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Original Article

Patient family satisfaction and affective anger among families of hemodialysis patients in Lampung general hospital: A cross-sectional study

Nabilla Puji Lestarie[1*], Prima Dian Furqoni[1], Triyoso[1], Dian Asih Rianty[1]
[1]Program Studi Ilmu Keperawatan, Fakultas Ilmu Kesehatan, Universitas Malahayati, Lampung, Indonesia

***Corresponding Author:**
Nabilla Puji Lestarie
Program Studi Ilmu Keperawatan, Fakultas Ilmu Kesehatan, Universitas Malahayati, Lampung, Indonesia
Email:
nabilla.pujilestary@gmail.com

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Abstract

Background: Hemodialysis care creates repeated interactions between healthcare providers, patients, and family members. Families who accompany patients during hemodialysis often evaluate the quality of services while also experiencing emotional tension related to caregiving demands. However, limited evidence has examined the relationship between patient family satisfaction and affective anger among families of hemodialysis patients.
Objective: This study aimed to examine the relationship between patient family satisfaction and affective anger among families of patients undergoing hemodialysis at Lampung General Hospital.
Methods: This study used an analytical cross-sectional design. The study was conducted in the hemodialysis unit in Bandar Lampung. A total of 179 adult family members of patients undergoing hemodialysis were selected using purposive sampling. Patient family satisfaction was measured using an adapted SERVQUAL-based questionnaire focusing on responsiveness and reliability, while affective anger was assessed using the emotional burden subscale of the Cognitive Behavioural Assessment. Data were analyzed using descriptive statistics and the Spearman Rank correlation test because the data were not normally distributed.
Results: Most respondents reported being somewhat satisfied with hemodialysis services (50.8%), followed by satisfied (29.6%), dissatisfied (10.1%), very dissatisfied (8.4%), and very satisfied (1.1%). Affective anger was mostly categorized as low (37.4%), followed by moderate (28.5%), very low (16.8%), high (10.1%), and very high (7.3%). The Spearman Rank correlation test showed a strong, significant, and negative relationship between patient family satisfaction and affective anger ($r_s = -0.693$; $p < 0.001$). Higher family satisfaction was associated with lower affective anger among family members.
Conclusion: Patient family satisfaction was strongly and negatively associated with affective anger among families of hemodialysis patients. Hemodialysis units should strengthen family-centered care through responsive communication, reliable service processes, structured information delivery, and early identification of family emotional distress.

Background

Chronic kidney disease represents a growing public health burden because the disease requires long-term treatment, continuous monitoring, and sustained adaptation across biological, psychological, and social domains (Wang et al., 2025; WHO, 2025). Hemodialysis remains a major renal replacement therapy for patients with advanced kidney disease because this treatment maintains metabolic stability while creating repeated clinical encounters for patients and families (KDOQI, 2024; Indonesian Renal Registry, 2022). Indonesia faces increasing demand for hemodialysis services because chronic kidney disease continues to affect communities across different regions and health service settings (Survei Kesehatan Indonesia [SKI], 2023; Wabula, 2025). Hospitals need to strengthen patient- and family-centered hemodialysis care because service quality directly shapes treatment experience, trust, and satisfaction among families who accompany patients during care (Yuliana et al., 2024; Marlina, 2022).

Families of hemodialysis patients play a central caregiving role because patients often require assistance with treatment schedules, symptom monitoring, daily activities, emotional support, and decision-making (Hejazi et al., 2021; Sari et al., 2026). Family support improves patient adaptation because relatives provide practical assistance, informational guidance, and emotional reassurance during long-term illness trajectories (Aprita, 2024; KK et al., 2024). Family resilience also influences care continuity because families must reorganize roles,

responsibilities, and coping patterns in response to chronic illness demands (Walsh, 2021; Haliza et al., 2026). Hemodialysis families may experience psychological strain because repeated hospital visits, financial pressure, uncertainty, and caregiving responsibility can increase burden and emotional exhaustion (Ebadi et al., 2021; Khouban-Shargh et al., 2024).

Psychological problems among people with chronic kidney disease require serious attention because anxiety, distress, fatigue, and emotional instability can affect self-management and treatment engagement (Cardol et al., 2023; Huang et al., 2021). Hemodialysis patients frequently encounter anxiety and fatigue because the treatment process involves invasive procedures, physical limitations, and dependence on repeated therapy sessions (Hosseini et al., 2024; Aneja & Fatrida, 2026). Nurses contribute to psychological comfort because therapeutic communication, education, relaxation interventions, and supportive care can reduce anxiety and improve care experience among hemodialysis patients (Matulessy, 2025; KK & Akbar, 2023). Families also absorb emotional tension from the patient's illness trajectory because they observe suffering, uncertainty, dependency, and changes in daily family functioning (Ebadi et al., 2021; Al Harbi et al., 2025).

