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Patient Satisfaction with Hemodialysis Nurses' Care: An Interaction Model of Client Behavior Perspective

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Abstract

Introduction: Hemodialysis nurses' competence and interpersonal skills are central to patient satisfaction, yet local evidence remains limited. Objective: This study assessed patient satisfaction with nursing care in the Hemodialysis Unit of a tertiary hospital in Zamboanga City, Philippines, and examined its association with selected patient characteristics, guided by the Interaction Model of Client Health Behavior. Methods: A quantitative descriptive-correlational design was conducted among 80 randomly selected adult hemodialysis patients using an adapted Patient Satisfaction with Nursing Care Scale. Descriptive and inferential statistics were applied. Results: Overall satisfaction was high (M = 1.61, SD = 0.66), with professional-technical competence rated highest, followed by affective support and health information. Lower ratings were observed for privacy, discharge instructions, and shared decision-making. Most demographic variables were not significantly associated with satisfaction. Marital status showed positive associations across all domains, while age was positively related to decisional control and technical competence. Higher educational attainment was negatively associated with decisional control. Conclusion: Patients reported high satisfaction with hemodialysis nursing care. Improving privacy, discharge education, and shared decision-making may further enhance patient-centered care.

Keywords:
Interaction Model of Client Health Behavior, Hemodialysis Nursing Care, Patient Satisfaction, Patient Experience

INTRODUCTION

Patient satisfaction in hemodialysis (HD) settings is widely recognized as a key indicator of healthcare quality and an important predictor of patient outcomes. Helmy et al. (2022) found that patients generally express high satisfaction with nursing care, underscoring the positive influence of effective nurse-patient relationships. However,

satisfaction is a multidimensional construct shaped by nurses' professional competence, communication skills, attitudes, facility conditions, and the demographic and clinical characteristics of patients (Nuairi et al., 2022). Recent literature from Indonesia reinforces this complexity; a systematic review by Nurhayati et al. (2026) identified caring behavior, specifically empathy and emotional support, and therapeutic communication as the two primary determinants of patient satisfaction in the region. Furthermore, studies in Indonesia indicate that while patients may rate tangible aspects of care (such as facility cleanliness) highly, their satisfaction with interpersonal dimensions, such as responsiveness and assurance, can vary significantly based on cultural expectations (Pakpahan, 2023). Understanding these factors is essential for strengthening nursing practice, promoting patient well-being, and developing evidence-based, patient-centered interventions.

Hemodialysis nurses are essential members of the nephrology care team, responsible for delivering high-quality, safe, and patient-centered care to individuals with kidney failure. Their duties encompass complex technical procedures alongside comprehensive patient education and management across the treatment continuum. They manage care across three critical stages: pre-dialysis, focusing on patient assessment and vascular access preparation; during dialysis, involving continuous patient monitoring, equipment operation, and complication management; and post-dialysis, where they educate patients on home care, self-management, and recovery to optimize outcomes (Takham & Srisook, 2025).

Because HD patients undergo treatment for several hours per session, multiple times each week, sustained nurse-patient interaction becomes an essential component of their care experience. In the Philippine context, this interaction often transcends a purely clinical dynamic. Santos et al. (2024) observed that in local dialysis settings, the nurse-patient bond frequently evolves into a family-like relationship, where patients perceive nurses' strictness regarding fluid and dietary restrictions not as hostility, but as a distinct form of caring and discipline essential for their survival. These repeated encounters enable nurses to establish therapeutic relationships that meaningfully shape patients' perceptions of care quality and overall satisfaction.

However, inconsistencies exist regarding the primary drivers of satisfaction when comparing public and private institutions. A large-scale study (Monshi et al., 2026) involving over 5,000 patients in Saudi Arabia reported significantly higher satisfaction scores in private facilities (90.41%) compared to governmental hospitals (88.57%), attributing the difference to superior tangibles and resource availability. Conversely, a study in Turkey (Saygili et al., 2025) utilizing the SERVQUAL scale found a negative gap between patient expectations and perceived service quality, particularly in the dimensions of Reliability and Assurance, regardless of the facility type. This suggests that while private facilities may offer better infrastructure, the interpersonal reliability of care remains a universal friction point.

