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The Role of Nursing in Enhancing the Quality of Life for Hemodialysis Patients

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Abstract

Chronic Kidney Disease (CKD) is a prevalent health issue that requires long-term management, with many patients relying on hemodialysis therapy due to the limited availability of kidney transplants. Hemodialysis patients face significant physical and psychological challenges, which can impact their overall quality of life. Nurses play a crucial role in ensuring patient adherence to hemodialysis regimens and providing high-quality care, yet various factors such as workload, stress, and limited resources may affect their ability to deliver optimal care. Understanding the relationship between the role of nurses and the quality of life in hemodialysis patients is essential for improving treatment outcomes.This study employed a descriptive quantitative correlation design with a cross-sectional approach. A total of 80 hemodialysis patients were recruited through power analysis. Data collection was conducted using two structured questionnaires: one to assess the quality of life in hemodialysis patients and another to evaluate the role of nurses in providing hemodialysis care. The quality of life questionnaire was adapted from the WHOQOL instrument and used a 4-point Likert scale, with higher scores indicating better quality of life. The nursing role questionnaire assessed key aspects of care, including assessment, planning, implementation, and evaluation. Data analysis was performed using univariate and bivariate statistical methods, with the Spearman rho correlation test used to determine the relationship between nurses' roles and patients' quality of life.The study found that 90.8% of nurses demonstrated good performance in delivering hemodialysis care, while 9.2% had lower effectiveness. Regarding patient quality of life, 63.2% of hemodialysis patients reported a high quality of life, while 36.8% had a moderate quality of life. The correlation analysis revealed a significant positive relationship between nurses' roles and patient quality of life ($r = 0.520$, $p = 0.002$), indicating that better nursing care is associated with improved patient well-being.The findings highlight the crucial role of nurses in enhancing the quality of life among hemodialysis patients. Effective nursing care, including proper assessment, planning, implementation, and evaluation, contributes to better treatment adherence and overall well-being. Strengthening nurse-patient relationships, reducing nurse fatigue, and providing continuous professional training can further improve the quality of care and patient outcomes. Future research should explore additional interventions to optimize nursing care in hemodialysis settings.

Introduction

Chronic Kidney Disease (CKD) is a prevalent health issue, with many individuals unable to undergo kidney transplantation, leaving them reliant on hemodialysis therapy. This treatment process leads to alterations in blood components and electrolyte balance due to the dialysis procedure [1]. Reports indicate a continuous rise in the number of new hemodialysis patients over the years, though not all nurses assigned to dialysis units possess specialized certification in dialysis care [2]. Nurses play a vital role in ensuring patient adherence to hemodialysis routines, as the quality of care provided significantly impacts treatment

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outcomes [3]. Moreover, the standard of nursing care directly influences the overall well-being of individuals undergoing hemodialysis [4]. Patients experience substantial physical and psychological distress, as their dependence on dialysis machines affects their daily lives and overall health adaptation [5]. The leading causes of mortality in this patient population include sepsis and ischemic heart disease, highlighting the need for strategies to enhance survival rates. Additionally, many hemodialysis patients suffer from conditions such as anxiety, insomnia, and major depressive disorders, which contribute to a diminished quality of life [6].

The role of nurses within dialysis units is crucial in promoting patient adherence to treatment regimens, as their approach and attitude during care encourage patients to participate in recommended exercises and self-care routines [7]. However, nurses experiencing mental and physical strain may struggle to perform their responsibilities effectively, which could impact the standard of care provided [8]. Among hemodialysis patients, a significant proportion falls within the middle-aged to older adult category, and their quality of life is often compromised due to complications associated with their condition, affecting their role within their families [9]. The repeated nature of hemodialysis treatments contributes to both emotional and physical stress, requiring ongoing patient support [10]. Factors such as demographic characteristics and clinical conditions further influence patient well-being, making it essential for nurses to understand these aspects to develop personalized interventions that enhance quality of life [11].

Providing hemodialysis patients with comprehensive care involves addressing their physical symptoms, functional limitations, mental health concerns, and educational needs while fostering strong therapeutic relationships [12]. Nurses play a key role in supporting patients by identifying their treatment needs and ensuring appropriate care strategies are in place [13]. Essential aspects of nursing care in dialysis settings include delivering high-quality treatment, prioritizing patient satisfaction, and improving overall care standards [14]. The presence and guidance of nurses within hemodialysis units significantly contribute to patient comfort, as they provide continuous feedback, address concerns, and assist in managing treatment challenges as they arise [15]. Given the critical involvement of nurses in ensuring adherence to hemodialysis protocols, further research is needed to explore the connection between nursing roles and the quality of life of patients undergoing dialysis.

