



The Relationship Between Health Care Transition and Self-care in Chronic Kidney Disease Patients Undergoing Hemodialysis

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Abstract

Chronic Kidney Disease (CKD) is one of the chronic conditions that contributes to global morbidity and mortality, with a continuously increasing prevalence. The management of CKD through hemodialysis requires patients to perform self-care independently and effectively. Self-care is the performance or practice of individual activities to take initiative and shape their behavior in maintaining life, health, and well-being. Health care transition is the process of health changes experienced by a person involving changes in health status, role relationships, and expectations. This indicates the importance of health care transition in improving patients' independence and self-care practices. The aim of this study was to analyze the relationship between health care transition and self-care among patients with Chronic Kidney Disease undergoing hemodialysis at a private hospital. This research employed a quantitative method with a cross-sectional study design. The sampling technique used was purposive sampling, with a total of 126 respondents. The research instruments used were the STARx Questionnaire and the Hemodialysis Patients Self-Care Measurement Scale to assess self-care. The study was conducted from April 14 to 16, 2025. The data analysis techniques included univariate and bivariate analyses using the chi-square test. The results of the univariate analysis showed that the majority of respondents had a good level of health care transition (61.1%) and a good level of self-care (51.6%). The results of the bivariate analysis indicated a significant relationship between health care transition and self-care among CKD patients undergoing hemodialysis at the private hospital. It is expected that health care professionals can optimize support during the health care transition process to enhance patients' independence in performing self-care.

Keywords: Chronic Kidney Disease, Health Care Transition, Hemodialysis, Self-Care

INTRODUCTION

Chronic Kidney Disease (CKD) is a condition of damage to kidney structure and function that lasts for at least three months or more (Biljak et al., 2017). Common symptoms of CKD include nausea, vomiting, edema, hypertension, skin damage, and sleep disturbances (Musniati, 2024). CKD is classified into five stages, with stage five as the final stage where the glomerular filtration rate (LFG) is $<15 \text{ mL/min/1.73 m}^2$, where kidney function cannot function properly (Hurair et al., 2024).

The World Health Organization (WHO) has identified CKD as one of the top ten causes of death in the world, with the number of deaths due to CKD increasing from 13th place with 813,000 in 2000 to 10th place with 1.3 million deaths in 2019 (WHO, 2024). Based on data from the Ministry of Health in 2018, the highest prevalence

of CKD was in North Kalimantan with a percentage of 19.33%. In 2018 there was an increase in CKD cases in Tangerang to 2,052 (Kemenkes, 2019).

Hemodialysis was one of the main approaches in CKD management (Pratama et al., 2020). In this process, the application of self-care behavior was crucial because patients are faced with health challenges that are physical, psychological, social, economic, and spiritual. Self-care strategies could help reduce the negative impact of these various problems (Avanji et al., 2021).

Orem's theory states that self-care is the action of individuals in caring for themselves to maintain life and well-being (Sya'diyah et al., 2023). Self-care management in CKD patients is important to prevent complications, with the implementation of healthy habits such as maintaining diet, exercise, and blood pressure control (Zimbudzi et al., 2018).

One of the factors that influence self-care is health care transition, which is a process of changing health status that involves one's health status, role relationships, and expectations (Oliveira et al., 2020). Research shows that suboptimal transitions can lead to ineffectiveness in self-care, increasing the risk of complications such as infection and faster decline in kidney function (Tyler et al., 2023).

Based on the results of a preliminary study through interviews with six CKD patients undergoing hemodialysis, it is known that patients generally understand about self-care such as limiting food and beverage intake, compliance with taking medication, undergoing hemodialysis regularly, and caring for hemodialysis access. However, some patients said they did not understand the hemodialysis therapy. This suggests that during the transition to dialysis, patients experience challenges in psychosocial adjustment, decision-making, and care management that are influenced by individual, social, and organizational factors. This suggests a gap between knowledge and implementation of self-care. However, research that specifically analyzes the relationship between health care transition and self-care in CKD patients, especially in Indonesia, is still very limited. Therefore, this study was conducted to complement the limited understanding and as a basis for developing care transition interventions that are more contextualized and focused on patient independence.