Furthermore, demographic predictors of satisfaction remain a subject of debate. While the recent Saudi study established a statistically significant link where female and pediatric patients reported higher satisfaction than males and young adults (Frontiers in Nephrology, 2026), other regional studies suggest that clinical factors, such as the duration of dialysis and frequency of complications, are more potent predictors than age or gender alone. This highlights a limitation in current research: studies often treat demographic variables as static, failing to account for how cultural context (e.g., the role of family support in Southeast Asia) mediates these variables.

Despite substantial international and regional research on HD patient satisfaction, notable gaps remain in the specific context of Zamboanga City. While recent Philippine studies have explored caring experiences in Luzon (e.g., Santos et al., 2024) or the challenges faced by novice nurses in Davao (Cueva & Migallos, 2025), empirical studies examining how nursing care directly influences HD patients' satisfaction in Zamboanga Peninsula are limited. Addressing this gap is vital for generating context-specific insights that can inform clinical practice and guide local healthcare policy.

Guided by the Interaction Model of Client Health Behavior (IMCHB) developed by Helen Cox in 1982, this study examines how selected patient characteristics, demographic factors (age, gender, marital status), social influences (ethnicity, religion, education), and healthcare experiences (frequency and duration of dialysis), relate to their perceptions of nursing care. It further evaluates four dimensions of client–professional interaction: affective support, health information, decisional control, and professional–technical competence. The central outcome of interest is patient satisfaction with hemodialysis nursing care, recognizing the pivotal role nurses play in shaping the overall HD experience.

Using the IMCHB, this study aims to determine the level of patient satisfaction with the care provided by HD nurses at a tertiary hospital in Zamboanga City, Philippines. Specifically, it seeks to answer the following questions:

1. What are the characteristics of HD patients at this tertiary hospital?
2. What is the level of patient satisfaction with the care provided by HD nurses at this tertiary hospital?
3. Is there a significant relationship between patients' demographic characteristics, social influences, healthcare experiences and their level of satisfaction with nursing care?

METHODS

1. Design

A descriptive correlational research design to determine patient satisfaction with the care provided by HD nurses at this tertiary hospital and to examine its relationship with demographic variables at a single point in time.

2. Population and Sampling Technique

The study was conducted in the HD Unit of a tertiary hospital located in Zamboanga City, Philippines. The study population consisted of adult patients, aged 18 years and older, who were registered for HD treatment at this unit.

A sample size of 80 participants was determined from an estimated population of 106 patients using a 5% margin of error, 95% confidence level, and 50% response distribution. The participants were selected using a simple random sampling method by recruiting every third patient on the list across all three dialysis shifts.

To ensure that participants had adequate experience with nursing care, the study included patients who had been undergoing HD treatment for at least three months and were willing to provide informed consent. Patients with cognitive impairments, those with conditions that significantly hindered their ability to understand or communicate, and those in critical health conditions were excluded from the study to maintain data accuracy and reliability.

3. Instruments

The data were collected using the structured Patient Satisfaction with Nursing Care Quality Questionnaire (PSNCQQ), adapted by Karaca and Durna (2019) from Laschinger et al.'s (2005) original instrument. In Laschinger et al.'s original validation, inter-item correlation coefficients ranged from 0.61 to 0.89, indicating strong relationships among items. The instrument demonstrated excellent internal consistency, with a Cronbach's alpha of 0.97. In Karaca and Durna's adaptation study, the coefficients for correlations between average PSNCQQ item scores ranged from 0.80 to 0.89, which demonstrated an appropriate level of reliability. The Cronbach's alpha for the PSNCQQ was 0.98, indicating excellent internal consistency.

The questionnaire consists of 19 items that were carefully analyzed and categorized into the four domains of IMCHB. It also included a section for collecting demographic information such as gender, age, marital status, ethnicity, religion, educational attainment, frequency of dialysis sessions per week, and duration of treatment in months or years.

For this study, face validity was ensured through the evaluation of three experts in the field. Two validators were registered nurses and one was a psychologist, all of whom held master's degrees in their respective disciplines. Two experts were from the academe, while one was a practicing clinician in a hospital setting. Their diverse qualifications and professional experiences collectively strengthened the assessment process, ensuring that the questionnaire was relevant, clear, and appropriate.

To determine its reliability, a pilot study was conducted with ten participants. The pilot testing facilitated the identification of potential inconsistencies or ambiguities in the questionnaire, which were addressed prior to the main data collection. The instrument obtained a Cronbach's alpha coefficient of 0.926, indicating excellent internal consistency reliability.

