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Assessment of Self-Care Practice of Patients on Maintenance Hemodialysis at Cairo University Hospitals

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Abstract

Modalities of renal replacement therapy (RRT), hemodialysis, peritoneal dialysis and kidney transplantation, mean an important challenge for the patient's own disease management. By focusing on regaining and promoting self-care, patients with ESRD are encouraged to use their potential for personal development and to increase their responsibility for their health and well-being. Aim: the current study was carried out to assess self care practice of patients on maintenance hemodialysis at teaching hospital. Research questions: Q. How do patients on maintenance hemodialysis care of themselves? Design: A descriptive correlational research design was utilized to achieve the aim of the study. Sample: 56 adult male and female patients on maintenance hemodialysis for more than one year were study subjects. Setting: The study was conducted at King Fahd Unit, university hospital; Cairo. Tools: For the purpose of this study, an interviewing questionnaire of assessing self care practices of patients on maintenance hemodialysis was utilized. Results: The subjects' mean age (40.83±14.17) years; More than half of the subjects were females (51.8%). (53.6%) were married, 2/3 (66.1%) need help, the duration of being treated with hemodialysis (37.5%) was between 3->6 years, (64.3%) having co-morbid diseases and other health problems such as hypertension, diabetes and systemic lupus; (73.2%) have the shunt in left arm, (92.9%) are scheduled for three times a week, (91.1%) practice and achieve their activities independently, almost all of the subjects provide care for shunt site most of the days , and (94.6 %) drinking more than the allowed amount of fluid/ day.

Keywords: self care practice, assessment, and hemodialysis

1. Introduction

Chronic kidney disease (CKD) is a worldwide public health problem with an increasing incidence and prevalence, poor outcomes, and high cost. Outcomes of chronic kidney disease include not only kidney failure but also complications of decreased kidney function and cardiovascular disease (Mini Emmanuel, Unni, Deepa and Aboobacker, 2010).The epidemiology of end-stage renal disease (ESRD) is well investigated in the developed world. However, in developing countries, this is less well documented due to the absence of national registries. No reliable data are available on the incidence and prevalence and etiology of ESRD in most African countries (Maoujoud, Aatif, Bahadi, Zajjari, Benyahya, Ahid and Oualim, 2013).

Chronic kidney failure has no cure, but treatment can help control signs and symptoms, reduce complications, and slow the progress of the disease. If kidney damage continues to progress to the point where the kidneys are functioning at less than 15 percent of capacity, end-stage kidney disease occurs (Mayo Clinic Staff 2010) Individuals who reach the point in their kidney function falls this indicate the need for a renal replacement therapy (RRT) i.e. dialysis (hemodialysis or peritoneal dialysis); or a transplant which are the only two possible treatments to support the patient's life (Biddulph, 2010) said.

Dialysis is the process used to remove fluid and waste products from the body when the kidneys are unable to do so. The purpose is to maintain the life and well being of the patient until kidney function is restored. Dialysis works on the principles of the diffusion of solutes and ultrafiltration of fluid across a semi-permeable membrane. There are three primary types of dialysis i.e. hemodialysis (primary), peritoneal dialysis , hemofiltration , as well as there are two secondary types of dialysis which are hemodiafiltration , and the intestinal dialysis (National Kidney Foundation,2010).

Several complications can be arised for patient under hemodialysis. For example, infection (Gore and Associates, 2011); itching or Pruritus which is often worse during or just after treatment (NKUDIC, 2010); renal Osteodystrophy i. e. changes in bones where it become thin and weak (Kliger, 2004); also sleep disorders (Patel, 2009) patients on dialysis often have insomnia, where these sleep disturbances can lead to “day-night reversal”

(insomnia at night, sleepiness during the day), headache, depression, and decreased alertness. Amyloidosis, another complication arise among patients under hemodialysis, it is common in people who have been on dialysis for more than 5 years , it is developed when proteins in the blood deposit on joints and tendons , causing pain , stiffness and fluid in the joints (NKUDIC, 2010).

In addition, intra-dialytic hypertension during or immediately after the session may result in post dialysis hypertension (Inrig, Patel &Toto 2009). Ischemic monomelic neuropathy , an important complication of hemodialysis access procedures which can lead to severe and nonreversible limb dysfunctions (Thermann & Kornhuber, 2011), bleeding related to defect of primary hemostasis (Holden, Harman, Wang, Holland,and Day ,2008); Cardiovascular system complication i. e. hypotension, ventricular hypertrophy, pleural effusion, also uremic pleuritis (Rashid-Farokhi et al, 2012).

Self-care defined as an active participation in own health care, it is about learning what to do to take care of on self and when to decide to ask for help; it is an actions and measures individuals take to improve their health and well being, to prevent and decrease the likelihood of disease, and to restore health after illness or injury (Lacy, 2010 and William, 2012). According to Orem (1998) self care theory is based on the philosophy that "all patients wish to care for themselves" if the patients are allowed to perform their own self-care requisites to the best of their ability, it will recover more quickly and holistically. The theoretical frame-work of Orem's self-care theory was taken as a base for carrying out the current study aiming at assessing self-care practices of patients' on maintenance hemodialysis at one of teaching hospital (King Fahd Unit, Cairo University Hospitals).

2. Significance of the study

The attention being paid globally to chronic kidney disease is attributable to the following factors: the rapid increase in its prevalence, the enormous cost of treatment, an appreciation of its major role in increasing the risk of cardiovascular disease, and the discovery of effective measures to prevent its progression. The estimated prevalence of renal failure in Egypt is 109,7052 of 76, 117, 42122 according to Right Diagnosis Statistics ,(2011), and according to last statistics at 2008 at Egypt ,the number of cases with renal failure up to 300 cases per million citizen (Abdel-Latif,2008). And according to El kaser Elaini Hospital Statistics the number of patients with chronic renal failure is 2717 patients in 2010. The estimated prevalence of patient on dialysis in Egypt is 80,4532 of 76, 117, 42122 and in USA is 310,3822 of 293, 655,4052 (Right Diagnosis Statistics ,2011) and at King Fahad unit the number of patient on hemodialysis is 60 patients at 2010 .