METHODS

This study used quantitative methods with a cross-sectional design with purposive sampling technique. The sample in this study were CKD patients undergoing hemodialysis in one private hospital in Tangerang as many as 126 respondents, with the inclusion criteria were CKD patients undergoing hemodialysis, patients aged 17 years and above, and patients with stable hemodynamics.

The research instrument used in this study was a questionnaire. The questionnaire to measure health care transition adapted from the STARx Questionnaire consisting of 18 items from (Ferris et al., 2015) taken from the official UNC STARx website, the researcher has conducted validity and reliability tests which show 18 out of 18 statements are valid and reliable, namely $r_{\text{count}} > 0.361$ ($r_{\text{table}} 5\%$ ($N = 30$)) and Cronbach alpha value 0.842. The questionnaire to measure self-care adapted from the Hemodialysis Patients Self Care Measurement Scale to Assess Self-care instrument developed by Shintani, (2007), then adopted and modified by (Kallifah et al., 2024) which consists of 15 items, researchers have conducted validity and reliability tests which show 11 of the 15 valid and reliable statements, namely $r_{\text{count}} > 0.361$ ($r_{\text{table}} 5\%$ ($N = 30$)) and Cronbach alpha value 0.728. Researchers retained four invalid statements because they are an important part of self-care and are supported by several research journals.

The data collection procedure carried out is, the researcher submits an application for ethical testing and gets a letter passing the ethical review from the Research Ethics Committee of the Faculty of Medicine, Pelita Harapan University (No.117/K-LKJ/ETIK/I/2025), then the researcher took care of a research permit to the hospital and got a research permit from the Siloam Lippo Village Health Research Ethics Committee, then the researcher submitted a research permit to the Head Nurse in the hemodialysis room. The researcher went to the respondent and introduced himself, explained the purpose of the study, and gave informed consent to the respondent, after the respondent agreed and signed the informed consent, the researcher gave a hardcopy questionnaire. After the number of respondents was met according to the sample, the researcher continued processing the data for further analysis.

The data analysis used was univariate data analysis and bivariate data analysis. Researchers conducted univariate data analysis by Kolmogorov-Smirnov test to determine the frequency distribution of each research variable. In the health care transition and self-care variables, the data normality test had been carried out and the data results were not normally distributed with results <0.05 , namely P-value 0.000 on health care transition and P-value 0.001 on self-care so that researchers use the median as a cut off point value, namely 67 on the health care transition variable and also 52 on the self-care variable. Then, researchers used this number as a cut-off point in creating categories, health care transtition variabel (Good = $X \geq 67$, Bad = $X < 67$), self care variabel (Good = $X \geq 52$, Bad = $X < 52$).

The ethical principles used in this study according to Polit and Beck cited in (Swarjana, 2023) namely the Principle of Beneficence, the Principle of Respect for Human Dignity, and Justice.

RESULTS

Based on the results of the study, respondents were categorized based on age, gender, latest education, occupation, and length of hemodialysis as shown in Table 1.

Table 1. Respondent Characteristics			
Variable		<i>f</i>	%
Age			
	17-25 years	1	0.8
	26-35 years	11	8.7
	36-45 years	17	13.5
	46-55 years	27	21.4
	56-65 years	49	38.9
	>65 years	21	16.7
Gender			
	Male	62	49.2
	Female	64	50.8
Education Level			
	Higher (Diploma, Sarjana, Magister, Doktor)	31	24.6
	Secondary (SMP, SMA, MA, SMK)	75	59.5
	Lower (SD, MI)	16	12.7
	None	4	3.2
Work			
	No	104	82.5
	Yes	22	17.5
Length of hemodialysis treatment			
	1-5 years	85	67.5
	>5 years	41	32.5

Based on the research results in table 1, it shows that the majority of respondents' ages are in the range of 56-65 years as many as 49 (38.9%), the gender of respondents is dominated by women as many as 64 (50.8%), the last education of respondents with more than half of the total respondents is secondary (SMP, SMA, MA, SMK) as many as 75 (59.5%), the majority of respondents are categorized as not working, namely 104 (82.5%), and most respondents have been undergoing hemodialysis for 1-5 years, namely 85 (67.5%).

