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Research Article

The Direct and Indirect Effect of Spirituality and Self-Care on Quality of Life Among Patients with Chronic Kidney Failure

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Abstract

Aims: Chronic kidney failure (CKF) is a significant global health issue, with profound impacts on patients' quality of life (QoL). Self-care and spirituality have been identified as key determinants influencing QoL among CKF patients undergoing hemodialysis. However, the interactive effects of these factors remain underexplored, particularly in Indonesia.

Objective: This study aims to investigate the direct and indirect effects of spirituality and self-care on QoL among CKF patients undergoing hemodialysis at Sekarwangi Hospital, Sukabumi Regency.

Methods: A correlational research design was employed, involving 71 CKF patients undergoing routine hemodialysis. Participants were selected using purposive sampling based on inclusion criteria. Data were collected using validated instruments: the Hemodialysis Patients' Self-Care Measurement Scale (HPSCMS), Spiritual Well-Being Scale (SWBS), and Kidney Disease Quality of Life Short Form (KDQOL-SF™ v1.3). Path analysis was conducted to assess the direct and indirect effects of spirituality and self-care on QoL.

Results: Spirituality exhibited a significant direct effect on QoL ($\beta = 0.381$, $p < 0.001$) and an indirect effect through self-care ($\beta = 0.384$), with a total effect of 0.765. Self-care also had a significant direct effect on QoL ($\beta = 0.547$, $p < 0.001$). Higher spirituality and better self-care practices were associated with improved QoL in CKF patients.

Conclusion: The findings underscore the importance of spirituality and self-care in enhancing QoL among CKF patients undergoing hemodialysis. Integrating spiritual support and promoting self-care behaviors into patient care could significantly improve outcomes. Future interventions should adopt a holistic approach, addressing both physical and spiritual dimensions of care.

Keywords:

Chronic kidney failure, hemodialysis, path analysis, quality of life, self-care, Sekarwangi Hospital, spirituality

INTRODUCTION

Chronic kidney failure (CKF) is a global health concern, with its prevalence and impact increasing significantly over recent decades. According to the World Health Organization's Global Burden of Disease report 2018, chronic diseases such as cardiovascular disorders are directly associated with decreased glomerular filtration rate (GFR). Annually, approximately 1.2 million people succumb to CKF globally, reflecting a 32% increase in mortality since 2005, contributing to over 2 million deaths and 19 million disabilities worldwide (1). By 2022, the global prevalence of CKF had reached an estimated 843.6 million people, with progression across its five stages varying widely (2).

Indonesia, as a developing country, is no exception to this rising trend. Data from the Indonesian Renal Registry (2018) highlighted that 132,142 individuals had active CKF between 2007 and 2018, with 66,433 new cases in 2018 alone. West Java, in particular, has shown a steady annual increase in cases, with 33,828 active patients reported in 2018 (3). Hemodialysis, a cornerstone of CKF management, remains a life-prolonging therapy for many. However, it does not cure the condition, requiring patients to adapt to lifelong treatment, often with sessions lasting 3–4 hours, three times per week (4–6).

While hemodialysis extends life expectancy, it also brings profound lifestyle changes and medical complications, including anemia, pain, and psychosocial issues such as depression and anxiety. These factors collectively diminish the quality of life (QoL) in CKF patients (7–9). QoL, as defined by the World Health Organization, reflects an individual's perception of their position in life within their cultural and value systems and is influenced by their goals, expectations, and concerns (10). Improving QoL in CKF patients requires a holistic approach addressing physical,

psychological, social, and environmental domains.

Among the factors influencing QoL in CKF patients, self-care plays a pivotal role. Self-care involves behaviors aimed at maintaining health, managing symptoms, and adhering to treatment protocols, either independently or with support from family or healthcare providers (11). Effective self-care in CKF patients includes dietary management, stress reduction, activity regulation, and adherence to vascular access care. Studies suggest that proactive self-care behaviors are associated with improved QoL, as patients develop the skills to manage their condition and mitigate long-term risks (12,13).

Spirituality, defined by Giacalone and Jurkiewicz (2003) as a sense of connection with a higher power or a purposeful existence, is another critical determinant of QoL. Spiritual well-being has been shown to enhance physical, psychological, social, and environmental QoL dimensions (14,15). Patients with strong spiritual beliefs often exhibit greater resilience, optimism, and ability to cope with the stressors of CKF and its treatments (16). Pilger et al. (2017) further highlight that spirituality positively correlates with QoL by instilling hope and enabling patients to find meaning in their experiences (16). Despite these findings, most studies have investigated the impact of self-care and spirituality on QoL in isolation. There is limited evidence exploring the combined and interactive effects of these factors on QoL among CKF patients undergoing hemodialysis.