Affective anger becomes an important emotional response among family members because anger can emerge from stress, perceived unfairness, unmet expectations, fear, helplessness, or repeated exposure to caregiving pressure (Richard et al., 2023; Pop et al., 2025). Emotion regulation determines the expression of anger because families may suppress, redirect, or communicate emotional distress during interactions with patients and health professionals (Tyra et al., 2024; Pop et al., 2025). Poorly managed anger can disturb caregiving relationships because emotional tension may reduce communication quality, family patience, and supportive behavior during hemodialysis care (Richard et al., 2023; Walsh, 2021). Assessment of affective anger among families therefore becomes relevant because family emotions can influence patient support, treatment atmosphere, and satisfaction with hospital care (Ebadi et al., 2021; Hejazi et al., 2021).

Patient family satisfaction reflects family evaluation of hospital care because relatives observe service responsiveness, communication quality, empathy, reliability, and the clarity of information during hemodialysis services (Yuliana et al., 2024; Marlina, 2022). Therapeutic communication may improve satisfaction because families need respectful interaction, understandable explanations, and emotional recognition from health professionals during repeated treatment encounters (Yuliana et al., 2024; Matulessy, 2025). Supportive care needs among hemodialysis patients and families remain multidimensional because they include physical, psychological, informational, spiritual, and service-related expectations (Al Harbi et al., 2025; Hejazi et al., 2021). Family dissatisfaction may increase emotional reactivity because unmet expectations, unclear information, and perceived poor responsiveness can strengthen frustration and affective anger during care processes (Pop et al., 2025; Khouban-Shargh et al., 2024).

Research on hemodialysis care has addressed psychological distress, caregiver burden, family support, and patient anxiety, but fewer studies have directly examined the relationship between patient family satisfaction and affective anger among families in hospital-based hemodialysis settings (Cardol et al., 2023; Haliza et al., 2026). Lampung General Hospital provides an important clinical context because families of hemodialysis patients interact repeatedly with health services and may develop distinct satisfaction and emotional responses across treatment visits (Indonesian Renal Registry, 2022; Wabula, 2025). A cross-sectional approach can identify the association between family satisfaction and affective anger because this design measures both variables simultaneously in a defined population of family members (Cardol et al., 2023; Yuliana et al., 2024). This study aims to examine the relationship between patient family satisfaction and affective anger among families of hemodialysis patients at Lampung General Hospital.

Methods

Study Design

This study employed an analytical quantitative method. The research design used was a cross-

sectional design. In this study, all data on the two variables family satisfaction levels and family affective anger were collected simultaneously from respondents who met the inclusion criteria during the data collection period.

Sampling and Setting

The study was conducted in the hemodialysis unit in General Hospital at Bandar Lampung. The study population consisted of all adult family members accompanying patients undergoing hemodialysis therapy at the hospital, with a total accessible population of 324 individuals. The sample consisted of 179 respondents, determined using the Slovin formula with a margin of error of 5% (d = 0.05). Respondents were selected using purposive sampling based on predefined eligibility criteria.

Inclusion criteria were family members aged ≥18 years, actively accompanying the patient during the hemodialysis process at least twice, willing to participate by signing an informed consent form, and able to read, understand, and complete the questionnaire. Exclusion criteria were family members with severe mental disorders or communication barriers, family members who accompanied the patient fewer than two times, and those who were unwilling to participate or complete the questionnaire.

Instruments

This patient family satisfaction questionnaire is an adaptation of SERVQUAL. The instrument consists of 10 statement items, focusing on the dimensions of responsiveness and reliability. It uses a 1–5 Likert scale.

The family satisfaction questionnaire was adapted from the SERVQUAL framework, with a specific focus on the responsiveness and reliability dimensions. These two dimensions were selected because they were considered the most relevant to the operational context of hemodialysis services, particularly in relation to the timeliness of procedures, consistency of service delivery, staff response to family needs, and clarity of service processes. The dimensions of tangibles, assurance, and empathy were not included as separate domains because the preliminary assessment indicated that the most prominent service-related issues perceived by families were related to service speed, procedural consistency, and responsiveness of healthcare staff. Therefore, the instrument was narrowed to capture family satisfaction aspects that were directly related to daily hemodialysis service experiences. This adaptation was followed by validity and reliability testing to ensure that the instrument was appropriate for use in the study setting.

