

Assessment of Nurses' Knowledge Toward Providing Nursing Care to Patients with Hemodialysis at Baghdad Teaching Hospital

Wurood A. Mahmood and Basim Hasson Hussein

¹Al-Farabi University, College of Nursing, Iraq.

²Altoosi University, College of Nursing, Iraq.

Email: wuroodali88@gmail.com, warud.ali@alfarabiuc.edu.iq, Basim.hasson@altoosi.edu.iq

ABSTRACT

Background: The most prevalent treatment for the disease known as chronic renal failure (CRF), which is on the rise worldwide, is hemodialysis. The most popular technique for treating severe and irreversible renal failure is hemodialysis. **Objective(s):** The purpose of this study had been assessing nurses' knowledge of nursing care for hemodialysis patients and to determine the association between sociodemographic characteristics and nurses, including age, marital status, educational attainment, number of years of experience in hemodialysis units, and participation in training sessions related to nursing care in hemodialysis. **Methods:** A descriptive study was conducted at the Baghdad Teaching Hospital's hemodialysis units from October 25, 2022, until April 2, 2023. From Baghdad Teaching Hospitals, a non-probability purposive sample of fifty nurses employed in hemodialysis units was chosen. Using a developed questionnaire with two sections—a demographic data form with five items and a questionnaire about nurses' knowledge with twenty items—the data was gathered through direct interviewing. Pilot research was used to assess the questionnaire's reliability, and a panel of seven experts evaluated its validity. The data was analyzed using inferential statistical analysis techniques (Chi-square) and descriptive statistical techniques (frequency, percentage, and score mean). **Results:** According to the study's findings, half of the sample was female, most of them were high school graduates, and they were all in their 20s to 29s. According to the study, nurses' understanding of providing nursing care to patients undergoing hemodialysis was inadequate. The study demonstrated a significant relationship between gender, level of education, years of experience in hemodialysis units, and participation in training sessions, and nurses' knowledge regarding nursing care. Based on the researcher's point of view, these findings mean the hemodialysis units are totally depends on nurses who have graduated from secondary nursing school and nursing institute, while nurses who have graduated from nursing college are assigned to special units and are still in limited numbers relative to other nurses. Regarding the level of education, based on the researcher's point of view, these results suggest that the fact that there is a recurrent rotation from one unit to another within the hospital might explain the few years of nursing experience in hemodialysis units. On the other hand, when nurses are young, the outcome explained would have a greater willingness to improve their skills and practices relative to other nurses in the higher age group. Regarding the participation in session about nursing care in hemodialysis, based on the researcher's point of view, all nursing staff in hemodialysis units should be enrolled in training sessions to enhance their nursing care awareness and skills. This may be due to their hospital's emphasis on courses related to infection prevention rather than dialysis related courses.

Conclusion: According to the study, nurses' knowledge of nursing care was significantly correlated with their gender, educational attainment, years of experience in hemodialysis units, and sharing during training sessions.

Keywords: Chronic Kidney Disease, Hemodialysis, Nurses' Knowledge, Vascular Access.

Article Information

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I. INTRODUCTION

Healthy kidneys remove extra fluid as urine in addition to cleaning blood. They also create substances that keep the body healthy. Dialysis takes over some of these tasks when the kidneys fail. A medical procedure called hemodialysis (HD) is used to treat electrolyte imbalances and remove waste and fluid from the blood. HD is used to treat both acute (temporary) and chronic (permanent) renal insufficiency (Malikc, *et al.*, 2018)¹.

Hemodialysis is a kidney failure treatment that filters the patient's blood outside of his body using a device known as a dialyzer. This kind of procedure can help patients feel better and live longer, but it cannot cure renal failure. It can replace part of the kidney duty (Nobahar, 2017)².

In the dialysis unit, the nurse plays a crucial role in patient monitoring, assistance, assessment, and education. Because there are many potential complications during dialysis, such as circuit clotting, air embolism, insufficient or excessive ultra-filtration hypotension, cramping, Monitoring of the patient, dialyzer, and dialysate bath is necessary to prevent vomiting, blood leakage, contamination, and access problems (Ebrahim, *et al.*, 2019)³.