The existing literature underscores the significance of self-care and spirituality in enhancing QoL among CKF patients. However, the interplay of these factors and their direct and indirect effects on QoL remain underexplored, particularly in the Indonesian context. Moreover, there is a lack of comprehensive studies addressing the combined influence of spirituality and self-care within a single model to provide actionable insights for patient care. This study aims to examine the direct and

indirect effects of spirituality and self-care on the QoL of CKF patients undergoing hemodialysis at Sekarwangi Hospital in Sukabumi Regency. By addressing this research gap, the findings are expected to contribute to the development of holistic, culturally tailored interventions to enhance QoL in this patient population.

METHODS

Study Design

This study employed a correlational research design to explore the direct and indirect effects of spirituality and self-care on the quality of life (QoL) among patients with chronic kidney failure (CKD) undergoing hemodialysis.

Sample

The study sample consisted of 71 CKD patients receiving routine hemodialysis at Sekarwangi Hospital in Sukabumi Regency. Participants were included if they met the following criteria: diagnosed with chronic kidney failure and undergoing routine hemodialysis, aged 18 years or older, and capable of providing informed consent and participating in the study. Participants were excluded if they: experienced a significant decrease in consciousness during the study period and were unable to complete the self-administered questionnaire. The required sample size was calculated using G*Power software for a path analysis, specifying an effect size of 0.15 (medium), an alpha level of 0.05, a power of 0.80, and three predictors. Based on the analysis, a minimum sample size of 71 participants was required. A purposive sampling technique was employed to recruit participants who met the inclusion criteria. Recruitment was conducted in collaboration with the hospital's hemodialysis unit staff to ensure accessibility and compliance.

Instruments

Hemodialysis Patients' Self-Care Measurement Scale (HPSCMS) was developed to assess self-care behaviors among patients undergoing hemodialysis.

Comprises 20 items scored on a Likert scale, where responses range from 1 (never) to 5 (always). Total scores are summed, with higher scores indicating better self-care practices. Reliability: Cronbach's alpha of 0.86 in the original version and 0.88 in the Bahasa Indonesia version.

Spiritual Well-Being Scale (SWBS) was developed by Paloutzian and Ellison to measure spirituality. Consists of 20 items divided into two subscales: Religious Well-Being (10 items) and Existential Well-Being (10 items). Responses are scored on a 6-point Likert scale (1 = strongly disagree to 6 = strongly agree). Higher scores reflect a greater sense of spiritual well-being. Reliability: Cronbach's alpha of 0.89 for the original version and 0.90 for the Bahasa Indonesia version.

Kidney Disease Quality of Life Short Form (KDQOL-SF™ v1.3) was designed to assess the quality of life in patients with kidney disease. Contains 36 core items and disease-specific modules with 43 additional items. Scoring involves aggregating responses into subscale scores, which are then transformed into a scale of 0 to 100, with higher scores indicating better QoL. Reliability: Cronbach's alpha ranges from 0.75 to 0.92 in the original version and 0.85 to 0.94 in the Bahasa Indonesia version.

Procedure

Ethical clearance was obtained from the Institutional Review Board (IRB) of Sekarwangi Hospital. Approval ensured adherence to ethical standards, including confidentiality and voluntary participation. Participants were recruited from the hospital's hemodialysis unit. Eligible patients were informed about the study's purpose, procedures, and potential benefits and risks. Written informed consent was obtained before participation. Data were collected using self-administered questionnaires distributed to participants during routine hemodialysis sessions. Research assistants were available to provide assistance and ensure the accuracy of responses. After completing the

questionnaires, participants were given an opportunity to provide feedback regarding the study process. This feedback was recorded to identify potential improvements for future studies.

Data Analysis

Descriptive statistical analysis was used to summarize sociodemographic characteristics and study variables, including spirituality, self-care, and QoL. Path analysis was employed to examine direct and indirect effects, using regression models to test the hypotheses. The statistical analysis was conducted using SPSS and AMOS software, with significance set at $p < 0.05$.

RESULTS

According to Table 1, the majority of respondents (aged 51–65) are represented by 27 people (38.0%), by 41 people (57.7%) who identify as female, by 65 people (91.5%) who identify as married, by 23 people (32.4%) who have completed elementary or junior high school, by 58 people (81.7%), by 49 people (69.0%) who have endured hemodialysis for more than three months, and by 29 people (40.8%) who have experienced chronic kidney failure for less.