Gouda et al. (2011) pointed out that the worldwide rise in the number of patients with chronic kidney disease (CKD) and consequent end-stage renal disease (ESRD) necessitating renal replacement therapy and attendant cardiovascular disease is threatening to reach epidemic proportions over the next decade, and only a small number of countries have robust economies able to meet the challenges posed. The same authors indicated that in Egypt, one of the developing countries, poverty has emerged as one of the most challenging socio-economic problems, with 22.9% of the total populations within the national poverty line. A change in global approach to CKD from treatment of ESRD to much more aggressive primary and secondary prevention is therefore imperative.

3. Aim of the study

The current study was carried out to assess self-care practices of patients on maintenance hemodialysis at King Fahd unit, Cairo University Hospital

4. Research question

To achieve the purpose of the study the following research question was formulated:
Q- How do patients on maintenance hemodialysis care of themselves?

5. Subjects and Methods:

5.1. Research Design

Descriptive correlational research design was utilized to achieve the aim of this study. A descriptive study is one in which information is collected without changing the environment (i.e., nothing is manipulated). Sometimes these are referred to as “Correlational” or “Observational” studies. The Office of Human Research Protections (OHRP) defined descriptive study as “Any study that is not truly experimental.” In human research, a descriptive study can provide information about the naturally occurring health status, behavior, attitudes or other characteristics of a particular group. Descriptive studies are also conducted to demonstrate associations or relationships between things in the world around (Denise, Polit & Cheryl, 2010).

5.2. Setting

The study was conducted at King Fahd Unit at El kaser El Aini Hospital; Cairo University, Egypt. King Fahd unit is located in the 4th floor at El kaser El Aini University hospital.

5.3. Subjects

All admitted adult male and female patients (56) and these who were accepted to participate in the study were the study sample. The patients' sample was treated medically through either being with arteriovenous fistula or graft.

6. Tools

In order to achieve the purpose of the study; a questionnaire sheet for assessment of self-care practices that followed by patient had been developed by the investigator after extensive review of related literature. The tool included the following four parts; 1-Sociodemographic and medical data sheet (part I): covered six main sections: (1) related to socio-demographic data changing work being on dialysis, and adequacy of monthly income for family;(2) medical data profile such as duration of being on dialysis, presence of co-morbid disease (s), site of arteriovenous shunt, number of dialysis session dialysis/week ;(3) nutrition status i.e. patient's pattern of eating;(4) job status and effect of health condition on job performance, working hours;(5) patient's family obligations;(6) utilization of leisure time, 2- the second part of the sheet was related to Disease specific self-care practices (part II): This part was developed to assess patient's activity of daily living practices e.g. grooming, feeding, bowel, and bladder elimination, bathing, mobility, transfer, using stairs. 3- the third part of the sheet was related to assessment of care practices in rel1ation to disease process: the aim of this part is to assess specific self-care practice related to disease process and carried out by the patient e.g. care of the artiero-venous access, daily body weight, measurement of daily intake and output ,following the prescribed medications.4- the forth part of the questionnaire was related to assessment of uremic symptoms which faced the current patients' sample such as itching, sleep disturbance, loss of appetite, excessive tiredness, pain in bones and joints, poor concentration, loss of muscular strength, shortness of breath and muscle spasm.

6.1. Content Validity

Tool were checked and revised by a panel of five experts medical surgical nursing to test content validity. Modifications were carried out according to panel judgment on clarity of questions and appropriateness of content.

6.2. Pilot study

A pilot study was conducted on 6 patients who were diagnosed with chronic renal failure and fulfilled the inclusion criteria, was done to evaluate the content and test clarity, relevancy, feasibility, objectivity and applicability of the study tool.

The pilot study was also done for the purpose of estimating the time needed for performing the interview for data collection with each subject. The tools require approximately 20 – 25min to be completed.

7. Ethical consideration

An official permission to conduct the study was obtained from the ethical committee of research and Vice Dean for Higher Education and Research- Faculty of Nursing and from hospital director. Each potential patient was fully informed with the purpose of the study. In addition, the investigator emphasized each interviewee that participation in the study is entirely voluntary; anonymity and confidentiality were assured through coding of data. A written consent was obtained from each participant after complete description of the purpose, nature and benefits of the study in order to obtain their acceptance as well as to gain their cooperation. Also for the application of confidentiality the patients were informed that the collected data from all of them will not be used except for the purpose of research.

8. Techniques for data collections

Structured interview was utilized to fill out the study tools.

8.1. Procedure

To precede with the proposed study an official permission was obtained from the hospital authorities of King Fahd Unit at El kaser El Aini Hospital which is affiliated to Cairo – University prior to the initial interview. Once official permission was granted from the postgraduate studies committee and from the head of the selected hospital unit to proceed with the study, the investigator initiated data collection. Potential subjects were informed about the

purpose and the nature of the study and their agreement to participate in the study was obtained by written informed consent. Tools have been completed on time of 20-25 min.

9. Statistical data analysis

Data obtained from the study tools were categorized, tabulated, analyzed and data entry was performed using the SPSS software (statistical package for social sciences version20.0). Descriptive statistics were applied (e.g. mean, standard deviation, frequency and percentage). A significant level value was considered when $p<0.05$.The smaller the P- value obtained, the more significant is the result. The P- value is being the probability of error of the

Table (1): Frequency Distribution of Practices of Personal Hygiene of the Studied Subjects.

variable	Completely dependent		needs help		Completely independent	
	N	%	N	%	N	%
taking shower	6	10.7	11	19.6	39	69.6
care for feet	5	8.9	11	19.6	40	71.4
mouth and teeth cleaning	2	3.6	5	8.9	49	87.5
shaving and hair care	4	7.1	7	12.5	45	80.4

As regards patient's practices of personal hygiene table (1) clarifies that more than 2/3 of (69.6%, 71.4%, 87.5% & 80.5%) respectively of the subjects are completely independent for practicing hygienic care i.e. taking shower, care of feet, moth care or shaving and hair care.

In relation to Transfer and being out home , the results reveal that about 2/3of the subjects (62.5%) move by themselves ,while (10.7%) use wheelchair, and other person for help; where more than half (53.6 %) used to go for dialysis session alone. while (30.4%) always used to go out with help of others and (16.1%) sometime with help. Regarding being out door for buying home stuff 50 % did it by themselves, while 26.8% always with help of others and 23.3% sometimes accompanying other persons.