4. Data Collection Process

The process began with obtaining the necessary ethical approval from the hospital's Ethics Review Board, ensuring that the study adheres to ethical standards and respects patient rights and privacy.

Once ethical approval had been secured, the researcher proceeded to recruit participants from the HD unit of this hospital. The researcher initially informed potential participants about the study. Interested participants were then provided with detailed information about the study's purpose.

After obtaining informed consent, participants were asked to complete the questionnaire, which took approximately 15 minutes to answer. The survey was administered in a manner that accommodated participants' health conditions and treatment schedules, ensuring minimal disruption to their dialysis sessions. The researcher ensured that participants fully understood each question and provided clarification when necessary to facilitate accurate, consistent, and complete responses.

Data collection was conducted from July to September 2025, with data gathered two to three times per week and an average of 15 participants surveyed per week.

5. Data Analysis

The data were analyzed using descriptive statistics to map out the basic features of the data. This included calculating means, standard deviations, and frequencies, providing a clear picture of the central tendencies and variability within the patient satisfaction scores and demographic variables.

To examine the relationship between variables, the correlation analysis was conducted in accordance with the study objectives and hypotheses. The Pearson product–moment correlation coefficient (r) was used to assess the strength and direction of linear relationships between the overall patient satisfaction score and continuous or numerically coded demographic variables (e.g., age, duration of hemodialysis, educational level). For dichotomous variables such as sex, the point-biserial correlation was applied. Pearson's r assumes linearity, approximate normality, independence of observations, and absence of significant outliers.

All analyses were conducted at a significance level of .05 using the Statistical Package for the Social Sciences (SPSS).

6. Research Ethics

Ethics clearance was obtained from the hospital's Ethics Review Board with protocol number XXXX-ERB-2024-41.

RESULTS

1. Characteristics of Hemodialysis Patients at ZCMC

The study included 80 hemodialysis patients (Table 1), with an almost equal gender distribution. Most respondents were middle-aged to older adults, predominantly married or living with a partner. The majority identified as Zamboangueño or Bisaya and were Roman Catholic. Educational attainment was generally at the college level, with only a small proportion holding graduate degrees. Most patients underwent hemodialysis three times per week and had been receiving treatment for three years or longer, indicating substantial exposure to nursing care services.

2. Patient Satisfaction with Hemodialysis Nurses' Care

As shown in Table 2, patients reported a generally high level of satisfaction with nursing care (overall M = 1.61, SD = 0.66). Among the four domains, Professional–Technical Competencies received the highest rating, reflecting strong appreciation of nurses' clinical expertise, responsiveness, and coordination of care. Affective Support, Health Information, and Decisional Control were also rated highly, indicating patients valued nurses' empathy, communication, and involvement in care decisions. Slightly lower ratings were observed for environmental factors, discharge instructions (M = 1.75, SD = 0.70), recognition of patient opinions (M = 1.80, SD = 0.66) and teamwork (M = 1.88, SD = 0.86), highlighting areas for improvement in privacy, patient education, shared decision-making, and interdisciplinary collaboration.

3. Relationship Between Patient Satisfaction and Demographics, Social Influence, and Health Care Experience

Correlation analysis (Table 3) revealed that marital status showed consistent, statistically significant positive relationships with all satisfaction domains and total satisfaction (r = 0.305, p = 0.006), indicating a medium effect size. Age demonstrated modest positive associations, particularly with decisional control, suggesting greater satisfaction among older patients. Educational attainment was negatively correlated with decisional control (r = −0.254, p = 0.028), representing a small effect size, indicating that patients with higher education reported lower satisfaction with involvement in care decisions. Dialysis session frequency demonstrated a near-significant positive correlation with Professional–Technical Competencies (r = 0.213, p = 0.057), suggesting a small effect whereby more frequent sessions may slightly enhance perceptions of nurses' technical competence.

Overall, these results indicate that marital status is the most consistent predictor of patient satisfaction, while age and educational attainment show smaller but meaningful associations with specific satisfaction domains.