The resulting scores are then categorized into five levels of satisfaction: very dissatisfied (10–18), dissatisfied (19–26), somewhat satisfied (27–34), satisfied (35–42), and very satisfied (43–50). The Affective Anger Questionnaire used in this study employs the emotional burden subscale from the CBA (Cognitive Behavioural Assessment), developed by Sanavio & Sica (1991) and subsequently adapted by Karimah (2008). This instrument consists of 39 statements that assess aspects of anger, such as the frequency of anger, feelings of frustration, and negative emotional reactions in caregivers, using a 1–5 Likert scale. The resulting scores were then categorized into five levels: very high (≥132.60), high (109.20–132.60), moderate (85.80–109.20), low (62.40–85.80), and very low (≤62.40).

Data Collection

Data collection was conducted after obtaining ethical approval and research permission from the hospital. Eligible respondents were identified in the hemodialysis waiting area based on the inclusion and exclusion criteria. The researcher explained the study objectives, procedures, potential risks, benefits, voluntary participation, and confidentiality of responses. Respondents who agreed to participate were asked to sign an informed consent form before completing the questionnaire.

The questionnaires were administered directly to respondents in the hemodialysis waiting room. Respondents completed the questionnaires independently using a self-administered format. However, for respondents who experienced difficulty understanding specific items, the researcher provided neutral clarification without directing or influencing

their answers. The researcher remained available during the completion process to ensure that all questionnaire items were completed properly. Completed questionnaires were checked for completeness before data coding and entry.

Responses from the family satisfaction and affective anger questionnaires were coded and scored according to the scoring guidelines of each instrument. The total score for each variable was obtained by summing all item responses. Family satisfaction scores were categorized into five levels: very dissatisfied, dissatisfied, somewhat satisfied, satisfied, and very satisfied. Affective anger scores were categorized into five levels: very low, low, moderate, high, and very high. Data were checked for completeness, coded, entered into statistical software, and analyzed using descriptive and inferential statistics.

Data Analysis

Data were analyzed using IBM SPSS Statistics. Univariate analysis was performed to describe respondent characteristics, family satisfaction levels, and affective anger levels using frequencies, percentages, means, standard deviations, minimum values, and maximum values where appropriate. Prior to bivariate analysis, normality testing was conducted using the Kolmogorov–Smirnov test because the sample size was greater than 50 respondents. The normality test indicated that the data were not normally distributed; therefore, the Spearman Rank correlation test was used.

Bivariate analysis was conducted to determine the relationship between family satisfaction as the independent variable and affective anger as the dependent variable. The Spearman Rank correlation test was selected because the variables were measured using ordinal categories and the data did not meet the assumption of normality. The strength and direction of the correlation were interpreted based on the correlation coefficient. A p-value of less than 0.05 was considered statistically significant.

Ethical Considerations

Research ethics is a set of moral principles and rules that guide researchers in conducting research honestly, fairly, and with respect for the rights and dignity of all parties involved. This study underwent an ethics review conducted at Dr. H. Abdul Moeloek General Hospital on November 11, 2025, with letter number NO.642/KEPK-RSUDAM/XI/2025.

Results

A total of 179 family members of patients undergoing hemodialysis participated in this study. The descriptive analysis presented the distribution of patient family satisfaction with hemodialysis services and the level of affective anger among family members. Family satisfaction was categorized into five levels, ranging from very dissatisfied to very satisfied, while affective anger was categorized from very low to very high. The inferential analysis was then conducted to examine the relationship between patient family satisfaction and affective anger using the Spearman Rank correlation test.

Table 1. Distribution of patient family satisfaction and affective anger among families of hemodialysis patients (n = 179)

Variable	n	%
Patient family satisfaction		
Very satisfied	2	1.1
Satisfied	53	29.6
Somewhat satisfied	91	50.8
Dissatisfied	18	10.1
Very dissatisfied	15	8.4
Affective anger		
Very high	13	7.3
High	18	10.1
Moderate	51	28.5
Low	67	37.4
Very low	30	16.8

Table 1 shows that most respondents reported a moderate level of satisfaction with hemodialysis services. The largest proportion of families was in the somewhat satisfied category, with 91 respondents (50.8%), followed by the satisfied category, with 53 respondents (29.6%). A smaller proportion of respondents reported dissatisfaction, including 18 respondents

(10.1%) in the dissatisfied category and 15 respondents (8.4%) in the very dissatisfied category. Only 2 respondents (1.1%) reported being very satisfied with the hemodialysis services.