Table 1. Characteristics of Respondents

Characteristics	f	%
Age		
20-35	14	19.7
36-50	22	31.0
51-65	27	38.0
>65	8	11.3
Gender		
Female	41	57.7
Male	30	42.3
Marital Status		
Single	6	8.5
Married	65	91.5
Education		
Not School	5	7.0
Primary School	23	32.4
Junior High School	23	32.4
Senior High School	16	22.6
College	4	5.6
Job Status		
Unemployed	58	81.7
Employed	13	18.3
Long Time From Hemodialysis		
1-3 Month	22	31.0
>3 Month	49	69.0
Long Time Suffering From Chronic Kidney Failure		
<1 Year	29	40.8
1-3 Year	28	39.4
>3 Year	14	19.8

According to Table 2, spirituality has a mean value of 103.43 (7.406), self-care has a mean value of 81.26 (8.021), and quality of life has a mean value of 62.76 (8.368).

Table 2. Univariate Analysis of Research Variables

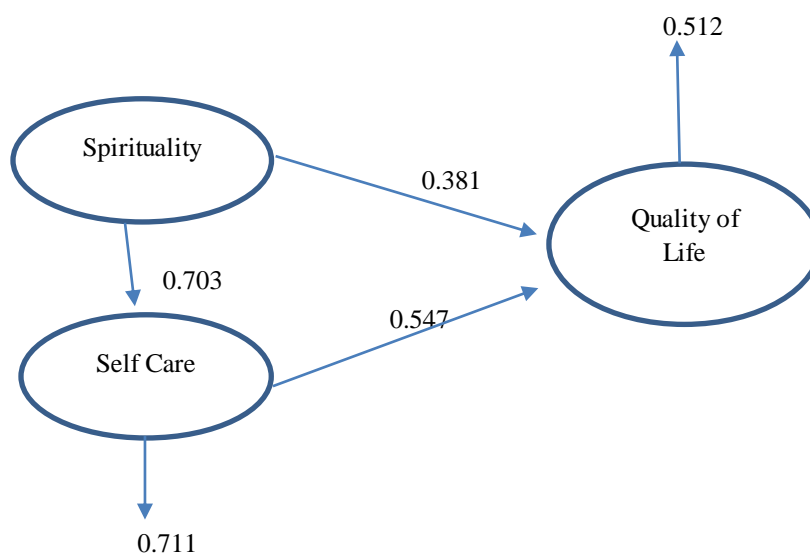
Variable	Mean	Standard Deviation (SD)	Max	Min
Spirituality	103.43	7.406	115.00	87.00
Self Care	81.26	8.021	94.00	63.00
Quality of Life	62.76	8.368	71.35	44.37

Table 3 presents the direct, indirect, and total effects of the independent variables—Spirituality and Self-Care—on the quality of life (QoL) in patients with chronic kidney failure. The direct relationship between spirituality and QoL is 0.381, which is significant ($p = 0.000$). This indicates that higher levels of spirituality directly contribute to better QoL in patients. Spirituality also indirectly affects QoL through self-care. This indirect effect is calculated as $0.703 \times 0.547 = 0.384$. This means spirituality positively influences self-care, which in turn improves QoL. The total effect of spirituality on QoL, combining direct and indirect effects, is 0.765 ($0.381 + 0.384$). This highlights spirituality as a critical factor influencing QoL both directly and indirectly. Self-care has a direct effect of 0.547 on QoL, with a highly significant p-value ($p = 0.000$). This indicates that better self-care practices directly lead to improved QoL among patients. There is no indirect effect for self-care on QoL, as self-care is not mediated by another variable in this analysis. The total effect of self-care is the same as the direct effect, 0.547, since no indirect effects are present.

Table 3. Direct Effect, Indirect Effect and Total Effect of Independent Variables on Quality Of Life of Chronic Kidney Failure

Variables	Direct Effect	P-Value	Indirect Effect	Total Effect
Spirituality	0.381	0.000	(0.703×0.547)	0.765
Self Care	0.547	0.000	-	0.547

According to Figure 1, spirituality has a direct impact on life quality ($b = 0.381$, $p = 0.000$) and an indirect impact on life quality through self-care ($b = 0.384$). Quality of life has been directly impacted by self-care ($b = 0.574$, $p = 0.000$).