As regards going out home to have fun (41.1%) used to go alone, (32.1%) always with companion of others while 26.8% sometimes with others respectively. Results also, indicated that for going out of home to visit relatives (37.5%) used to practices alone; (32.1%) sometimes accompany others; and (32.1%) always accompany family member.

Table (2) Frequency distribution of self-care practice for arterio-venous shunt

Variable	never		rarely		some days		most of the days		all the days	
	N	%	N	%	N	%	N	%	N	%
1- sleep on the arm /side of the shunt	38	67.9	8	14.3	3	5.4	6	10.7	1	1.8
2- wear jewelry or tight slaves on the arm of the shunt	39	69.6	12	21.4	1	1.8	3	5.4	1	1.8
3- Measure BP or take blood sample from the arm of the shunt.	54	96.4	0	0	0	0	0	0	2	3.6
4- Carry heavy things by the arm of the shunt.	39	69.6	14	25.0	1	1.8	1	1.8	1	1.8

Regarding self-care practice for arterio-venous shunt table (2) revealed that 2/3of the subjects (67.9%) never slept on the side where the shunt is present. (69.6%) of the subjects answered they never wear jewelry or tight slaves in the arm where the shunt is present. As regards measuring blood pressure or taking blood sample from the arm where the shunt is present; (96.4%) of the subjects responded that they never experienced this practice. In relation to carrying out anything by the arm with the shunt; majority of subjects answered they never

have this practice with percentage of (69.6%).

Table (3) frequency distribution of practiced care by patient for arterio-venouse shunt.

Variable	never		rarely		some days		most of the days		all the days	
	N	%	N	%	N	%	N	%	N	%
1- Palpate and check thrill on the site of the shunt.	0	0	2	3.6	0	0	8	14.3	46	82.1
2- Check for pulsation over shunt.	0	0	0	0	0	0	6	10.7	50	89.3
3- Check for hardness or pain in the arm with the shunt.	4	7.1	8	14.3	4	7.1	10	17.9	30	53.6
4- Check for redness or leakage.	2	3.6	15	26.8	3	5.4	7	12.5	29	51.8
5- Check for bleeding from needle puncture site.	9	16.1	9	16.1	6	10.7	5	8.9	27	48.2
6- Check for numbness over the arm of shunt.	6	10.7	18	32.1	8	14.3	10	17.9	14	25.0
7- Use hot compresses for cleaning site of shunt site.	0	0	6	10.7	19	33.9	19	33.9	12	21.4
8- Apply ointment over the shunt.	0	0	3	5.4	20	35.7	18	32.1	15	26.8
9- keep the site of shunt dry and clean	0	0	0	0	2	3.6	3	5.4	51	91.1

Table (3) also shows that majority of the subjects (82.1%), check thrill over shunt through all days, (3.6%) were doing it rarely. For check for pulsation over the shunt site majority of the subjects (89.3 %) do it all the days, while only (10.7%) practiced most of days. As well as, more than half of the subjects (53.6%) check for pain or hardness in the arm with the shunt all the days, and only (7.1%) never did this practice. As regards checking for redness, swelling, or leaking from the shunt site more than half of the subjects (51.8 %) reported that they practice all the days, and only (3.6%) never did this practice. In addition, 48.2 % do checking for bleeding from needle puncture site all the days.

As regards patients' practices of checking of body weight the study results shown that subjects around 2/3 practiced it most of days (58.9%); only (3.6%) never did it, and 35.7% used to check their body weight most of days before they start each hemodialysis session comparing to (37.5%) who they check their weight after they done with each session most of days. As regards being interested of how much body weight increased, 46.4% reported that they practice that most of days.

Studied subjects' practices for prescribed medication:

Results of study showed that the studied subjects were following the prescribed medication on regular basis with percentage of (50%) all of the days, (18.6%) for most of days; and (1.8 %) never practiced regularly, almost half of the sample (48.2 %) taking medication on correct time, and, they do that all the days; while (30.4 %) do it most of days; while only (8.9%) do that rarely.In relation to taking drug e.g. analgesics without order (46.4%) of the sample do that most of days e.g. aspirin,(37.5 %) do it all the days ,while only 1.8 % never taking any drug without doctor's order.

Part IV: - Uremic Symptom Scale of the Studied Subjects.

Table (4):- frequency distribution of the studied subjects according to uremic symptom scales.

Variable	never		rarely		some days		most of the days		all the days	
	N	%	N	%	N	%	N	%	N	%
1- Itching	4	7.1	9	16.1	21	37.5	13	23.2	9	16.1
2- Sleep disturbances	4	7.1	7	12.5	19	33.9	19	33.9	7	12.5
3- Loss of appetite	3	5.4	6	10.7	18	32.1	25	44.6	4	7.1
4- Fatigue	1	1.8	3	5.4	20	35.7	23	41.1	9	16.1
5- Bones and joints pain	4	7.1	7	12.5	8	14.3	20	35.7	17	30.4
6- Alteration in memory/ being confused	6	10.7	10	17.9	16	28.6	21	37.5	3	5.4
7- Muscle cramps	5	8.9	15	26.8	18	32.1	13	23.2	5	8.9
8- Chest pain	24	42.9	13	23.2	8	14.3	7	12.5	4	7.1
9- Muscle weakness	5	8.9	7	12.5	19	33.9	18	32.1	7	12.5

The results showed that (37.5%); and (23.2%) respectively of the studied subjects experiencing some troubles i.e. (itching) some of days and most of days; while (16.1 %) was given to all the days and rarely. The table also shows that (33.9 %) experiencing sleep disturbance most of days; while (7.1%) didn't have it, compared to 12.5 % who facing it all the day .In addition, most of the studied subjects had loss of appetite most of days with percentage of (44.6%), (41.1%) and (35.7%) of studied subjects were complained of fatigue most of days, and some of days respectively.

