



Article

Nurses` Knowledge about Fluids for Patients with 3-5 Stages of Chronic Renal Failure at Dialysis Unit in Thi-Qar, Iraq.



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Abstract

Background: Nurses play a crucial role in managing fluid balance for patients with chronic renal failure. Proper knowledge of fluid management is essential to prevent complications and ensure effective treatment, especially in dialysis settings. Understanding the factors that influence nurses' knowledge can help improve care quality. **Objective:** To assess nurses' knowledge regarding fluid management in patients with chronic renal failure and to identify any associations between nurses' socio-demographic characteristics and their knowledge levels. **Methodology:** A cross-sectional study was conducted using a non-probability sample of 50 nurses working in dialysis units. Data were collected through structured questionnaires assessing knowledge levels and socio-demographic variables such as education level and years of experience. **Results:** The majority of nurses demonstrated a moderate level of knowledge regarding fluid management. A significant association was found between educational qualification and knowledge level, with bachelor's degree holders showing the highest awareness. Years of experience also showed a statistically significant relationship with knowledge. **Conclusion:** Educational qualification, particularly holding a bachelor's degree, is the most influential factor affecting nurses' knowledge about fluid management in chronic renal failure. The study recommends targeted training programs and educational materials to enhance nurse competence in dialysis units.

Keywords: Nurses Knowledge, Chronic Kidney disease, Dialysis unit, Fluid balance, Dialysis patients.

1. Introduction

Chronic renal failure affects 18.4 percent of people living in Europe, as well as patients with end stage kidney failure getting the out of proportion to engage in the healthcare services which outlay of large quantity with period in management centers [1].

Ever after the presentation of initial kidney dialysis in the person was by Hass in 1924. Even so, exists of best desired management to Kidney failure in its final stages, according to the latest data from specialized institutions, is one of the issues that receives attention (ERA-EDTA) [2].

The importance of the study for Iraq due to the significant increase in the mortality rate from chronic kidney disease, as the disease is considered chronic renal failure among the top ten in the ten most prevalent death rates in Iraq, where it occupies the fifth and sixth place from 2015 to 2019, according to the statistics of the Iraqi Ministry of Health and Environment. In 2015 it was estimated at 6,879 thousand in fifth place, while in 2016 it was estimated at 6,001 thousand in sixth place, and in 2017 it was estimated at 6,400 while in 2018 the number of deaths was estimated at 6,110 thousand in fifth place, In 2019 with 5,300 in sixth place in the number of the first ten deaths in Iraq. Therefore, it is necessary for the nurse to know how to manage the nutrition of patients with renal failure, as it has a major role in improving the patient's condition [3].

Fresenius Medical Care [4] reported that end-stage renal disease (ESRD) is an increasing community health problematic, given to the growing incidence globally.

It is approximated that by 2020, the number of ESRD patients will grow by 60% when associated with the number of patients recorded in 2005. Statistics from 150 countries displayed that over 3 million patients were treated for ESRD internationally by the close of 2012 and that the number of patients is increasing faster than the world population (growth rate: 7%) [5].

2. Materials and Methods

- Design: A cross-sectional study.
- Study Sample: Non-probability sample of (50).
- Setting: Nurses who work on dialysis units.
- Data collection mechanism: To achieve the objectives of our study, we developed a questionnaire to collect statistics to support our research, which focuses on nurses' knowledge of body fluids among patients with chronic renal failure in hospitals.
- The questionnaire consists of two parts: The first part covers demographic information. The second part contains two sections related to fluids.

3. Results and Discussion

Table 1. Display the samples involved in our study, by their demographic characteristics

Socio demographic	Scale	F	%
Age	20-30	22	44.0
	31-40	12	24.0
	more than 40	16	32.0
Marital status	Married	40	80.0
	Divorced	0	0.0
	Widow	2	4.0
	Single	8	16.0
Professional qualification	Secondary Nursing School	10	20.0
	Institute Degree	11	22.0
	Bachelor's Degree (Academic)	21	42.0
	High Studies (Masters' Degree)	8	16.0
Years of experience	Less than 1 year to 2 years	21	42.0
	More than 2	29	58.0
	Male	18	36.0
Gender	Female	32	64.0

Table 2. Average level of knowledge of nurses towards fluids and their relation to patients interested in our study

No.	Items	Frequency			Mean of score	Severity
		I know	I am not sure	I do not know		
1	In many cases, sodium restriction leads to a significant increase in the fluid.	12	18	20	1.86	M
2	It is essential that ESRD patients to restrict their fluid intake.	23	14	13	2.21	M
3	fluid consumes 1000ml/day + Urine output	6	19	25	1.64	M
4	The administration of salts and fluids is often used in dialysis patients through a dry weight approach	9	13	28	1.63	M
5	Total body fluids are divided into extracellular fluid and intracellular fluid	7	21	22	1.71	M
6	Total				1.81	M

$H. = H \{2.5 - 3\}$; $M. = Moderate \{1.5 - 2.5\}$; $L. = L \{1. - 1.5\}$, $freq. = frequency$

