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ASSESSMENT OF SELF CARE ABILITY LEVEL AMONG PATIENTS UNDERGOING HEMODIALYSIS IN GHURKI TRUST TEACHING HOSPITAL, LAHORE

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ABSTRACT

Background: *Chronic Kidney Disease (CKD) is a global health concern with a rising prevalence, impacting millions of individuals worldwide. As CKD progresses to end stage renal disease (ESRD), one of the most common and life-sustaining treatment modalities is hemodialysis (HD).*

Objectives: *To assess the self-care ability level among patients undergoing hemodialysis in Ghurki Trust Teaching Hospital, Lahore*

Methods: *Descriptive cross-sectional study design was Ghurki Trust Teaching Hospital Lahore. The data were calculated from the patients undergoing hemodialysis. The participants were selected on the base of inclusion and exclusion criteria. Data were analyzed by using statistical chi square test with p less than 0.05.*

Results: *A majority 54.7% were male, while the majorities 70.9% were married. Notably, the largest proportion 35% fell within the 26-30 years age. In terms of qualification, a majority 57.3% fell into the intermediate category. Furthermore, a significant majority 57.3% had undergone hemodialysis treatment for over a year.*

Conclusion: *The predominant type of hemodialysis access was AV fistula 49.6%, and most participants 51.3% resided in rural areas. Financially, the majority (71.8%) fell within the average range. Additionally, the study highlights the predominance of participants with intermediate qualifications, prolonged hemodialysis duration, AV fistula access, rural residency, and average financial status among the sample population.*

Keywords: *Self-Care Ability, Patients, Hemodialysis, Ghurki Trust Teaching Hospital*

INTRODUCTION

Chronic Kidney Disease (CKD) is a global health issue with increasing prevalence, affecting millions. As CKD advances to end-stage renal disease (ESRD), hemodialysis (HD) becomes a common life-sustaining treatment. CKD is characterized by persistent urine abnormalities, structural issues, or impaired renal function indicating a loss of functional nephrons (1). Chronic Kidney Disease (CKD), a growing global health issue affecting millions, is marked by urine abnormalities and impaired renal function, often progressing to end-stage renal disease (ESRD)

where hemodialysis (HD) becomes a vital treatment. (2).

Chronic Kidney Disease (CKD) is a progressive condition affecting over 10% of the global population, or more than 800 million individuals, with higher prevalence among older adults, women, racial minorities, and those with diabetes or hypertension, posing a significant burden, particularly in low- and middle-income countries ill-equipped to address its consequences. (3).

Chronic Kidney Disease (CKD) is defined by persistent abnormalities in kidney structure or function, such as a GFR <60 mL/min/1.73 m^2 or albuminuria ≥30 mg per 24 hours, affecting 8% to 16% of the global population (4). In developed nations, it is primarily caused by diabetes and hypertension, yet fewer than 5% of early CKD patients are aware of their condition.(5).

Risk factors for CKD progression are sociodemographic and economic factors, behavioral (healthy lifestyle, diet, and sleep), genetic (renin-angiotensin-aldosterone system pathway genes), cardiovascular (atrial fibrillation, hypertension, and vascular stiffness), metabolic (fibroblast growth factor 23 and urinary oxalate); and novel factors (AKI and biomarkers of kidney injury) (6).

If CKD left untreated then it can progress to ESRD. It is also called 5th stage renal disease. It is a medical condition in which a person`s kidneys cease functioning on a permanent basis with GFR less than 15mL/min/1.73 m2 leading to the need for a regular course of hemodialysis or a kidney transplant to maintain life (7). Many chronic diseases can cause ESRD. In many developed and developing countries, diabetes mellitus is the leading cause(8).

Other causes include Hypertension, Vascular disease, Glomerular disease, Urinary tract obstruction and dysfunction, Recurrent kidney stone disease, Congenital defects of the kidney or bladder, Unrecovered acute kidney injury, Certain medications, including nonsteroid anti-inflammatory drugs (NSAIDS). ESRD affects approximately 745,000 individuals in the United States. Patients with ESRD are dependent on hemodialysis or renal replacement therapy as a permanent treatment (8).

Hemodialysis is a form of renal replacement therapy. The kidneys role of filtration of blood is supplemented by artificial equipment to remove excess water, solutes, and toxins. It ensures maintenance of homeostasis (a stable internal environment) in the people experiencing a rapid loss kidney function, known as acute kidney injury (AKI), CKD and ESRD (9).

Many complications occur during hemodialysis (HD). Most common complications are nausea and vomiting, hypertension, muscle cramps, and headache (10). Other complications are itching, chills, backache, chest pain and fever. Use of central line catheter as a vascular access was associated with higher complication rate and infection (2).