As regard to pain in bones and joints more than 1/3 (35.7 %) of the studied subjects had this problem most of the days; also more than 1/3 (37.5%) decrease in memory most of days .About muscular weakness 1/3 (33.9%) of the studied subjects have it some of days. Also 1/3 (32.1%) of the subjects reported that they experienced muscle cramps some of days; and (8.9%) for all of the days. In relation to difficulty of breathing as part of troubles related to uremic symptoms about 1/3 (32.1%) of the subjects experienced this symptom rarely. About chest pain more than 1/3 (42.9%) of the subjects never complain of it; while (7.1%) have it all the days. Regarding feeling dizzy; only 1/3 (30.4%) reported that they experienced this problem /trouble some days. As regards experiencing gastrointestinal troubles , around 1/4 of the total sample has troubles in the form of nausea ,difficulty in digestion some of days ,while more than 1/3 had hyperacidity (33.9%) ,and difficulty of chewing minority of the subjects reported this symptom. Moreover; (39.3%) of the subjects were complaining of feet aches some of days; while 10.7% for all the days.

Table (5): t-test comparing total scores of studied variables according to gender. (n=56)

Variables	Male	Female	t	P
	M± SD	M± SD		
Nutritional status	1.9259 ± 2.40074	1.4138± 1.68008	4.047	.049*
Job duties	6.5000 ± 2.32832	6.3846±2.29269	.012	.915
Family obligations	1.0370 ± 1.12597	1.7931± 1.97085	10.797	.002*
Utilization of leisure time	4.7407 ± 3.14511	5.0345± 3.14510	.182	.672
Personal hygiene	3.2222 ± 1.33973	2.7931± .94034	3.253	.077
bowel	4.0741 ± 1.14105	4.5517±1.21262	2.909	.094
bladder	5.0370 ± 1.53125	4.6897± 1.56076	.149	.701
grooming	5.4444 ± 1.21950	5.4138± .98261	.245	.623
Toilet use	9.8148 ± 3.12603	8.3793± 2.59689	1.585	.213
Transfer	5.0000 ± 1.49358	4.3793± 1.20753	.909	.345
mobility	5.0741 ± 1.56711	4.7931± 1.31961	.994	.323
Dressing	32.2400 ±5.38733	30.7931± 4.74627	.065	.800
Stairs	11.5926 ±3.26119	12.7241± 3.02249	.394	.533
Tot daily care	12.5185 ±5.35918	11.1034± 5.47295	.457	.502
Tot self care	45.8889±11.02910	43.4138± 8.34744	1.035	.314
Tot shunt care	17.40690±91.6667	100.3103±15.29963	.003	.958
Uremic symptoms	34.1481±10.26459	40.6429± 10.93487	.029	.865

* Significant ≤ 0.05

Table (5) showed statistical significant difference between total gender scores and patients` total nutritional status, while highly statistical significant difference was evident in relation to family obligations (t=4.047, p=.049) (t= 10.797 ,p = .002) The table clarified that male commitment for nutrition was more than female and female was more than male regarding family obligations . Whereas; no significant relation was found between gender and job duties, utilization of leisure time, grooming, mobility, daily self-care, care of shunt and uremic symptoms.

Table (6): Relationship of the marital status of study subjects and different studied variables. (n=56)

Variables	Single	married	widow	divorced	F	P
	M± SD	M± SD	M± SD	M± SD		
Nutritional status	2.3684±2.45426	1.3667±1.86591	1.0000±.81650	1.0000±1.73205	1.209	.316
Job duties	6.3077±1.88788	6.2778±2.44482	7.0000 ±.	11.0000 ±	1.460	.246
Family obligations	1.0526 ± 1.26814	1.5667±1.71572	2.5000 ± 2.64575	1.0000±1.73205	1.030	.387
Utilization of leisure time	4.5263 ± 2.85518	3.30604 ± 5.0333	6.2500 ± 2.36291	4.0000±4.58258	.428	.734
Personal hygiene	3.6842 ± 1.37649	2.6667 ± .92227	2.5000 ± .57735	2.6667 ± .57735	3.889	.014*
Bowel control	4.3158 ±1.20428	4.3333 ± 1.2685	3.7500 ± .50000	5.0000±1.00000	.618	.607
bladder control	4.6842 ± 1.73374	5.0333 ± 1.44993	5.0000 ±1.41421	4.0000 ± 1.73205	.516	.673
grooming	5.1053 ± 1.41007	5.6333 ± .85029	5.0000 ± 1.15470	6.0000 ± .00000	1.415	.249
Toilet use	9.4737 ± 3.32279	8.8000 ± 2.96415	8.7500 ± 1.50000	9.6667 ±1.52753	.252	.860
Transfer	4.7895 ± 1.68585	4.6000 ± 1.32873	4.5000 ± .57735	5.0000 ± .00000	.144	.933
mobility	4.9474±1.54466	4.9000±1.44676	4.2500±1.25831	6.0000 ± .00000	.850	.473
Dressing	31.3333 ±6.29659	31.8276±4.38397	30.0000±6.05530	30.6667±3.05505	.182	.908
Using stairs	12.0526±3.95072	12.4000±2.52709	11.5000±3.87298	11.6667±4.16333	.140	.936
Daily care	12.2632 ±4.60485	11.7333±5.71708	11.5000±4.65475	9.6667±10.01665	.198	.897
Self care	45.1053±12.26963	44.4667±9.00089	41.5000±5.06623	47.0000±1.00000	.206	.892
Care of shunt	93.2105±16.53474	96.6333 ± 17.97409	101.2500±12.97112	103.0000±11.53256	.479	.698
Uremic symptoms	34.3684±10.43610	38.0690 ± 11.37959	43.0000 ± 11.40175	43.6667 ± 8.38650	1.197	.320

* Significant ≤ 0.05

Table (6) showed a highly statistical significant difference between patients` marital status and patients' total personal hygiene scores between groups at (f=3.889) and (p=.014). However, no significant relation was found between patients' educational level and nutritional status, job duties, family obligations, grooming, transfer, stairs, daily care, self-care, care of the shunt and uremic symptoms.