Table 3. The relationship between the concordance coefficient and the level of knowledge among nurses of different age

groups

Nurses` Knowledge and Age	Low	High	Total	*C.C. test	*P-value	CS
20-30	18	4	22	0.25	0.004	S.
30-40	10	2	12			
More than 40	15	1	16			
Total	43	7	50			

Table 4. The relationship between emergency laboratories and the knowledge of workers (nurses) to respond professional qualification

Nurses` Knowledge and Professional qualification	Low	High	Total	C.C. test	P-value	CS
High school Nursing	6	4	10	0.37	0.000	S.
Diploma	7	4	11			
Bachelor`s degree	12	9	21			
High studies	2	6	8			
Total	27	23	50			

C.C. =Contingency Coefficient; S= Significant ($p \leq 0.05$) ; H.S = High Significant

Table 5. Relationship of the contingency coefficient and significant level responding Nurses` knowledge among working experience

Nurses` Knowledge and Working Experience	Low	High	Total	C.C. test	*P-value	CS
Less than 1 year to 2 years	10	11	21	0.16	0.002	S.
More than 2	19	10	29			
Total	29	21	50			

C.C. =Contingency Coefficient; S= Significant ($p \leq 0.05$); N.S = non-significant

4. Conclusions

Based on the subjects' age group, the percentage of the sample was (44.0 percent) were within the age group (20-30) years old. This is consistent with Manandhar et al. [6] who reported that in a study of dialysis nurses' experience and practice of hemodialysis, they found that the average age of qualified nurses was 27.6 years. This finding agrees with Alramadhan et al. [7] who mentioned that roughly half of the nurses are between the age of 20 and 29.

Most of them were married. (80.0 %) of the whole sample and 16.0% were single, while 4% were widow. This result was supported by: Munuo et al. [8] findings, the majority of respondents were married, with 60% being married, 30% being single, 3% being widowed, and 7% being divorced. This result is similar to the results obtained from the study done by Halmat et al. [9] where in the largest proportion reported that 68.6 percent of nurses were married and 31.4 were unmarried.

Most of the workers had a bachelor's degree in nursing. 42.% and 22% were with diploma in nursing, 20% were high school nursing and 16% were high studies in nursing. These results come alone with Cass et al. (2014) in which 40 percent carry a postgraduate degree, 35 percent have an undergraduate degree, and 25 percent have hospital experience, according to the survey. Also was supported by Adejumo et al. [10] according to the study outcomes, 20% of the respondents have basic nursing qualification, 34% has a post-basic nursing qualification, 42% has a BSc (nursing) degree, 3% have post graduate nursing experience, and 1% have PhD in nursing. Most of these results were not consistent with

Emmanuel et al. [11] reports that the majority of the samples (60 percent) have diploma degree and only (1.7 percent) have master's degree and (38.3) have a bachelor's degree in nursing.

Concerning the years of experience, the majority of the samples (58%) have more than 2 years of experience in the working field, 42% have less than 1 year of experience in working. These results come along with Munuo et al. [8] who mentioned that the majority of the participants (42.9%) have served in dialysis units for two to five years, less than one year (23.3%), six to ten years (17.3%), and more than ten years (16.5 %). These results are supported by Halmat et al. [9] according to the majority of the survey, 37.3 percent of nurses have four to seven years of experience, 31.3 percent have one to three years of experience, 15.7 percent of nurses have eight to eleven years of experience, and 15.7 percent of nurses have twelve to fourteen years of experience.

According to gender of the subjects the majority of the study sample (64%) were females and the remaining were

males. These results come along with Emmanuel et al. [11] shows the majority of the study's participants were females (64.2%) and males (35.8%), with a total sample size of 120 nurses and experience in chronic kidney disease and perceptions of inpatient management procedures. This finding was supported by Aziz et al. [12] who reported that females made up the majority of respondents (71%) while males made up (29 percent). These results were somewhat similar to those of Martin et al. [13] in 2013, whose results revealed that the majority were females, approximately 92.6%, and males, 2.8%, out of a total of 181 samples.

Table (2) showed that nurses' knowledge toward fluid for patients with CKD were within the moderate level of knowledge. These results agree with Hill et al. [14] who indicated that the best response to fluid restriction problems in patients with chronic renal failure was obtained at a moderate level. This finding is supported by Mohammed et al. [15] who reported that the right rate for questions about symptoms of fluid overload in patients was at a moderate level. These results come inconsistent with Emmanuel et al. [11] who reported that in CKD stages 4 and 5, who are not on hemodialysis, a significant proportion of nurses did not address the question about fluid intake.

Table (3) (22 %) Percentage of nurses with intermediate knowledge level between the ages of 20-30, The result showed that there is a real relationship between age, work efficiency and performance among working people (nurses). These results differ from the study Halmat et al. [9] who indicated that no significant changes between age group and knowledge.

Table (4) while most Through research and samples, the largest variable and influencer, according to statistical evidence, is the professional level (bachelor's degree) within the knowledge of working people (nurses). at $P \leq .000$. These results supported by Adejumo et al. [10] according to the study outcomes, 20% of the respondents have basic nursing qualification, 34% has a post-basic nursing qualification, 42% has a bachelor's degree in nursing, 3% have post graduate nursing experience with high knowledge.