Table 2. Overview of Health Care Transition and Self Care			
Variable		<i>f</i>	%
Health care transition			
	Good	77	61.1
	Bad	49	38.9
Self-Care			
	Good	65	51.6
	Bad	61	48.4

Based on the results of the study in table 2, it shows that the majority of respondents with good health care transition are 77 (61.1%). Respondents tend to have good self-care, namely 65 (51.6%).

Table 3. Relationship Health care transition and Self-care

Health care transition	Self-care				Total		P-value
	Good		Bad				
	f	%	f	%	f	%	
Good	49	63.6	28	36.4	77	100	0.001
Bad	16	32.7	33	67.3	49	100	

Based on the results of the correlation statistical test in table 3 using the Chi-Square test regarding the relationship between health care transition and self-care in chronic kidney disease patients undergoing hemodialysis in one private hospital, it was found that the p value = 0.001. These results indicate that there is a significant relationship between health care transition and self-care.

DISCUSSION

Respondent Characteristics

Age

Research conducted in a hemodialysis room in one of the private hospitals in western Indonesia showed that most respondents were between 56 and 65 years old. This is in line with several studies that show the most respondents are in the elderly category, namely 55-65 years. This happens because at this age there is a natural decline in kidney function or glomerular filtration, then the cumulative risk of metabolic diseases such as hypertension and diabetes begins to have a real impact on the kidneys (Amaral et al., 2019). Other studies also show that the highest number of respondents in the elderly category, namely 60-69 years, shows a high prevalence of CKD, this is due to the lack of early detection and control of chronic diseases, thus accelerating the development of CKD in this age group (Raman et al., 2018). This will certainly affect the self-care ability of elderly patients, supported by research that shows that older age has a negative correlation with self-care ability, this is because elderly patients have greater challenges in continuing self-care (Avanji et al., 2021). Other research shows that elderly CKD patients have physical and cognitive limitations, and lack of social support is a major obstacle to self-care for elderly patients (Bowling et al., 2017).

Gender

The results showed that respondents with female gender were the group that experienced more CKD and underwent hemodialysis. This is in line with several studies that show that globally more women experience CKD than men, but some of them receive kidney replacement therapy or hemodialysis (Torres et al., 2024). Other studies have shown that women experience more CKD than men due to biological factors such as the hormone estrogen. Other studies also show that most CKD patients are women (Tong et al., 2022). This will certainly affect the patient's self-care abilities supported by other studies which show that the self-care abilities of women and men have similar abilities, but female patients report lower quality of life, with lower scores on symptoms, physical function, pain, and overall health. Other studies have also revealed that women tend to be more organized and conscientious in adhering to lifestyle changes, medication, and health monitoring. However, women also often suppress their symptoms and are reluctant to burden the family which can lead to isolation and difficulty in effectively managing the disease (Lerma et al., 2021).

Education Level

The results showed that most respondents of CKD patients undergoing hemodialysis had a secondary education level, such as junior high school, high school, MA, or SMK. Other studies have also shown that many CKD patients have a high school education, a lower level of education can limit access to information and understanding of the prevention and management of CKD disease (Prasetya et al., 2022). Other studies have also shown that many patients who experience CKD and undergo hemodialysis with lower levels of education can affect patients' understanding of disease management and adherence to treatment (Lenggogeni et al., 2021). This certainly affects the patient's self-care ability, supported by other studies which also show that education levels lower than college such as high school and lower than high school show poor self-care behavior (Kao et al., 2023).

Other studies have also shown that hemodialysis patients with low education levels are more likely to have lower patient activation scores. Patient activation reflects the extent to which individuals are actively involved in their health care (Mirmazhari et al., 2022).