The distribution of affective anger showed that most respondents had relatively low emotional anger responses while accompanying patients during hemodialysis. The largest proportion of respondents was in the low affective anger category, with 67 respondents (37.4%), followed by the moderate category, with 51 respondents (28.5%). Meanwhile, 30 respondents (16.8%) reported very low affective anger, whereas 18 respondents (10.1%) and 13 respondents (7.3%) reported high and very high affective anger, respectively. These findings indicate that although most families reported low to moderate affective anger, a smaller proportion still experienced high emotional anger responses during the caregiving process.

Table 2. Results of the Relationship Between Patient Family Satisfaction and Family Affective Anger in Hemodialysis Patients

Variable	Spearman's rho	p-value	Notes
Family Satisfaction – Family Affective Anger	-0.693	<0.001	Strong, significant, negative correlation

Based on Table 2 showed the Spearman Rank correlation test, the correlation coefficient was rs = -0.693 with p < 0.001. This result indicates a strong, significant, and negative correlation between patient family satisfaction and affective anger among families of hemodialysis patients. The negative direction of the correlation means that higher family satisfaction with hemodialysis services was associated with lower affective anger. Conversely, lower family satisfaction was associated with higher affective anger. Therefore, family satisfaction is an important factor related to the emotional condition of families accompanying patients during hemodialysis treatment.

Discussion

This study found a strong, significant, and negative relationship between patient family satisfaction and affective anger among families of hemodialysis patients at Lampung General Hospital. Higher family satisfaction was associated with lower affective anger among family members accompanying patients during hemodialysis. Lower family satisfaction was associated with higher affective anger among family members. Most respondents reported a somewhat satisfied level of satisfaction with hemodialysis services. Most respondents also reported low to moderate levels of affective anger during the caregiving process. These findings indicate that family satisfaction may function as an important service-related factor in shaping the emotional responses of families in hemodialysis care.

The finding of moderate family satisfaction reflects the central position of service experience in long-term hemodialysis care because families repeatedly interact with health professionals, service procedures, and clinical environments during treatment visits (Yuliana et al., 2024; Wabula, 2025). Family satisfaction represents an evaluation of service quality because families observe responsiveness, reliability, communication, waiting time, and consistency of care during hemodialysis sessions (Marlina, 2022; Yuliana et al., 2024). Hemodialysis services require family-centered attention because patients often depend on relatives for transportation, monitoring, emotional support, and decision-making during long-term treatment (Hejazi et al., 2021; Sari et al., 2026). Families need clear information from health professionals because uncertainty about procedures, schedules, and patient conditions can increase emotional pressure during care (Al Harbi et al., 2025; Matulessy, 2025). The moderate satisfaction level in this study may indicate that families received some supportive service elements but still perceived unmet expectations in specific aspects of care (Yuliana

et al., 2024; Marlina, 2022). This interpretation strengthens the need for hemodialysis units to evaluate service delivery from the perspective of families as active care partners (Wabula, 2025; Hejazi et al., 2021).

The low to moderate level of affective anger among most respondents shows that family members may manage emotional tension despite repeated exposure to caregiving demands (Ebadi et al., 2021; Haliza et al., 2026). Affective anger can emerge as a psychological response because family caregivers face chronic stress, role strain, uncertainty, financial burden, and repeated exposure to patient suffering (Ebadi et al., 2021; Khouban-Shargh et al., 2024). Families of hemodialysis patients often experience emotional burden because caregiving responsibilities require continuous adjustment to treatment schedules and patient dependency (Hejazi et al., 2021; Haliza et al., 2026). Anger may reflect accumulated frustration because caregivers may perceive limited control over illness progression, service processes, and daily caregiving demands (Richard et al., 2023; Pop et al., 2025). Emotion regulation influences anger expression because caregivers may suppress, control, or communicate anger differently when interacting with patients and health professionals (Tyra et al., 2024; Pop et al., 2025). The presence of high and very high affective anger in a smaller proportion of respondents indicates that some families still require psychosocial attention within hemodialysis services (Ebadi et al., 2021; Khouban-Shargh et al., 2024).

The strong negative correlation between family satisfaction and affective anger indicates that service experience may be closely related to caregiver emotional stability in hemodialysis care (Yuliana et al., 2024; Ebadi et al., 2021). Families who perceive services as responsive and reliable may feel more secure because clear procedures and consistent staff responses reduce uncertainty during treatment visits (Marlina, 2022; Yuliana et al., 2024). Families who receive understandable explanations may experience less emotional tension because communication helps them interpret patient conditions and care processes more accurately (Matulessy, 2025; Al Harbi et al., 2025). Dissatisfaction may increase anger because delayed responses, unclear information, and inconsistent services can create frustration among relatives who accompany patients repeatedly (Pop et al., 2025; Richard et al., 2023). The correlation in this study therefore suggests that satisfaction should not be viewed only as an administrative outcome but also as a psychosocial indicator in family-centered hemodialysis care (Hejazi et al., 2021; Wabula, 2025). This relationship supports the argument that improving family satisfaction may contribute to reducing negative emotional responses among family caregivers (Khouban-Shargh et al., 2024; Walsh, 2021).