Table 1. Demographic Characteristics of Hemodialysis Patients at the Tertiary Hospital (n = 80)

Variables			Frequency (n)	Percentage
Demographics:	Gender	Male	42	52.5%
		Female	38	47.5%
	Age Group	19–28	11	13.75%
		29–38	13	16.25%
		39–48	16	20.0%
		49–58	16	20.0%
		59–68	19	23.75%
		69–78	4	5.0%
		79–88	1	1.25%
	Marital Status	Single	28	35.0%
		Married/Cohabiting	46	57.5%
		Separated/Divorced	3	3.75%
		Widowed	3	3.75%
Social Influences:	Ethnicity	Cebuano	3	3.75%
		Tagalog	5	6.25%
		Ilocano	5	6.25%
		Tausug	7	8.75%
		Zamboangueno	37	46.25%
		Maranao	2	2.5%
		Bisaya	20	25.0%
		Others	1	1.25%
	Religion	Roman Catholic	60	75.0%

Variables			Frequency (n)	Percentage
		Islam	13	16.25%
		Protestant	1	1.25%
		Others	6	7.5%
	Educational Attainment	Grade School Level	13	16.25%
		High School Level	30	37.5%
		College Level	34	42.5%
		Graduate Level	3	3.75%
Health care experiences:	Sessions/ week	Twice	30	37.5%
		3 times	50	62.5%
	Treatment duration	3 months	5	6.25%
		6 months	5	6.25%
		1–2 years	11	13.75%
		3–5 years	27	33.75%
		6–10 years	27	33.75%
		≥11 years	5	6.25%
	Total		**80**	**100%**

Table 2. Patient Satisfaction Score with Hemodialysis Nurses' Care

Variables	Mean	SD	Description
Affective Support:	1.62	0.68	Strongly Satisfied
1. Concern and caring by nurses: Courtesy and respect were given, friendliness and kindness	1.34	0.50	Strongly Satisfied
2. Attention of nurses to your condition: How often nurses checked on you and how well they kept track of how you were doing	1.50	0.60	Strongly Satisfied
3. The daily routine of the nurses: How well they adjusted their schedules to your needs	1.39	0.54	Strongly Satisfied
4. Helpfulness: Ability of the nurses to make you comfortable and reassure you	1.55	0.50	Strongly Satisfied
5. Restful atmosphere provided by nurses: Amount of peace and quiet	1.93	0.74	Somewhat Satisfied
6. Privacy: Maintenance of your privacy by nurses	2.04	0.80	Somewhat Satisfied
Health Information:	1.64	0.63	Strongly Satisfied
7. Information you were given: How clear and complete were the nurses' explanations about tests, treatments, and what to expect?	1.61	0.56	Strongly Satisfied
8. Instructions: How well nurses explained how to prepare for tests and procedures	1.74	0.70	Strongly Satisfied
9. Ease of getting information: Willingness of nurses to answer your questions	1.53	0.60	Strongly Satisfied
10. Information given by nurses: How well nurses communicated with patients, families, and doctors	1.49	0.55	Strongly Satisfied
11. Informing family or friends: How well the nurses kept them informed about your condition and needs	1.70	0.60	Strongly Satisfied
12. Discharge instructions: How clearly and completely the nurses tell you what to do and what to expect when you left the hospital?	1.75	0.70	Strongly Satisfied
Decisional Control:	1.65	0.63	Strongly Satisfied
13. Recognition of your opinions: How much do nurses ask you what you think is important and give you choices?	1.80	0.66	Somewhat Satisfied
14. Involving family or friends in your care: How much they were allowed to help in your care	1.70	0.60	Strongly Satisfied
15. Consideration of your needs: Willingness of the nurses to be flexible in meeting your needs	1.44	0.57	Strongly Satisfied
Professional-Technical Competencies:	1.54	0.71	Strongly Satisfied
16. Skill and competence of nurses: How well things were done, like giving medicine and handling blood products	1.46	0.69	Strongly Satisfied
17. Nursing staff response to your calls: How quick they were to help	1.43	0.55	Strongly Satisfied
18. Coordination of care: The teamwork between nurses and other hospital staff who took care of you	1.88	0.86	Somewhat Satisfied
19. Coordination of care after discharge: Nurses' efforts to providing for your needs after you leave the hospital	1.39	0.58	Strongly Satisfied

Variables	Mean	SD	Description
Overall Satisfaction	**1.61**	**0.66**	**Strongly Satisfied**

Criteria: 1.00-1.74 = Strongly Satisfied, 1.75-2.49 = Somewhat Satisfied, 2.50-3.24 = Somewhat Dissatisfied, 3.25-4.00=Very Dissatisfied.