Self-care ability is the ability of individuals or families to promote health, prevent disease, maintain health, and cope with illness and disability with or without the support of health care provider. It is considered necessary for the management of chronic illness like CKD and ESRD (11). Self-care is an important component of health care research, because it enhances the capability of the patients to cope with the consequences of chronic conditions. Studies shows that these patients faced limitations in self-care due to aging, the treatment process, and the problems resulting from the disease (12).

Here are several evidence that show lack of knowledge and awareness in patients about self-care behavior including adherence to dietary, fluids intake volume, and taking care of vascular access necessary for hemodialysis lead to clinical outcomes resulting in death and different complications (13)

Assessing the self-care abilities of patients undergoing regular hemodialysis sessions is crucial for optimizing their self-care, improving their quality of life, and reducing healthcare costs. It aligns with the principles of patient-centered care and contributes to the development of evidence-based practices in nephrology. Moreover, it underscores the importance of addressing the unique challenges faced by patients with kidney failure, ultimately leading to better health outcomes and resource utilization.

Material and Methods

The study utilized a cross-sectional descriptive design to collect data at a single point in time without intervention at Ghurki Trust Teaching Hospital in Lahore over four months. The population comprised patients undergoing hemodialysis, with a sample size of 117 calculated using the Cochran formula, based on a 95% confidence interval and a 5% margin of error. A random sampling technique was implemented to ensure equal selection chances for participants.

Inclusion criteria included patients aged 18-60 on hemodialysis, while exclusion criteria encompassed those with severe cognitive impairments, acute health issues, or pregnancy. A self-structured questionnaire with four sections (physical well-being, mental/emotional/spiritual well-being, professional life, and social relationships) was employed for data collection. After receiving ethical approval, participants provided consent before completing the questionnaire. Data were analyzed using SPSS version 21 and MS Excel, with descriptive statistics computed through frequency distributions and percentages, and inferential statistics assessed via the chi-square test, with significance set at $p < 0.05$.

Results

Table No1: Demographic Variable of the Hemodialysis Patients

		Frequency	Percent
Gender	Male	64	54.7
	Female	53	45
Marital Status	Married	83	70.9
	Single	34	29.1
Age Group	<20	7	6.0
	20-25	16	13.7
	26-30	41	35.0
	31-35	32	27.4
	36-40	6	5.1
	>40	15	12.8
Total		117	100.0

Analyzed by frequency "n" and percentage "%"

Table 1 outlines the demographic variables of 117 hemodialysis patients, revealing that 64 (54.7%) were male and 53 (45%) female. Most participants were married (83 patients, 70.9%), while the predominant age group was 26-30 years, with 41 patients (35%). Additionally, 7 patients (6.0%) were under 20, and 15 (12.8%) were above 40.

Table 2: Demographic Variable of the study Participants

		Frequency	Percentage
Qualification	Intermediate	67	57.3
	Bachelors	11	9.4
	Master	5	4.3
	Illiterate	34	29.1
Duration of hemodialysis	<6 Month	18	15.4
	6-12 Months	32	27.4
	> 1 Year	67	57.3
Site of hemodialysis	DLC	53	45.3
	Graft	6	5.2
	Av Fistula	58	49.6

Residence	Urban	57	48.7
	Rural	60	51.3
Financial	Poor	25	21.4
	Average	84	71.8
	Rich	8	6.8
	Total	117	100.0
Analyzed by frequency (n) and percentage (%)			

Table 2 summarizes the demographic variables of 117 hemodialysis patients, indicating that 67 (57.3%) had an intermediate education level, while 34 (29.1%) were illiterate. In terms of hemodialysis duration, 67 patients (57.3%) had been undergoing treatment for over a year. The site of hemodialysis revealed that 58 patients (49.6%) used an arterio-venous fistula, and the majority of participants resided in rural areas (60 patients, 51.3%). Financially, most patients reported an average status (84 patients, 71.8%).

Table 3: Self-care ability of Hemodialysis patients

	n	%	X	S.D
Average Self Care Ability Score (94-147)	77	65.8	137.55	18.16
Good Self Care Ability Score (148 to 200)	40	34.2		
Total	117	100.0		
Analyzed by mean (X) and Standard deviation (SD)				

Table 3 presents the self-care abilities of 117 hemodialysis patients, showing that 77 individuals (65.8%) achieved an average self-care ability score ranging from 94 to 147, with a mean score of 137.55 and a standard deviation of 18.16. In contrast, 40 patients (34.2%) demonstrated good self-care abilities, scoring between 148 and 200. Notably, none of the participants reported poor self-care ability.