The findings can be understood through the SERVQUAL perspective because responsiveness and reliability influence how families judge hospital services during repeated hemodialysis encounters (Marlina, 2022; Yuliana et al., 2024). Responsiveness supports family satisfaction because health professionals who respond promptly to concerns can reduce perceived neglect and emotional distress among family members (Yuliana et al., 2024; Matulessy, 2025). Reliability supports family satisfaction because consistent procedures and predictable service flow help families plan caregiving tasks and reduce uncertainty (Marlina, 2022; Wabula, 2025). The hemodialysis context makes reliability important because patients and families depend on fixed schedules, procedural accuracy, and continuity of care for survival and adaptation (KDOQI, 2024; Indonesian Renal Registry, 2022). Service inconsistency may intensify emotional reactions because families may interpret poor service flow as a threat to patient safety and dignity (Richard et al., 2023; Pop et al., 2025). These mechanisms explain why lower satisfaction may be associated with higher affective anger among families of hemodialysis patients (Ebadi et al., 2021; Khouban-Shargh et al., 2024).

The findings also align with family resilience theory because families require external support systems to maintain adaptation during chronic illness care (Walsh, 2021; Hejazi et al., 2021). Health services can strengthen family resilience because respectful communication,

procedural clarity, and emotional support help families organize roles and maintain hope during long-term treatment (Walsh, 2021; Al Harbi et al., 2025). Family support affects patient functioning because relatives contribute to activities of daily living, adherence, emotional comfort, and continuity of care among patients undergoing hemodialysis (Sari et al., 2026; Aprita, 2024). Family caregivers may experience burden when care responsibilities exceed available coping resources, and this burden can shape emotional responses during treatment assistance (Haliza et al., 2026; Ebadi et al., 2021). Structured support from nurses may reduce emotional tension because nurses can provide education, reassurance, and early identification of anxiety or anger during clinical encounters (Matulessy, 2025; KK et al., 2023). The present findings therefore emphasize the importance of integrating family support, emotional screening, and communication improvement into hemodialysis care (Khouban-Shargh et al., 2024; Walsh, 2021).

The practical implication of this study concerns nursing care and hospital management because family satisfaction and affective anger are connected to the quality of family experience in hemodialysis units (Yuliana et al., 2024; Wabula, 2025). Nurses should provide structured explanations before, during, and after hemodialysis because families need accurate information to reduce uncertainty and emotional tension (Matulessy, 2025; Al Harbi et al., 2025). Hospitals should strengthen responsiveness and reliability because these service dimensions shape family satisfaction and may reduce negative emotional reactions among caregivers (Marlina, 2022; Yuliana et al., 2024). Hemodialysis units should identify families with high affective anger because emotional distress may disturb caregiving relationships and communication with health professionals (Richard et al., 2023; Pop et al., 2025). Caregiver education and stress management programs may help families manage emotional burden because structured interventions can reduce perceived stress and caregiver burden in hemodialysis contexts (Khouban-Shargh et al., 2024; Haliza et al., 2026). Future studies should examine causal pathways and intervention effects because cross-sectional findings cannot determine whether dissatisfaction increases anger or anger shapes service perception (Cardol et al., 2023; Cogley et al., 2023).

Conclusion and Recommendation

This study concluded that patient family satisfaction had a strong, significant, and negative relationship with affective anger among families of hemodialysis patients at Lampung General Hospital. Higher satisfaction with hemodialysis services was associated with lower affective anger, while lower satisfaction was associated with higher affective anger. These findings indicate that service quality, particularly responsiveness, reliability, communication clarity, and consistency of care, may play an important role in supporting the emotional stability of family members who accompany patients during hemodialysis. Hemodialysis units should strengthen family-centered care through structured information delivery, responsive staff communication, predictable service flow, routine family satisfaction assessment, and early identification of families with high emotional distress. Hospital management should develop practical strategies such as family communication protocols, caregiver education sessions, complaint-response mechanisms, and psychosocial support pathways to improve family experience and reduce negative emotional responses during long-term hemodialysis care.

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Declaration of conflict of interest
The authors declare no competing interests.

Declaration on the Use of AI
No AI tools were used in the preparation of this manuscript.

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