Table 3. Correlation Between Patients' Satisfaction Scores and Demographic Characteristics, Social Influence and Previous Health Care Experience

Variables	Affective Support	Health Information	Decisional Control	Professional-Technical Competencies	Total Satisfaction
Gender	0.160 (p = 0.149)	0.114 (p = 0.314)	0.162 (p = 0.152)	-0.096 (p = 0.400)	0.099 (p = 0.383)
Age (exact)	0.151 (p = 0.180)	0.151 (p = 0.182)	0.230* (p = 0.040)	0.215 (p = 0.056)	0.215 (p = 0.055)
Marital Status	0.257* (p = 0.021)	0.233* (p = 0.037)	0.271* (p = 0.015)	0.307* (p = 0.006)	0.305* (p = 0.006)
Ethnicity	-0.005 (p = 0.962)	0.041 (p = 0.781)	0.027 (p = 0.813)	0.043 (p = 0.703)	0.031 (p = 0.786)
Religion	-0.008 (p = 0.944)	-0.005 (p = 0.965)	0.031 (p = 0.784)	0.026 (p = 0.821)	0.014 (p = 0.905)
Educational Attainment	-0.174 (p = 0.123)	-0.131 (p = 0.247)	-0.254* (p = 0.028)	-0.082 (p = 0.470)	-0.185 (p = 0.100)
Session Frequency	0.086 (p = 0.451)	-0.006 (p = 0.958)	0.073 (p = 0.518)	0.213 (p = 0.057)	0.104 (p = 0.359)
Treatment Duration	0.202 (p = 0.072)	0.122 (p = 0.281)	0.105 (p = 0.356)	0.195 (p = 0.084)	0.176 (p = 0.119)

r = correlation coefficient; p = p-value.
* Significant at the 0.05 level ($p < 0.05$).

DISCUSSION

This study examined patient satisfaction with the nursing care provided in the hemodialysis (HD) unit of a tertiary hospital in Zamboanga City, Philippines, guided by Cox's Interaction Model of Client Health Behavior (IMCHB). The findings contribute context-specific evidence to the limited body of Philippine research on HD patient satisfaction, offering insights relevant to nursing practice.

1. Interpretation of Main Findings

Overall, HD patients at the hospital reported high satisfaction across all four IMCHB domains, suggesting that nurses demonstrate strong interpersonal skills, effective communication, and high levels of clinical competency. These results mirror international literature highlighting the central role of nurses' professional competence and relational skills in delivering high-quality HD care (Helmy et al., 2022; Koon, 2020).

Among the four domains, Professional-Technical Competencies received the highest satisfaction ratings. This finding is expected in HD settings, where patients frequently emphasize nurses' technical accuracy, vigilance, and timeliness due to the complexity and inherent risks associated with dialysis procedures (Thomas, 2019). For example, consistent monitoring of vascular access and rapid response to complications such as hypotension are critical elements of safe HD practice, directly reflecting this technical competency.

However, slightly lower scores reported for the Teamwork domain indicate clear opportunities to strengthen interdisciplinary coordination. Improving seamless communication and collaboration among the nursing staff, nephrologists, dietitians, and social workers is an important factor in ensuring comprehensive and uninterrupted HD care (Nuairi et al., 2022).

The domain of Affective Support also scored highly, yet patients were less satisfied with environmental factors such as privacy and the availability of a restful atmosphere, which is similar to other studies (Koon, 2020; Nuairi et al., 2022). This suggests that environmental and structural limitations, rather than deficiencies in nursing performance, often diminish patient satisfaction. Addressing these concerns may involve optimizing unit layout, reducing noise levels, or implementing simple privacy measures such as curtains or room dividers.

Health Information was rated favorably, but discharge instructions received lower scores. This pattern indicates that while nurses communicate effectively during treatment, patient education at the end of sessions may be insufficient. Educational interventions are known to increase kidney-related knowledge (Campbell et al., 2022). Therefore, strengthening discharge teaching, for instance, by using checklists, visual guides, or summarized instructions, could significantly improve patients'

understanding of self-care and treatment adherence (Galmarini et al., 2024).

Finally, although Decisional Control was positively rated, patients expressed lower satisfaction regarding how well their opinions were recognized in care decisions. This highlights the need to reinforce shared decision-making practices, a core element of patient-centered care emphasized in the IMCHB framework (Luo et al., 2021; Ma et al., 2025).