Table (7) Relationship of the financial status of study subjects and different statistical variables. (n=56)

Variables	Always not enough	Sometimes not enough	Enough for living	F	P
	M± SD	M± SD	M± SD		
Nutritional status	1.0000± 1.00000	1.4375± 1.50416	2.2000± 2.66145	1.777	.179
Job duties	6.5000± 2.07364	6.7692± 2.16617	6.1429 ± 2.56776	.244	.785
Family obligations	1.7333± 1.53375	1.9375± 2.01556	.9200 ± 1.35154	2.310	.109
Utilization of leisure time	5.4667± 3.04412	4.4375± 3.03246	4.8400± 3.28735	.419	.660
Personal hygiene	2.4000 ± .98561	3.5625± 1.03078	3.0000± 1.19024	4.364	.018*
Bowel control	3.9333± 1.16292	4.8750± .95743	4.2000± 1.25831	2.823	.068
Bladder control	4.7333± 1.79151	4.6250± 1.50000	5.0800± 1.44106	.481	.621
grooming	5.0667± 1.53375	5.8125± .54391	5.4000± 1.00000	1.876	.163
Toilet use	8.1333± 2.97289	11.4375± 1.15289	8.1200± 2.90574	9.596	.000*
Transfer	4.2000± 1.42428	5.6875± .60208	4.3200± 1.40594	7.478	.001*
mobility	4.4000± 1.54919	5.6875± .79320	4.7600± 1.53514	3.756	.030*
Dressing	30.7333± 6.72380	32.0000± 3.83592	31.5833±4.68036	.240	.787
Using stairs	10.6667± 3.67747	12.7500± 3.29646	12.7200±2.50865	2.466	.095
Daily care	10.8000± 5.53173	13.3125± 3.94493	11.4000±6.11010	.946	.395
Self care	40.6667±11.31160	50.3125± 4.22246	43.3200±9.88568	4.784	.012*
Care of shunt	99.4000±17.70714	95.0625± 18.63498	94.8800±15.35773	.378	.687
Uremic symptoms	41.6667±11.24193	36.1250± 11.53473	35.7083±10.24686	1.547	.223

* Significant ≤ 0.05

Table (7) showed a highly statistical significant difference between patients` financial status and patients' total personal hygiene, toilet use ,transfer ,mobility and self-care scores between groups at (F=4.364, 9.596 , 7.478 , 3.756 , 4.784) and (p=.018, .000 , .001 , .030 , .012) respectively. No significant relation between total financial status and nutritional status, job duties, family obligations, grooming, stairs, daily care, practice care of the shunt and uremic symptoms were evident.

Table (8): Relationship of the nutritional status of study subjects and different statistical variables. (n=56)

	Pearson Correlation	sig
Job duties	-.095	.600
Family obligations	.076	.579
Utilization of leisure time	-.241	.074
Personal hygiene	.274*	.041
Bowel control	.283*	.035
Bladder control	.248	.065
grooming	.163	.230
Toilet use	.258	.055
Transfer	.179	.186
mobility	.158	.246
Dressing	.008	.955
Using stairs	.356**	.007
Daily care	.243	.071
Self care	.260	.053
Care of shunt	-.015	.913
Uremic symptoms	-.175	.202

*. Correlation is significant at the 0.05 level (2-tailed).

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

Table (8) showed a positive statistical relationship between patients` total nutritional status and patients' total personal hygiene,bowel,stairs and self-care scores at (Sig.= .041, .035, .007, .053). Also strong positive relationship between patients' total nutritional status and family obligations, grooming, toilet use, transfer, mobility, dressing and daily care. And there was negative correlation between patients` total nutritional status and patients' total, job duties, leisure time utilization, shunt care and uremic symptoms.

10. Discussion:

Illness brings about changes in both the involved individual and the family. The changes vary depending on

the nature , severity and duration of the illness , attitudes associated with the illness by the client and others ,the financial demands ,the life style changes incurred ,adjustments to usual rdes, and so on(Berman &Snyder,2012).

The global rise in the number of patients with chronic kidney disease (CKD) who would ultimately require renal replacement therapy (RRT) is increasing at an alarming rate. The number of patients with end stage renal disease (ESRD) has increased by about 9% per year in the United States of America and by 4% per year in Japan. In developing countries, the number varies from less than 100 per million populations in sub-Saharan Africa and India to about 400 per million populations in Latin America and more than 600 per million populations in Saudi Arabia. The increase in growth of the population with ESRD is partially related to the under recognition of earlier stages of CKD and the risk factors for its development (Nalado, Abdu, Muhammad, Abdu, Sakajiki, Adamu, 2012).

Results of the current study revealed that more than one third of the studied subjects' age ranged between (20-35 years) with a mean age (40.83±14.17) years; and the majority of them were female. This study contradicted to Villar, Remontet, Labeeuw& Ecochard (2007) findings who found that 64.7 yr, and 50% of their study sample were older than 68.1 yr. Gender ratio (male/female) was 1.7., and the mean ages were 42.9, 46.7, and 47.2 years and Heidarzadeh Atashpeikar and Jalilazar ,(2010) reported that most of the patients (50.5%) were 39-62 years old; the mean age (SD) was 50.2 (15.4); 51% were male, 77.4% were married, 58% were un-employed, 54.8% were illiterate, 59.3% of patients had received hemodialysis for 1-5 years

As regard study subjects educational level, almost half of the sample has secondary school education. Ivey and Lane (2011) found that approximately 69.8% had a high school diploma and higher education 95.2%. This result might indicate that educational level may have positive impact on patient's compliance and taking care of themselves. (Atashpeikar et al. (2011) said that patients who have higher educational level can help in better recognition of their self-care needs.

According to Orem's general theory of nursing (Orem, 2001) self-care refers to those activities an individual performs independently throughout life to promote and maintain personal well-being. Berman and Snyder (2012) mentioned that ill individuals are vulnerable to loss of autonomy, i.e. the state of being independent and self-directed without outside control. The current study results shown that more than two third of the subjects have the ability to move freely. These results might be interpreted as those patients define their health by the effect of their diseased condition on their body functioning as it depends largely on their mobility status. In this regards, Berman and Snyder (2012) commented that the ability to move freely, easily, rhythmically and purposefully in the environment is an essential part of living and this means mobility is vital to independence.

