effectiveness of a chelation therapy educational curriculum on the quality of

life of thalassemia youngsters in Egypt, that show (27.7%) of sample have duration of illness between (6-9) years.

The current study shows that only two (5.7%) of fathers are affected in both group; study and control. Only six (17.1%) of mothers are affected in the study group while no affected mother in the control group. While the carrier of disease shows that 94.3% of fathers are carrier in the study group and control group, while 82.9% of mothers are carriers in group of study and 100% of mothers are carriers in group of control. This results agree with (Khan, 2018). Who conducted a study to determined clinical and demographic variables of thalassemia patients, that fined the regard family history of thalassemia in their study about (92.1%) have a family history with thalassemia.

parents' knowledge about iron accumulation in child and how to treat it; the parents in the study group show poor level in most items during the pre-test, while they show good level among items during the post-test 1 and 2, The study findings agree with study done by (Abo Jeesh, Yousif, & Al-Haboub, 2018) who exhibits an improvement in caregivers' knowledge of blood components and functions, hemoglobin level, causes of thalassemia, prevention, therapy, blood transfusion, and nutrition after obtaining the teaching guide The general knowledge of caregivers on thalassemia has improved, with the mean and standard deviation of 34.124.50 before getting the teaching guide and 37.434.61 after receiving the teaching guide.

parents' knowledge about nutrition; the parents in the study group show poor level in majority of items during the pre-test, while they show good level among items during the post-test 1 and 2. Also the parents in the control group show poor level of knowledge in majority items over the three times of test; pre, post 1, and post 2.

This result agree with the study done by (El-Esrigy, Farahat, & Othman, 2021). who wanted to increase parental knowledge and practice by implementing an Egyptian health teaching program. Who reveals that the majority of the study participants (85 percent) had a poor total knowledge score before to health education. In addition, the study found that interventional educational programs were highly helpful in improving knowledge and perceptions of the disease, with (65%) having good understanding.

The results of the RM-ANOVA test imply that education program about chelation therapy and nutrition was extremely effective in increasing parents' knowledge in the study group, This finding is consistent with the findings of the study (Abu Samra, Auda, Kamhawy, & Al-Tonbary, 2015) who aimed to evaluate the impact of a chelation therapy health education program It was discovered that (97.7 %) and (2.3 %) of them had poor and average pre-program scores, respectively. On the other side, it was revealed that (61.8%) and (38.2%) of them had average and good post-health teaching program scores, respectively.

The study shows there is significant relationship between parents' knowledge with regard to affected & carrier father with disease, The study findings agree with study done by (Manzoor & Zakar, 2019) who conducted the study to evaluate the

sociodemographic variables that affecting parental knowledge about thalassemia major. That revealed significant association was seen between fathers knowledge and their positive history with thalassemia.

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.

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