Table no 4: Self-care ability of Hemodialysis patients

Self-care ability Domain	N	Min	Max	X	S.D
Physical well-being	117	16.00	49.00	33.22	7.05
Mental\Emotional\Spiritual well-being	117	22.00	46.00	35.56	5.36
Professional Life\Family\Career	117	18.00	47.00	33.11	5.97
Social Life\Family\Relationships	117	25.00	45.00	35.65	5.16
Analyzed by means (X) and Standard deviation (SD)					

Table 4 details the self-care ability domains of hemodialysis patients, providing minimum, maximum, mean, and standard deviation values. The mean scores were as follows: Physical well-being: 33.22 (SD = 7.05); Mental/Emotional/Spiritual well-being: 35.56 (SD = 5.36); Professional Life/Family/Career well-being: 33.11 (SD = 5.97); and Social Life/Family/Relationships: 35.65 (SD = 5.16). The results indicate that self-care ability was most significantly impacted in the Professional/Family/Career domain, with a mean score of 33.11.

Discussion

The analysis indicates that within the demographic data's gender category, the majority of participants (64) were male, accounting for 54.7%. Concerning marital status, most participants (83) were married, representing 70.9%. In terms of age groups, the majority of participants (41) fell within the 26-30 years bracket, constituting 35% of the total.

From the report of Nguyen and colleague their age ranged from 21 to 84 years, with a mean age of 51.4 years. Most (52%) were female, married (76.4%), and had less than a high school education (69.3%). Only 40.9% were employed. Almost half had a monthly income of less than 5 million (14).

According to reported of Izadi avanji and colleague that the study participants ranged in age from 21 to 87, with an average age of 53.4 (standard deviation: 12.8). The majorities of participants were women (56.7%), married (76.5%), and had educational levels below a diploma (69.7%). The findings revealed that most participants underwent hemodialysis sessions three times per week and had a history of hypertension (15).

The study findings indicate that the majority of participants (65.8%) exhibited an average level of self-care ability, followed by 34.2% who demonstrated good self-care ability. Notably, the study of roudsary and colleague none of the participants reported having poor self-care ability. According to the report of more than half of patients had poor Self-care activities regarding Personal Hygiene. About 71.5% had inadequate Self-care activities regarding arterio-venous shunt (16).

Moreover, according to Ali and colleague, over half of the participants (55.4%) belonged to the older adult age group, were predominantly male (52.5%), had no formal education (53.7%), and resided in urban areas (54.5%). A majority of the participants were married (72.3%) and had limited income (76%). A significant proportion was non-smokers (94.6%), while 88.8% were diagnosed with chronic diseases, including hypertension (72.7%). About 50.4% of participants had undergone hemodialysis treatment for durations ranging from 1 year to 4 years. Additionally, the majority of participants (70.2%) reported occasionally engaging in self-care activities (17).

This current study finds out that in the gender category of demographic information, the majority of respondents (54.7%) were men. Regarding marital status, the majority of participants 70.9% were married, the highest number of respondents 35% fell within the age of 26-30 years.

According to the report of avanji and colleague the mean scores of self-care, resilience, and spiritual well-being were 5.69%, 12.94%, and 17.9%, respectively. Univariate analysis showed that self-care had a statistically significant relationship with gender, occupation, education, being diabetic, and hyperlipidemia. Self-care positively correlated with the resilience and negatively correlated with age. Therefore, the health care providers should pay more attention to HD patients who are diabetic and older, as they are at a higher risk of having impaired self-care.(18)

Another study of lee and colleague the self-management program had improved patients' health-related quality of life in the mental health components ($p < 0.001$), but not in the physical health components. The program also promoted patients' self-care behaviors ($p < 0.001$) and self-efficacy ($p < 0.05$). (19)

Furthermore, the study of Nomiko and colleague showed that there is correlation between self-care management and quality of life of chronic renal failure patients who undergo hemodialysis with a p-value equal to 0.031. It needs efforts to improve the quality of life of the client such as comprehensive and structured education and health care for patients who undergo hemodialysis (20).

Conclusion: The demographic analysis reveals that the majority of participants were male (54.7%) and married (70.9%), with the largest age group being 26-30 years (35%). Most participants had intermediate qualifications (57.3%) and had been on hemodialysis for over a year (57.3%). The predominant access method for hemodialysis was AV fistula (49.6%), and most participants resided in rural areas (51.3%). Financially, the majority fell within the average range (71.8%). Overall, the findings illustrate a demographic profile characterized by a predominantly male, married population with intermediate education, prolonged hemodialysis duration, rural residency, and average financial status.

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