In addition, and regarding the personal and oral hygiene, the study findings revealed that the majority was independent in their personal hygiene; more than three quarters of the studied subjects practiced mouth care independently. Cerver, Bagon, Soriano and Roda (2008) pointed out that patients with renal failure require special considerations in relation to dental treatment, not only because of the conditions inherent to the disease and its multiple oral manifestations, but also because of the side effects and characteristics of the treatments they receive. Cerver et. al. (2008) study subjects (90%) suffer from oral signs and symptoms health problems which affect both the bone and soft tissue structures. Cerver et. al. further commented that bad odor (secondary to uremia), and metallic taste resulting from the increased concentration of urea in saliva, and its posterior transformation into ammonium.

Parsons (1979) in Berman and Snyder (2012) described four aspects of the sick role related to patient's rights and obligations, one these four is the client is excused from certain social roles and tasks, e.g. an ill parent would not be expected to prepare meals for the family .Berman and Snyder further explained that family interactions may change so that clients are no longer involved in making family decisions. These indicate that nurses need to provide the client with sufficient information to help in participating in making decisions.

Regarding the care practiced for arterio-venous shunt among study subjects, majority of the subjects had good shunt care as more than three- quarters of the subjects used to check the thrill over shunt site all the days; as well as check for pulsation. In addition, the findings presented that more than half of subjects check for pain or hardness in the arm with the shunt; checking for redness, swelling, or leaking from the shunt site all the days, and more than one third checking for bleeding from needle puncture site all the days. About use of hot compress over the shunt more than two thirds of the studied subjects were most of days and some of days, while one fifths for all of days. In relation to keeping the site of shunt clean and dry the majority of the studied subjects answered all the days. Feddersen and Roger (2012) mentioned that dialysis access placement and maintenance in the hemodialysis population is paramount to the short -and long -term survival of these patients as complications of vascular access contribute a large overall cost burden, with access –related complications associated with 15 -24% of hospital admissions in ESRD patients undergoing hemodialysis. The AVF remains the vascular access of choice in hemodialysis patients.these findings indicate that those patients should be motivated and encouraged for maintaing and keeping provided self-care practices for shunt size , thus to keep it in good working position and preventing any infection.

The results of the current study showed that half of the subjects follow the prescribed medication while, about two thirds taking exact dose of medication. Also, half of the subjects taking medication at correct time whereas; about half of them avoid taking medication without physician order. Ricka, Vanrenterghem and Evers (2008) reported that the results confirm that non-compliance with medication regimens and continues to be a constant problem for hemodialysis patients. Demographic, medical history and treatment characteristics did not adequately explain this behavior. In this regard Schmid, Hartmann, Schiffl (2009) also, mentioned that successful RRT of ESRD patients relies on patient adherence to various aspects of the therapy, such as attendance to the number of sessions prescribed to achieve the optimal dose of RRT, restriction of fluid intake, following dietary guidelines, and adherence to complex medical regimens . There is solid evidence that adherence of ESRD patients' correlates with morbidity and mortality. Unfortunately, poor adherence (compliance) with prescribed medication is a widely recognized problem in daily practice, but few studies have been devoted to understanding patient nonadherence to medication .Psychological state, patient motivation, empathy and trust are essential key factors to optimize patient adherence.

Regarding fluid /day the current study shown that more than three quarters of the studied subjects drinking more than the allowed amount of fluid/ day, while minority drink the allowed amount. Chilcot, Wellsted and Farrington (2010) studied the demographic and clinical characteristics between fluid-adherent and nonadherent patients. They found a significant association between gender and fluid adherence. Females had greater odds of nonadherence [unadjusted odds ratio (OR) =0.34; 95% confidence interval (95% CI): 0.13–0.87]. Nonadherent patients were significantly younger, had greater serum urea, and had more years on dialysis. This might be due to patients' age in and the associated societal and economic circumstances, as the majority of the current studied sample is (20-35years). Also, Kugler, Maeding and Russell (2011) pointed out that adherence to diet and fluid is paramount for treatment success. Failure to adhere may lead to increased complication rates and associated costs, and decreased survival. They found that there is a large number of hemodialysis patients in both countries (U.S.A. and Germany) have difficulties maintaining their fluid restriction.

Regarding itching, more than one third of studied subjects experience it some of days and most of days.(Keithi-Reddy, Patel, Armstrong & Singh, 2007) "Uremic pruritus" Itching in patients with advanced kidney failure or among patients on HD. The prevalence of uremic itching as reported in the literature ranges between 50 and 90%. (Narita, et al., 2006) the same authors pointed out that "Etiology and prognostic significance of severe uremic pruritus in chronic hemodialysis patients. Pruritus has been well recognized as a common and sometimes unbearable complication in patients with chronic renal failure. There is no confirmed evidence that uremic pruritus can be caused by a single factor, whereas many metabolic factors have been implicated in the pathogenesis of itching. For example, hypercalcemia, hyperphosphatemia, secondary hyperparathyroidism, and hypermagnesemia. It has been reported that higher dialysis efficacy with a good nutritional state reduces the prevalence and degree of pruritus in hemodialyzed patients. In addition to affecting the quality of life and sleep, uremic pruritus has been reported to be a marker of poor outcome in patients on long-term hemodialysis. Uremic pruritus remains a frequent problem in patients with end-stage renal disease, mainly because of the lack of knowledge of the underlying pathophysiological mechanisms.

Alterations in mineral metabolism in turn lead to renal osteodystrophy, which manifests in the form of skeletal defects, fractures, pain, and joint and periarticular calcifications. Dialysis arthropathy is a complication of long term hemodialysis.It is predominantly bilateral, affecting both large and small joints, and is strongly associated with recurrent carpal tunnel syndrome (Moe et al. 2006). As experiencing pain in bones and joints more than more than one third of the studied subjects had this problem most of the days. About muscular weakness also more than one third of the studied subjects have it some of days. Also almost one third of the subjects had reported muscle cramps some of days; and less than one tenth for all of the days. Moreover more than one third of the subjects were complaining of feet aches some of days; while one tenth for all the days.