Length of hemodialysis treatment

The results showed that most respondents of CKD patients who underwent hemodialysis had done so within a period of 1 to 5 years, compared to those who had undergone more than 5 years. This is in line with several other studies that show many patients who undergo hemodialysis for 1-3 years and in this group have a good quality of life (Nugraha et al., 2023). This will certainly affect the patient's self-care ability, which is supported by research showing that self-care behavior and adherence to treatment are influenced by various factors, including HD duration. Patients with shorter HD duration (1-5 years) tend to have better self-care behaviors and treatment adherence compared to those who undergo HD for a longer period of time. Other studies have also shown that patients with shorter duration of hemodialysis tend to have better self-care behaviors and treatment adherence compared to those with longer duration who tend to decrease the likelihood of chronic fatigue and decreased motivation (Kim & Cho, 2021).

Health care transition

The results of the study show that most respondents with CKD undergoing hemodialysis were in the "health care transition" phase with a good rating. These findings are consistent with previous studies which, although not specifically examining CKD patients, highlighted other chronic diseases. The study shows that effective care transition can be achieved through good communication between patients and healthcare providers, facilitated by caregiver or family support and a patient-centered care approach (Joo & Liu, 2022). In addition, another study that focused on the transition process from hospital care to follow-up care showed that coordination between healthcare providers and patient education can improve transition activity scores, strengthen coordination between healthcare professionals, and increase patient satisfaction (Jones et al., 2019b).

Self-Care

The results of the study show that most CKD patients undergoing hemodialysis have good self-care abilities. These findings are consistent with the research by Hidayati and Wahyuni (2012), which revealed that hemodialysis patients have a good understanding of the importance of self-care, such as adherence to the hemodialysis schedule, regulation of fluid intake and diet, and monitoring of symptoms that arise. This understanding is formed through personal experience and education obtained during the treatment process. In addition, another study by Hasan et al. (2022) shows that self-care practices in CKD patients are influenced by various factors, including social support, education level, and access to health information. These factors play an important role in shaping effective self-care behaviors, which can ultimately reduce the risk of complications and improve patient clinical outcomes.

Relationship Health care transition and Self-care

This study shows that most CKD patients undergoing hemodialysis are in a good health care transition, and have good self-care skills. This finding indicates that an optimal care transition process plays a role in supporting patients' ability to care for themselves independently and effectively in the context of chronic illness. This result is in line with the findings of (Joo & Liu, 2022), who emphasized that effective care transitions supported by good communication between patients and health care providers, family involvement, and patient-centered care approaches contribute to long-term care success. Similarly, Jones et al. reported that patient education and coordination across healthcare providers during the transition process can improve patient engagement and overall quality of care. The good self-care ability in this study is supported by the findings of (Hidayati & Wahyuni, 2012), which showed that CKD patients were able to carry out self-care practices through an understanding of the hemodialysis schedule, diet and fluid management, and symptom monitoring. This understanding is formed from a combination of education received and direct experience during therapy. In addition, factors such as social support, education level, and access to health information, as described by (Hasan et al., 2022), also strengthen effective self-care practices.

The results showed that there was a highly significant relationship between health care transition and self-care in respondents with chronic kidney disease undergoing hemodialysis. Respondents with good health care transitions tend to have good self-care skills. CKD is a chronic disease that requires long-term care. Other studies

have shown a significant positive effect on self-care in patients with chronic kidney disease undergoing hemodialysis, where the higher the level of self-care possessed by patients, the more optimal their ability to manage their health conditions (Kallifah et al., 2024).

Other studies have also shown that in the context of health care transition from health to illness, patients need understanding, skills, and support to be able to carry out care independently. A good transition of care is strongly influenced by effective communication between patients and healthcare providers. However, the reality is that patients often experience difficulties in communicating with various providers, which can lead to information confusion and poor coordination of care. Self-management is also a challenge, especially as many patients feel unprepared to manage their health conditions independently after discharge, especially if they do not receive adequate training or support. In addition, sudden changes in routine and environment during the transition can cause significant emotional stress for both patients and their families (Joo & Liu, 2022).