2. Relationship Between Satisfaction and Patient Characteristics

Marital status emerged as the strongest and most consistent predictor of patient satisfaction. Married or cohabiting patients reported higher satisfaction, likely due to stronger social and emotional support systems that help them navigate the demands of chronic HD treatment. This is consistent with prior research showing that supportive relationships enhance patients' experiences of healthcare interactions (Guan et al., 2021; Khan et al., 2022; Terkes & Bedir, 2025). Spouses often provide emotional reassurance, help interpret medical information, and participate in decision-making. Similar studies (Alatawi et al., 2024; Sułkowski et al., 2024) emphasize the importance of family involvement in chronic kidney disease management. These findings suggest that encouraging family participation, such as involving significant others during teaching sessions or care planning meetings, may strengthen emotional support and improve overall satisfaction.

Age also showed significant associations with satisfaction, with older patients reporting higher levels of satisfaction, particularly regarding decisional control and technical competence. Older adults often demonstrate greater trust in healthcare providers and fewer expectations for autonomy, contributing to more favorable evaluations (de Mello et al., 2025). They may also value collaborative decision-making more deeply or possess greater health literacy based on long-term illness experience (Bastable, 2017). These findings underscore the importance of maintaining patient-centered practices that foster engagement and respect patients' preferences across age groups.

In contrast, educational attainment showed a negative association with satisfaction in the Decisional Control domain. Patients with higher education levels may expect more autonomy, detailed explanations, and active participation in treatment planning. When these expectations are not met, dissatisfaction may occur. Addressing this gap may require tailored communication strategies, such as using teach-back methods, providing more detailed informational materials, or holding brief shared decision-making discussions to better align care with patients' expectations (Lee & Cho, 2025).

Although not statistically significant, the near-significant relationship between dialysis frequency and perceived technical competence suggests that patients who interact more frequently with nurses have more opportunities to observe and appreciate their skills. Prior research indicates that consistent interactions foster stronger therapeutic relationships, ultimately enhancing satisfaction (Hreńczuk, 2021). Patients dialyzing three times weekly, for example, may develop familiarity and trust through repeated exposure to nurses' technical and interpersonal competencies.

Taken together, these findings provide important insights into the clinical and contextual factors influencing patient satisfaction in hemodialysis settings. This study has several notable strengths. First, it utilized a validated and reliable instrument, the Patient Satisfaction with Nursing Care Quality Questionnaire, which was appropriately adapted to the IMCHB framework, ensuring strong conceptual alignment and measurement quality. The use of simple random sampling across all dialysis shifts further strengthened the representativeness of the sample, reducing selection bias and enhancing the credibility of the findings. Additionally, by focusing on an understudied setting, this research addresses a significant gap in Philippine hemodialysis patient-satisfaction literature and provides context-specific insights that may inform local nursing practice.

Implications for Practice and Future Research

The findings of this study have important implications for nursing practice and future research. In clinical practice, HD units may enhance patient satisfaction by strengthening shared decision-making and individualized care planning, particularly for younger or more educated patients, through strategies such as teach-back methods and brief participatory discussions. Improving environmental conditions, including privacy measures and noise reduction, is also essential. Additionally, discharge education can be optimized using structured tools such as checklists, visual aids, and summarized instructions. Strengthening interdisciplinary collaboration among nurses, physicians, dietitians, and social workers is critical to ensuring coordinated care. Furthermore, encouraging family involvement during education and care planning may enhance emotional and social support for patients.

For future research, studies should explore additional psychosocial and environmental factors influencing patient satisfaction, including social support, coping mechanisms, and institutional characteristics. Qualitative approaches may also provide deeper insights into patient experiences in HD settings.

Limitations

Despite the strengths, several limitations should be acknowledged. The study relied on self-reported data, which may be susceptible to social desirability bias and subjective interpretation. Its conduct within a single HD unit also limits the generalizability of findings to other institutions with different staffing patterns, patient populations, or

structural conditions. Although the results point to the potential influence of environmental and institutional factors, these elements were not directly measured in the study. Future research should therefore incorporate qualitative approaches to capture nuanced patient experiences, examine unit-level factors such as nurse-patient ratios and workflow, and explore additional psychosocial variables including perceived social support, coping styles, and cultural expectations that may shape satisfaction within the Filipino HD context.