Regarding sleep pattern and being on hemodialysis treatment, more than one third of the study subjects have it most of days. Narita, Iguchi, Omori and Gejyo (2008) mentioned that Involvement of the central nervous system is expressed in the form of restlessness, apathy and insomnia. Their findings shown that 15%-49% of patients with predialysis chronic renal failure, and 50%-90% of those on hemodialysis more than 70% complained of sleep disturbance due to itching, whereas the majority of patients with a VAS score of less than 7.0 had no sleep disturbance. It was clearly indicated that an increased intensity of pruritus is associated with frequency of skin scratching episodes and sleep disturbance, leading to a decline in quality of life. Also (Narita, et al, 2006) more than 70% of them complained of sleep disturbance.

In relation to difficulty of breathing about one third of the subjects reported that they had been rarely experienced this symptom. About chest pain more than one third of the subjects never complain of it while less than one tenth has it all the days. This study findings are supported by Agrawal ,Khakurel, Hada ,Shrestha &Baral (2012) reporte that acute intradialytic complications in End Stage Renal Disease on Maintenance Hemodialysis " who reported that these patients also suffer dyspnea severe cardiac arrhythmias, symptomatic hypoxia and minor complications like chest pain associated with hypotensive episodes and backache.

As regards experiencing gastrointestinal troubles , around one quarter of the total sample had troubles in the form of nausea ,difficulty in digestion some of days ,while more than one third had hyperacidity and difficulty of chewing; minority of the subjects reported this symptom. Kabahizi (2005) found that the commonly observed GIT related complications during hemodialysis were nausea & vomiting, abdominal pain and (54.92%) of the patients complained of vomiting during or immediately after dialysis session ended. Nadeem et al. (2013) pointed out that the proper work-up of the patients prior to institution of maintenance hemodialysis and appropriate premedicine as well may prevent or decrease the frequency of such complications, which require another study for pathogenesis of these complications. Furthermore, the improvement in socioeconomical condition may lessen the complications especially catheter related problems. Also (Agrawal, et al 2012) reported that GIT complications like nausea and vomiting are also commonly seen during hemodialysis the incidence of this complication was 1.2%. Most of the times they arise as symptoms of hypotension. In another study reported the incidence of nausea and vomiting to be as high as 40%.

For further investigation of how patients on hemodialysis provide care for themselves; relationship between study variables had been investigated and presented as the following. Families as well as patients with chronic illness were at risk of high levels of stress (Ayoub, 2012). Family members experience stress for long periods of time and need to constantly adapt as the disease progresses. Family and marital relationships that have evolved prior to the patient becoming ill may be altered by the presence and attached responsibility to caring for a person on dialysis. It is known that the family's adaption is influenced by factors such as the quality of family relationships, cultural values and beliefs. Social support is associated with improved psychological adjustment of dialysis patients and depressed dialysis patients reported less social contact with others. The current study shows a highly statistical significant difference between presence of support system and patients` total grooming, transfer and mobility, self-care and uremic symptoms. Whereas; no significant difference was found between presence of support system and patients` total nutrition status, job duties, family obligations, utilization of leisure time, dressing, stairs, daily care and practice care of the shunt.

Mahdavi-Mazdeh, Nozari, Hatmi, Zamyadi and Mahdavi (2009) reported that family structure reflect a social change in family types; 38% of females versus 19.8% of males are single due to death of spouse, divorce or no marriage. Lack of family support may increase life pressures in women's lives. Women are more vulnerable to psychosocial disorders with chronic disease than men and we can conclude, because of loneliness and life pressure in a hemodialysis woman, psychological problems such as depression and anxiety will increase in this group and this can affect on ESRD therapy and outcome. Marital status has a great impact on patients' therapeutic goals achievements. The current study showed a highly statistical significant difference between patients` marital status and patients' total personal hygiene scores.

11. Conclusion

The study subjects were 56 adult patients, their age ranged from 18-65years old. The highest percentage were between (20-35 years) (39.3%) with a mean age (40.83±14.17) years. Also more than half of the studied subjects were females representing (51.8%). Fifty three point six were married and (33.9%) were single, 2/3 of the studied subjects (66.1%) need help and 25% of them need help from of sister /brother/father or mother) and (21.4%) helped by husband/wife, highest percentage of the duration of being treated with hemodialysis (37.5%) was between 3->6 years, more than half of the sample (64.3%) having co-morbid diseases and other health problems such as hypertension, diabetes and systemic lupus. Regarding the site of arterial venous shunt, (73.2%) have the shunt in left arm, 92.9% are scheduled for three times a week, and (7.1%) twice a week for hemodialysis sessions,

The result shows that 50% of the studied subjects were never eat in between main meals while 16.1% had it all days till they feel completely full. Also, highest percent of the sample (28.6%) used to eat snacks in some days. Regarding type of food (28.6%) rarely eat canned food

The result reveals that the marital relationship of the married one of the studied sample was affected with percentage of (46.7%), as well the ability to solve problems and taking decisions while more than one third (33.9%) not affected by the disease process i.e. by treatment , on the other hand ; 17.9% rarely affected. Also, (69.6%, 71.4%,87.5% & 80.5%) respectively of studied subjects are completely independent for practicing hygienic care i.e. taking shower ,care of feet, moth care or shaving and hair care.As regards food preparation (51.8%) are completely dependent, while 26.8% need help, minority is independent (21.4%).

The results reveal that (85.7%) of the subjects were continent and defecate normally i.e. without using any medication or other supports where urine elimination (66.1 %) were completely controlled, (3.6%) couldn't control their urine sometimes however (30.4%) not urinate at all. And about 2/3of the subjects (62.5%) move by themselves ,while (10.7%) use wheelchair, and other person for help; where more than half (53.6 %) used to go for dialysis session alone, while (30.4%) always , used to go out with help of others.

As a conclusion for practicing self-care activities; (91.1%) of the total subjects practice and achieve their

activities independently.

The result reveals that 2/3of the subjects (67.9%) never sleep on the side where the shunt is present, only (1.8 %) reported that they used to sleep on the side of the shunt all the days. (69.6%) of the subjects answered they never wear jewelry or tight slaves in the arm where the shunt is,. As regards measuring blood pressure or taking blood sample from the arm where the shunt is present (96.4%) answered it has been have this practice never. In relation to never carrying out anything by the arm with the shunt; majority of the subjects were answered they never practiced this with percentage of (69.6%).