II. METHODOLOGY

From October 25, 2022, until April 2, 2023, a descriptive study was conducted at the Baghdad Teaching Hospital's hemodialysis units. Fifty nurses who worked in hemodialysis units were chosen from Baghdad Teaching Hospitals as part of a non-probability purposive sample. Using a developed questionnaire with two sections—a demographic data form with five items and a questionnaire about nurses' knowledge with twenty items—the data was gathered through direct interviewing. Pilot research was used to assess the questionnaire's reliability, and a panel of seven experts evaluated its validity. The data was analyzed

using inferential statistical analysis techniques (Chi-square) and descriptive statistical techniques (frequency, percentage, and mean score).

Highlights: -

- Hemodialysis is the main treatment for patients with chronic renal failure worldwide.
- Nurses play a critical role in monitoring, assisting, and educating patients during dialysis.
- The study assessed 50 nurses at Baghdad Teaching Hospital between October 2022 – April 2023.
- Findings showed that more than half of the nurses had poor knowledge regarding nursing care for hemodialysis patients.
- Knowledge level was significantly related to gender, education, years of experience, and training sessions.
- Most nurses had not attended any specialized training sessions.
- The study recommends continuous training programs and employing academically qualified nurses in hemodialysis units.

Chronic kidney failure is a growing health problem, and many patients rely on hemodialysis to survive. Nurses are central to this process, as they provide care, monitor complications, and educate patients. This study assessed the knowledge of 50 nurses working in hemodialysis units at Baghdad Teaching Hospital. Results showed that more than half of the nurses had poor knowledge regarding nursing care for hemodialysis patients, particularly those who had not attended training sessions. Nurses' knowledge was strongly linked to education level, years of experience, and participation in training. These findings highlight the urgent need for continuous education programs and the allocation of academically qualified nurses in dialysis units. By improving nurses' knowledge, the quality of patient care and outcomes in hemodialysis can be significantly enhanced.

RESULTS

According to **Table (1)**, women make up the bulk of the sample (68.0%), while men make up 32.0%. The age group of 20 to 29 years old comprises the largest percentage of nurses (78.0). In terms of their educational background, the majority of nurses (58.0%) are institution graduates. Of the nurses in the group with 1–5 years of experience, the largest percentage (54.0) had this experience. In terms of their training, the majority of nurses (68.0%) report having never attended a session on nursing care for hemodialysis patients.

Table (1): Nurses' Socio-demographic Characteristics.

Gender	Frequency	Percent
Male	16	32.0
Female	34	68.0
Age (year)	Frequency	Percent
20-29 years old	39	78.0
30-39years old	6	12.0
40-49years old	5	10.0
Educational level	Frequency	Percent
Secondary nursing school graduate	14	28.0
High institute graduate	29	58.0
Collage of nursing graduate	7	14.0
Years of Experience in hemodialysis	Frequency	Percent
<5 years	27	54.0
5-10 years	14	28.0
>10 years	9	18.0
Training Courses	Frequency	Percent
No	34	68.0
1-2 sessions	10	20.0
> 2 sessions	6	12.0

Freq.=Frequencies, %=Percentages, $\bar{X}$ = Arithmetic Mean

Table (2) showed that, as indicated by low mean scores of 32 and $\pm SD=9.97$, 52.9% of nurses expressed dissatisfaction with the nursing care given to hemodialysis patients.

Table (2): Overall of Nurses' Knowledge Toward Nursing Care Provided to hemodialysis Patients.

nurses' Knowledge	Freq.	%	$M \pm SD$
Poor ($M=20-33$)	27	52.9	32.84 $\pm$ 9.97
Fair ($M=34-46$)	19	37.3	
Good ($M=47-60$)	5	9.8	
Total	50	100.0	

M: Mean for total score, SD=Standard Deviation for total score.

Table (3): The results indicated that there were notable variations in nurses' knowledge between male nurses ($M \pm SD = 1.93 \pm 0.640$) and female nurses ($M \pm SD = 1.05 \pm 0.224$) ($t = 5.922$; $p = 0.000$).