**Figure 1. Path Analysis Model of Quality-of-Life Chronic Kidney Failure**

DISCUSSION

The findings of this study reveal that spirituality significantly influences the quality of life of patients with chronic kidney failure undergoing hemodialysis at Sekarwangi Hospital in Sukabumi Regency. According to Bandura (2013), spirituality encompasses diverse concepts, including beliefs about the unknown or uncertain aspects of existence. It represents an individual's faith in God Almighty and the Creator. Meeting spiritual needs can foster optimism and deepen faith in the power of God, which, in turn, enhances emotional well-being (17). Quality of life is defined as an individual's perception of their position in life within the cultural context and value systems they inhabit. It encompasses their goals, expectations, standards, and concerns (18). In the context of chronic illnesses, quality of life includes elements such as physical functioning, perceived health, symptom management, satisfaction of needs, cognitive functioning, and mental health (19).

When dealing with life-threatening illnesses, spirituality becomes a critical factor in coping and management. It provides a pathway for personal growth, effective problem-solving, and adaptation to challenging conditions (19). Spirituality has been associated with improved happiness, reduced depression, and lower levels of anger and anxiety. It also fosters higher expectations, leading to greater life satisfaction and reduced feelings of regret (19). The spiritual dimension also plays a role in helping individuals resolve psychological challenges, enabling them to adapt to stressful and tense situations. People with high spirituality tend to be more accepting of their circumstances, exhibiting resignation and surrender in positive ways that lead to personal transformation (20). In healthcare, addressing spiritual needs improves connections with God, oneself, and others, leading to better quality of life even in difficult health situations. Additionally,

spirituality contributes to mental relaxation and reduces illness-related stress, which can otherwise lower quality of life (21). Chronic illnesses, especially those requiring long-term and intensive treatment, can significantly impact a person's life. Developing a sense of community, reflective practices, and strong social networks can enhance one's quality of life. Spirituality allows individuals to view their illness more positively, increasing self-worth, hope, and overall well-being (20).

This study also highlights the role of spirituality in influencing self-care behaviors among patients with chronic kidney failure at Sekarwangi Hospital. Self-care refers to actions individuals take to maintain and improve their physical and mental health (21). For hemodialysis patients, self-care practices include managing fluid intake, adhering to dietary guidelines, taking medications, and maintaining vascular access. Spirituality provides individuals with a framework for addressing challenges and finding meaning in their actions. It helps guide their behavior, enabling them to lead more fulfilling and purposeful lives (22). People with strong spiritual intelligence are often better equipped to manage stress and are more likely to maintain self-care routines despite their illness. Spiritual intelligence encourages acceptance of circumstances and fosters the ability to find wisdom in difficult situations (21). High spiritual intelligence has been associated with better stress resilience, greater engagement in self-care, and more effective disease management. This occurs because individuals view challenges and suffering positively, inspiring them to take constructive actions (Hamid & Dehghanizadeh, 2010). Spiritual well-being also accelerates recovery and enhances self-confidence, even in challenging circumstances. By addressing spiritual needs, individuals can achieve greater purpose and longevity, improving their quality of life (21).

The study confirms that self-care practices positively impact the quality of life of hemodialysis patients with chronic kidney failure. Research by Nguyen (2022)(22) demonstrated that patients who practice self-care experience significant improvements in their quality of life. Similarly, Prastiwi et al. (2022) found that effective self-care among hemodialysis patients leads to better physical, emotional, and social well-being. Self-care involves actions taken to manage, maintain, and enhance one's health and well-being in response to a challenging situation. For patients with chronic kidney failure, self-care minimizes the physical, psychological, social, and economic burdens associated with the condition (20). The growing prevalence of chronic diseases underscores the increasing importance of self-care skills. By fostering these abilities, patients can improve their quality of life, reduce mortality rates, and lower healthcare costs (23).

CONCLUSION

The findings of this study indicate that spirituality and self-care significantly enhance the quality of life among patients with chronic kidney failure undergoing hemodialysis. The results of this study have important implications for nursing practice, particularly in managing patients with chronic kidney disease (CKD). Addressing spirituality and promoting self-care can significantly improve patients' quality of life. Nurses should integrate spiritual care into their practice, providing patients with the support needed to meet their spiritual and self-care needs. Furthermore, these findings can serve as a foundation for future research and interventions aimed at improving the well-being of individuals with chronic kidney disease.

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Conflict of Interest

The authors hereby state that they have no conflicts of interest to report.

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