The majority of the subjects (82.1%), check thrill over shunt all the days. For check for pulsation over the shunt site majority of the subjects (89.3 %) do it all the days. As regards checking for redness, swelling, or leaking from the shunt site more than half of the subjects (51.8 %) reported that they practice all the days. In addition, 48.2 % do checking for bleeding from needle puncture site all the days.

Regarding use of hot compresses over the shunt more than 1/3 of the studied subjects (33.9%) were do most of the days and some of days, while use of ointment over shunt more than 1/3 of the studied subjects (35.7 %) were answered some of days. As regard to keep the site of shunt clean and dry almost all the studied subjects (91.1%) answered they practice all the days. Almost all of the subjects provide care for shunt site most of the days.

For daily body weight practices as reported by study subjects around 2/3 practiced it most of days (58.9%), and 35.7% used to check their weight most of days before they start each hemodialysis session comparing to (37.5%) who they check their weight after they done with each session most of days. As regards being interested of how much body weight increased, 46.4% reported that they practice that most of days

The studied subjects were following the prescribed medication on regular basis with percentage of (50%) all of the days. In relation to avoid taking drug without order (46.4%) of the sample do that most of days e.g. aspirin,(37.5 %) do it all the days .

As regard the amount of fluid intake per day, the subjects drinking more than the allowed amount of fluid/ day with the percentages of (94.6 %); while (3.6%) drink the allowed amount

The result reveals that only (39.3%) of the sample measure their urine output and practice that all the days, while , (37.5%) do this practice some days ,minority (5.4%) practices most of days , while (17.9%) never practice this activity .

The results showed that (37.5%); and (23.2%) respectively of the studied subjects experiencing some troubles i.e. (itching) some of days and most of days, and (33.9 %) experiencing sleep disturbance most of days. In addition, most of the studied subjects had loss of appetite most of days with percentage of (44.6%), (41.1%) and (35.7%) of studied subjects were complained of fatigue most of days, and some of days respectively.

As regard to pain in bones and joints more than 1/3 (35.7 %) of the studied subjects had this problem most of the days; also more than 1/3 (37.5%) decrease in memory most of days .About muscular weakness 1/3 (33.9%) of the studied subjects have it some of days. Also 1/3 (32.1%) of the subjects reported that they experienced muscle cramps some of days; and (8.9%) for all of the days.

In relation to difficulty of breathing as part of troubles related to uremic symptoms about 1/3 (32.1%) of the subjects experienced this symptom rarely. About chest pain more than 1/3 (42.9%) of the subjects never complain of it; while (7.1%) have it all the days. Regarding feeling dizzy; only 1/3 (30.4%) reported that they experienced this problem /trouble some days.

As regards experiencing gastrointestinal troubles , around 1/4 of the total sample has troubles in the form of nausea ,difficulty in digestion some of days ,while more than 1/3 had hyperacidity (33.9%) ,and difficulty of chewing minority of the subjects reported this symptom. Moreover; (39.3%) of the subjects were complaining of feet aches some of days; while 10.7% for all the days.

There was statistical significant difference between total gender scores and patients` total nutritional status, while highly statistical significant difference was evident in relation to family obligations (t=4.047, p=.049) (t= 10.797 ,p = .002) clarified that male commitment for nutrition was more than female and female was more than male regarding family obligations in whereas .

Also, a highly statistical significant difference between presence of support system scores and patients` total grooming, transfer and mobility ,self-care and uremic symptoms as (t=18.029, 6.622 , 18.987 , 7.872 , 3.945) and ( p=.000,.013 , .000 ,.007and.052) .While a highly statistical significant difference between patients` marital status and patients' total personal hygiene scores between groups at (f=3.889) and (p=.014).

Results revealed a highly statistical significant difference between patients` financial status and patients' total personal hygiene, toilet use ,transfer ,mobility and self-care scores between groups at (F=4.364, 9.596 , 7.478 , 3.756 , 4.784) and (p=.018, .000 , .001 , .030 , .012). while a highly statistical significant difference between patients` working status and patients' total personal hygiene, toilet use ,transfer ,mobility and self-care scores between groups at (f=5.457, 5.221, 4.870, 2.400, 3.505) and (p=.000, .001, .001, .050, .009),

Result also, showed a positive statistical relationship between patients` total nutritional status and patients' total personal hygiene, bowel, stairs and self-care scores at (Sig.= .041, .035, .007, .053). Also strong

positive relationship between patients' total nutritional status and family obligations, grooming, toilet use, transfer, mobility, dressing and daily care. Compared to a positive correlation between patients` total family obligations and patients' total daily care, care of shunt and uremic symptoms scores at (Sig.= .047, .038, .012). While, significant negative correlation between patients` total family obligations and patients' total personal hygiene scores at (Sig. = .040).

Result showed positive correlation between patients` total daily care and patients' total job duties, family obligations, utilization of leisure time, dressing and care of shunt scores at (Sig. = .036, .047, .000, .011, .008).While positive correlation between patients` total shunt care and patients' total family obligations, utilization of leisure time, dressing ,daily care and uremic symptoms scores at (Sig. = .038, .003, .000, .010, .008 , .000). While, significant negative correlation between patients` total personal hygiene, transfer, mobility and practicing self-care activities scores at (Sig. = .003, .043, .031, .042). Also positive strong correlation between patients' total shunt care And job duties.

12. Recommendations

Based on the previous findings of the present study, the following recommendations are suggested:

12.1. For patient:

-A simple manual of guidelines of care for patients undergoing hemodialysis should be available in all units to be provided to newly admitted patients.

-Educational program should be ongoing for patients with ESRD initiated during the predialysis stage and continued after maintenance dialysis with their caregivers to enhance their knowledge and skills about the illness and its treatment, complications and ways to alleviate it that consequently improve their self-care practices.

12.2. Administrative:

Develop and coordinate multidisciplinary team approach in the hemodialysis unit that include the primary nurses, renal physicians, social workers, dietitians, psychotherapists and physiotherapists to assist patients in maintaining near normal life style at the highest possible level.

Set up a counseling room in the HD units provided with needed resources to enhance self-care practice for HD patients with appropriate referral system.

Develop a nursing manual of standard care for ESRD patients and be available in all dialysis units.

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