Communication with medical personnel is an important foundation in improving self-care monitoring and self-care management skills. Through good communication, CKD patients can obtain accurate information about signs and symptoms of the disease, understand the right time to seek medical assistance, and receive the necessary direction in managing changes in their health condition. This strengthens the role of medical personnel in assisting the health care transition process by assessing the extent to which patients are able to carry out self-management (Ferris et al., 2015).

Knowledge of the disease is directly related to all components of self-care, especially self-care maintenance. With adequate knowledge, patients can understand the importance of maintaining a healthy lifestyle, complying with medication, and carrying out daily routines that support the stability of their chronic conditions. This knowledge can be obtained from various sources, both formal and informal, and plays an important role in shaping positive self-care attitudes and behaviors (Trisnawati & Fajarsari, 2020).

In the self-care theory commonly used in the field of nursing, self-management is included as one of the components of self-care, along with self-care maintenance and self-care monitoring. In the context of self-care management, patients are required to be able to make the right decisions regarding medication, diet, and communication with health services. This ability is crucial during the health care transition process, as it helps CKD patients become more independent and able to adapt to changing care needs, including the utilization of resources such as insurance and pharmacy (Ferris et al., 2015).

It is important for medical personnel to assess the extent of the health care transition process, in order to identify the patient's self-management skills appropriately (Ferris et al., 2015). Patients' knowledge about their illness is also a significant supporting factor, because with adequate understanding, patients can make better decisions in responding to symptoms and undergoing appropriate treatment (Trisnawati & Fajarsari, 2020). Thus, knowledge, communication with medical personnel, and self-management are important elements in supporting effective care transitions, which ultimately improve self-care skills in CKD patients undergoing hemodialysis.

The implementation of the health care transition process using the six core elements approach shows that self-care is an important part of this process (Jones et al., 2019). A well-planned care transition can help CKD patients undergoing hemodialysis become better prepared for self-care. One important component of health care transition is self-management, which includes the ability to make decisions regarding medication, fulfillment of drug prescriptions, adherence to diet and therapy, understanding health insurance, and communication with medical personnel. On the other hand, there are other studies that show that health care transition does not always have a positive impact on the self-care of CKD patients undergoing dialysis, especially if the transition process is not carried out with attention to emotional readiness, education, and active patient involvement (Liu et al., 2023).

The uniqueness of this study lies in the explicit focus on the relationship between health care transition and self-care ability in CKD patients undergoing hemodialysis, which is still limited in the literature. However, limitations of this study include the limited scope of the sample to one healthcare facility and the possibility of subjectivity bias from respondents' self-report. This study indicates the importance of strengthening the structured and sustainable aspects of care transitions as part of efforts to improve self-care skills in patients

with CKD. One of the limitations of this study is the difference in the level of understanding of respondents to the statements in the questionnaire. To overcome this, the researcher provided additional explanations so that respondents could understand the meaning of the statements more easily. In addition, this study did not include marital status as an inclusion criterion, so there were some statements in the self-care questionnaire that were less relevant to some respondents. This limitation needs to be considered in the interpretation of the results and be a consideration for future research.

CONCLUSION

Based on the results of research on the relationship between health care transition and self-care in end-stage renal failure patients undergoing hemodialysis, it was found that there is a significant relationship between the two variables. Most respondents had a good level of health care transition and self-care abilities that were also in the good category. This indicates that the better the healthcare transition process received by patients, the better their ability to perform self-care independently during hemodialysis. Thus, it can be concluded that healthcare transition plays an important role in improving self-care in end-stage renal disease patients, so healthcare workers need to strengthen transition support and education to maintain and improve patient independence. Healthcare professionals need to strengthen the healthcare transition process through education and ongoing support so that patients become more independent in their self-care. Patients and their families are expected to actively participate in the transition process. Further research is recommended to explore other factors that influence self-care in hemodialysis patients.

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