CONCLUSION

This study demonstrates that HD patients at the tertiary hospital involved in this study are generally highly satisfied with nursing care, especially in professional–technical competencies and affective support. However, opportunities exist to strengthen patient privacy, environmental comfort, discharge education, and shared decision-making. Understanding the demographic and clinical factors associated with satisfaction can help inform more responsive, patient-centered care in HD settings. By addressing both interpersonal and system-level factors, HD units can further improve the quality of nursing care and overall patient experience.

Author Contributions

Conceptualization: Hazel Anne R. Cinco, Rica Rose May A. Rubio; Methodology: Rica Rose May A. Rubio, Hazel Anne R. Cinco; Data Collection: Hazel Anne R. Cinco; Analysis: Rica Rose May A. Rubio; Writing – Original Draft: Hazel Anne R. Cinco; Writing – Review & Editing: Rica Rose May A. Rubio.

Data Availability Statement

The data supporting the findings of this study are available from the corresponding author upon reasonable request.

Conflict of Interest

The authors declare no conflicts of interest.

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REFERENCES

Alatawi, A. A., Alaamri, M., & Almutary, H. (2024). Social support and adherence to treatment regimens among patients undergoing hemodialysis. *Healthcare, 12*(19), 1958. https://doi.org/10.3390/healthcare12191958

Bastable, S. B. (2017). *Nurse as educator: Principles of teaching and learning for nursing practice* (5th ed.). Jones & Bartlett Learning.

Campbell, Z. C., Dawson, J. K., Kirkendall, S. M., McCaffery, K. J., Jansen, J., Campbell, K. L., Lee, V. W., & Webster, A. C. (2022). Interventions for improving health literacy in people with chronic kidney disease. *Cochrane Database of Systematic Reviews, 12*(12), CD012026. https://doi.org/10.1002/14651858.CD012026.pub2

Cox, C. L. (1982). An interaction model of client health behavior: Theoretical prescription for nursing. *Advances in Nursing Science, 5*(1), 41–56. https://doi.org/10.1097/00012272-198210000-00007

Cueva, A. G., & Migallos, S. F. (2025). Cherubims in RDU: Experiences of novice nurses in renal dialysis unit among tertiary hospitals in Davao City. *International Journal of Latest Technology in Engineering Management & Applied Science, 14*(4), 438–456. https://doi.org/10.51583/IJLTEMAS.2025.140400045

de Mello, A. L. S. F., Engel, F. D., Lanzoni, G. M. de M., Cechinel-Peiter, C., Costa, D. G., dos Santos, J. L. G., Erdmann, A. L., & Backman, C. (2025). Association between age and patients' perceptions of safety in hospitals during the COVID-19 pandemic: A cross-sectional study. *Clinical Epidemiology and Global Health, 31*, 101869. https://doi.org/10.1016/j.cegh.2024.101869

Galmarini, E., Marciano, L., & Schulz, P. J. (2024). The effectiveness of visual-based interventions on health literacy in health care: A systematic review and meta-analysis. *BMC Health Services Research, 24*(1), 718. https://doi.org/10.1186/s12913-024-11138-1

Guan, M., Han, J. Y., Shah, D. V., & Gustafson, D. H. (2021). Exploring the role of social support in promoting patient participation in health care among women with breast cancer. *Health Communication, 36*(13), 1581–1589. https://doi.org/10.1080/10410236.2020.1773704

Helmy, N. H., Hussein, A., Kamal, M., Minshawy, O. E., & Wahsh, E. A. (2022). Hemodialysis

patients' satisfaction with dialysis care: A cross-sectional prospective study conducted in a non-profitable care facility, Minia, Egypt. *BMC Nephrology, 23*(1). https://doi.org/10.1186/s12882-022-03010-3

Hreńczuk, M. (2021). Therapeutic relationship nurse–patient in hemodialysis therapy. *Nursing Forum, 56*(3), 579–586. https://doi.org/10.1111/nuf.12590

Karaca, A., & Durna, Z. (2019). Patient satisfaction with the quality of nursing care. *Nursing Open, 6*, 535–545. https://doi.org/10.1002/nop2.237

Khan, M. I., Rahman, Z. U., Saleh, M. A., & Khan, S. U. Z. (2022). Social media and social support: A framework for patient satisfaction in healthcare. *Informatics, 9*(1), 22. https://doi.org/10.3390/informatics9010022

Koon, J. (2020). Staff nurses' perception of the hemodialysis unit as practice environment and patients' perception of nurse caring behaviors and their level of satisfaction. *Journal of Health and Caring Sciences, 2*(1), 4–18.