Table (3): Statistical Differences between Nurses' Knowledge and their Gender (n=50).

	Gender	Mean	SD	t-value	d. f	$p \leq 0.05$
Nursing care						
	Male	1.93	.640	5.922	48	0.000
	Female	1.05	.224			

Table (4): The results showed that nurses' knowledge did not differ significantly based on their age groups ($p = 0.898$).

Table (4): Statistically significant variations in nurses' knowledge according to age group.

Age Variables	Source of Variance	Sum of Squares	d.f	Mean Square	F	$p \leq 0.05$
Quality of Nursing Care	Between Groups	.282	4	.071		
	Within Groups	11.910	45	.265	.266	.898
	Total	12.192	49			

SD: Standard deviation, t: t-test, d.f: Degree of freedom, p: Probability value

DISCUSSION

Table (1) Discussion of nurses' demographic characteristic, Fifty nurses who work in the hemodialysis unit at Baghdad Teaching Hospital make up the study's sample. Throughout the current investigation, it has been seen in Table 1 that women made up roughly half of the study group (53.8%). that women made up roughly half (68.0%) of the study population, with men making up the remaining portion. Furthermore, this result is in line with a study by Yousif et al. (2107)⁴ that revealed that women made up the majority of hemodialysis nurses (82.5%).

The age group of 20–29 years old has the largest percentage of the sample (78.0). This finding is in line with a study by Yousef *et al.*

(2019)⁵ that discovered that 25% of the nurses were older than 30 (mean age of 25.77 ± 6.32 years), and around two thirds (62.5%) were between the ages of 20 and 30.

According to their educational background, the majority of nurses (58.0) were graduates nursing institute. This result coincides with research done by Hassan *et al.* (2013)⁶ that found that over two-thirds (67.5%) of staff nurses graduated from secondary nursing school. Regarding the participation in session about nursing care in hemodialysis, most of the nurses have not participated in session are ranging between (68.0). This result agrees with a study done by Mahmood (2016)⁷, The findings demonstrated that more than half (66.3%) of the study participants were unable

to attend the vascular access training sessions organized by the hospitals.

Table (2) showed that, as indicated by low mean scores of 32 and $\pm SD=9.97$, 52.9% of nurses reported dissatisfaction with the nursing care they provided for hemodialysis patients. According to this study, which was confirmed by Ahamed, *et al.* (2018)⁸, the nurses in question had inadequate levels of knowledge about hemodialysis for all general and fundamental information prior to intervention.

Despite this, their overall mean posttest scores of 92.15 ± 7.06 showed a significant statistical increase in their level of knowledge in all post-intervention items. This finding was corroborated by Mahmood (2016)⁷, who found that most nurses had a fair understanding of how to care for patients with vascular access in hemodialysis. These findings indicated that nurses working in HD units needed to update their knowledge of any hemodialysis-related topics.

Table (3): The results showed a significant difference in nurses' knowledge between male nurses ($M \pm SD=1.93 \pm 0.640$) and female nurses ($M \pm SD=1.05 \pm 0.224$) ($t=5.922$; $p=0.000$). This finding contradicts a study by Mahmood (2016)⁷ that found no significant correlation between a nurse's gender and their level of expertise at the $p \leq (0.05)$ level.

Table (4): The results showed that nurses' knowledge did not differ significantly based on their age groups ($p=0.898$). This, study disagrees with Mahmood, (2016), who showed there is a significant relationship at $p \leq (0.01)$ level between nurses' knowledge and their age.

CONCLUSION

According to the study, nurses' knowledge of nursing care was significantly correlated with their gender, educational attainment, years of experience in hemodialysis units, and sharing during training sessions.

RECOMMENDATION

1. Nurses who work in hemodialysis units should have recourse to a special, extended continuing education program that covers nursing care and renal failure.

2. Regular training sessions ought to include the most current information on nursing care for hemodialysis patients.

3. The study recommends that specialized training sessions regarding nursing care in hemodialysis units be planned, utilizing booklets designed and distributed to all hemodialysis nurses. Units, the research suggested that it is crucial to hire nurses with the greatest level of knowledge (academic nurses should be allocated to work in hemodialysis units).

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