Table (5) showed (58 %) of the study sample have more than 2 years of experience and within the moderate level of nurses' knowledge, while the result has indicated that there was a significant relationship between working experience and nurses' knowledge at $P \leq .002$. These results disagree with Halmat et al. [9] who indicated that there is no association between years of experience and level of knowledge.

Recommendations

The researcher recommends for a training course targeted all nurses who worked at dialysis unit, moreover recommends publishing a posters and papers regarding chronic kidney disease around the dialysis unit.

Conflicts of Interest

There is no Conflict of Interest

References

1. Neliti. (2022). Fluid and electrolyte management in renal disorders: Best practices [Internet]. [Cited 2025 May 24]. Available from: <https://media.neliti.com/media/publications/584135-fluid-and-electrolyte-management-in-renal-23480732.pdf>
2. National Kidney Foundation. (2022). The dos and don'ts of fluid management for kidney disease [Internet]. [Cited 2025 May 24]. Available from: <https://www.kidney.org/news-stories/dos-and-don-ts-fluid-management-kidney-disease>
3. Iraqi Ministry of Health and Environment. (2019). Retrieved from <http://www.cosit.gov.iq>
4. Fresenius Medical Care. (2013). End Stage Renal Disease patients in 2016: A global perspective. Germany: Fresenius Medical Care, Deutschland GmbH. Available from: <http://www.vision-fmc.com>
5. Pippas, M., Kramer, A., Noordzij, M., Afentakis, N., de la Torre, F. A., Ambuhl, P. M., Madre, M. I. A., and Vianda, S. (2017). The European Renal Association-European Dialysis and Transplant Association Registry Annual Report: A summary. *Clinical Kidney Journal*, 10, 1–6.
6. Manandhar, D. N., Chhetri, P. K., Poudel, P., Baidya, S. K., and Agrawaal, K. K. (2017). Knowledge and Practice of Hemodialysis Amongst Dialysis Nurses. *J Nepal Medical Association*, 56(207), 346–347. doi: 10.4314/AHS.v20i2.46
7. Alramadhan, E. S., Alsayed, S., Ibrahim, O. A. M., Ali, A. Z., Fahad, A. F., Khalid, A. F., Khaled, A. B., Essa, A. Z., and Essa, A. F. (2019). Assessment of the Nurses' Knowledge during Caring for Hemodialysis Patients. *Austin Journal of Nursing & Health Care*, 6(1), 1051.
8. Munuo, A. E., Mugendi, B. W., Kisanga, O. A., and Otieno, G. O. (2016). Nutrition Knowledge, Attitudes And Practices Among Healthcare Workers in Management of Chronic Kidney Diseases in Selected Hospitals in Dar es Salaam Tanzania: A cross-sectional study. *BMC Nutrition*, 2(1), 6.
9. Halmat, A. R., Newroz, G., Goran, A. O., and Yousif, M. Y. (2018). Nurses' Knowledge of the Nutritional Management of Renal Failure in Erbil City, Kurdistan Region, Iraq. *Zanco Journal of Medical Sciences*, 22(3), 385–393.
10. Adejumo, O. A., Akinbodewa, A. A., Iyawe, I. O., Emmanuel, A., and Ogungbemi, O. (2018). Assessment of Knowledge of Chronic Kidney Disease among Non-nephrology Nurses in Akure, South-West Nigeria. *Saudi Journal of Kidney Diseases and Transplantation*, 29(6), 1417–1423.

11. Emmanuel, G., Geldine, C., Didace, N., Mbabazi, P. M. T., Marie, J. T., and Lakshmi, R. (2020). Knowledge Related to Chronic Kidney Disease (CKD) and Perceptions on Inpatient Management Practices Among Nurses at Selected Referral Hospitals in Rwanda: A Non-Experimental Descriptive Correlational Study. *International Journal of Africa Nursing Sciences*, 13.
12. Aziz, N. (2018). Nurses' knowledge of the nutritional management of renal failure in Erbil city, Kurdistan Region, Iraq. *Zanco Journal of Medical Sciences*, 22(3), 385–393.
13. Martin, L., Leveritt, M. D., Desbrow, B., and Ball, L. E. (2013). The Self-Perceived Knowledge, Skills and Attitudes of Australian Practice Nurses in Providing Nutrition Care to Patients With Chronic Disease. *Family Practice*, 31(2), 201–208.
14. Hill, N. R., Fatoba, S. T., Oke, J. L., Hirst, J. A., O'Callaghan, C. A., and Hobbs, F. D. R. (2016). Global Prevalence of Chronic Kidney Disease—A Systematic Review and Meta-Analysis. *PLoS ONE*, 11.
15. Mohammed, A. A., and Baez, Y. K. (2023). Assessment of nurses' knowledge and practices regarding nursing management for patients on hemodialysis at Kirkuk General Hospital, Iraq. *Mosul Journal of Nursing*, 11(1), 48–55.

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