Laschinger, H. S., Hall, L. M., Pedersen, C., & Almost, J. (2005). A psychometric analysis of the patient satisfaction with nursing care quality questionnaire. *Journal of Nursing Care Quality, 20*(3), 220–230. https://doi.org/10.1097/00001786-200507000-00006

Lee, H., & Cho, M. K. (2025). Effects of shared decision-making, health literacy, and self-care knowledge on self-care behavior among hemodialysis patients in Korea: A cross-sectional survey. *Healthcare, 13*(2), 175. https://doi.org/10.3390/healthcare13020175

Luo, H., Liu, G., Lu, J., & Xue, D. (2021). Association of shared decision making with inpatient satisfaction: A cross-sectional study. *BMC Medical Informatics and Decision Making, 21*, 25. https://doi.org/10.1186/s12911-021-01385-1

Ma, S., Tang, Q., Li, S., Zhou, C., Hu, L., Wang, Z., Liao, X., Ma, W., & Hu, L. (2025). Effectiveness of an intervention based on Cox's interaction model of client health behavior for reducing symptom burden among post-stroke patients: A randomized controlled trial. *BMC Nursing, 24*, 1227. https://doi.org/10.1186/s12912-025-03833-z

Monshi, S. S., Alamri, H. M., Almuaddi, A. M., Almutairi, F. M., Aljishi, H. R., Alfaki, K. A., AlTurki, M. S., Saqah, R. M., & Aldossary, M. S. (2026). Patient satisfaction with dialysis services provided across different providers in Saudi Arabia. *Frontiers in Nephrology, 5*, 1691773. https://doi.org/10.3389/fneph.2025.1691773

Nuairi, A. A., Bermamet, H., Abdulla, H., Simsekler, M. C. E., Anwar, S., & Lentine, K. L. (2022). Identifying patient satisfaction determinants in hemodialysis settings: A systematic review. *Risk Management and Healthcare Policy, 15*, 1843–1857. https://doi.org/10.2147/RMHP.S372094

Nurhayati, E., Anggeria, E., & Nababan, T. (2026). Analysis of determinants of hemodialysis patient satisfaction in nursing services: A literature review. *Jurnal Keperawatan Priority, 9*(1), 18–28. https://doi.org/10.34012/jukep.v9i1.7791

Pakpahan, R. (2023). Satisfaction level undergoing patients hemodialysis in service nursing in the hemodialysis unit Efarina Hospital Berastagi. *International Journal of Public Health Excellence, 2*(2), 520–523. https://doi.org/10.55299/ijphe.v2i2.368

Santos, M. C. L., Calimbas, N. D., & dela Rosa, R. D. (2024). Caring experiences of nurses and elderly hemodialysis patients: Basis for modular development on patient care and education. *Journal of Education and Culture, 4*(2), 119–134. https://doi.org/10.47918/jeac.v4i2.1857

Saygili, M., Kandemir Ture, A., & Akca, N. (2025). Health care quality and patient satisfaction in hemodialysis clinic: Investigation of patient-reported outcomes. *Journal of Clinical Medicine of Kazakhstan, 22*(6), 19–27. https://doi.org/10.23950/jcmk/17358

Sułkowski, L., Matyja, A., & Matyja, M. (2024). Social support and quality of life in hemodialysis patients: A comparative study with healthy controls. *Medicina, 60*(11), 1732. https://doi.org/10.3390/medicina60111732

Takham, A., & Srisook, R. (2025). The role of hemodialysis nurses in the care of patients with chronic kidney disease and anemia undergoing hemodialysis. *Nursing Journal CMU, 52*(1), 300–310.

Terkeş, N., & Bedir, G. (2025). Determination of the effect of perceived social support on adherence to treatment in hemodialysis patients. *Turkish Journal of Health Science and Life, 8*(1), 16–22. https://doi.org/10.56150/tjhsl.1451279

Thomas, N. (2019). *Renal nursing: Care and management of people with kidney disease* (5th ed.). Wiley Blackwell.