Methods

This study employs a descriptive quantitative correlation design with a cross-sectional approach. The research sample consists of 80 hemodialysis patients undergoing treatment at dialysis centers. The sampling process was conducted using power analysis to ensure adequate representation.

Two structured questionnaires were utilized in this study. The first questionnaire assessed the quality of life among hemodialysis patients, consisting of 25 items covering aspects such as health status, personal well-being, and life satisfaction. The second questionnaire examined the relationship between the roles of nurses in delivering care to hemodialysis patients. This instrument also comprised 25 items, addressing key nursing components, including assessment, planning, implementation, and evaluation. The quality of life questionnaire was adapted from the WHOQOL quality of life instrument [16] and employed a 4-point Likert scale, where higher scores indicated a better quality of life. The reliability and validity of this instrument were confirmed, with a validity coefficient of 0.93 and a Cronbach's alpha of 0.87. Similarly, the questionnaire evaluating nurses' roles was based on a 4-point Likert scale, classifying scores into two categories: 25–62 (poor role performance) and 63–100 (good role performance). This instrument demonstrated strong validity (0.97) and reliability (Cronbach's alpha = 0.89). Both questionnaires were revised to ensure clarity and comprehensibility in the local language.

Data analysis was carried out using both univariate and bivariate statistical methods. Descriptive statistics, including percentages, were applied to summarize respondents' demographic characteristics. The relationship between nurses' roles and patients' quality of life was examined using Spearman's rho correlation test, with a significance level set at $p < 0.05$. Ethical approval was obtained before the study

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commenced, and all participants provided informed consent prior to their inclusion in the research. Statistical analyses were performed using the Statistical Package for Social Sciences (SPSS) version 20.

Results

The demographic characteristics of the study participants are presented in Table 1. The findings indicate that the highest proportion of respondents were in the 55–100 age range, with individuals (36.8%). In terms of gender distribution, males comprised the majority, accounting for participants (68.4%), while females made up participants (31.6%). Regarding marital status, individuals (90.8%) were married, while participants (9.2%) were single or widowed. The primary cause of chronic kidney disease leading to hemodialysis treatment was hypertension, affecting patients (56.6%), followed by diabetes mellitus in patients (27.6%) and other underlying conditions in patients (15.8%).

Table 1. Characteristics of Respondents (n = 80) Undergoing Hemodialysis Therapy

Characteristic	Percentage (%)
Age (years)	
18–34	11.8%
35–54	25.0%
55–100	36.8%
Gender	
Male	68.4%
Female	31.6%
Marital Status	
Married	90.8%
Single/Widowed	9.2%
Primary Cause of CKD	
Hypertension	56.6%
Diabetes Mellitus	27.6%
Other	15.8%

The role of nurses in delivering hemodialysis care was evaluated based on four key domains: assessment, planning, implementation, and evaluation. The results indicated that nurses (90.8%) demonstrated a strong performance across these areas, categorizing them in the "good" role group, whereas nurses (9.2%) were classified in the "poor" role group. This highlights the overall effectiveness of nursing interventions in the hemodialysis setting.

The quality of life among hemodialysis patients was assessed across three major components: physical, psychological, and spiritual well-being; personal resources; and future outlook. respondents (63.2%) reported a high quality of life, whereas individuals (36.8%) fell within the moderate quality of life category. No respondents were found to have a poor quality of life. These results indicate that the majority of patients undergoing hemodialysis perceive their quality of life positively despite the challenges associated with their condition.

The relationship between nurses' role performance and the quality of life of hemodialysis patients was analyzed using the Spearman rho correlation test. The statistical analysis revealed a correlation coefficient (r) of 0.520, with a significance level of $p = 0.002$ ($p < 0.05$. This indicates a significant positive and moderate relationship between the quality of nursing care and patients' quality of life. In other words, as the effectiveness of nursing care increases, so does the overall quality of life in hemodialysis patients.

Discussion

Nurses play a critical role in managing the care of patients undergoing hemodialysis, delivering both routine and complex interventions. Their responsibilities include direct patient care, continuous monitoring, and

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implementing patient education programs to enhance adherence to treatment and overall well-being. To maintain a high standard of care, it is essential for nurses to engage in ongoing professional development and training in hemodialysis care [4].

In this study, the assessment of nurses' roles in hemodialysis care revealed that 90.8% of nurses demonstrated strong performance, while 9.2% were categorized as having a lower level of effectiveness . The evaluation covered four key nursing components: assessment, planning, implementation, and evaluation. The findings indicate that nurses performed well in delivering care, with the highest adherence observed in the implementation phase.

Several factors influence nurses' ability to provide effective care, particularly in terms of patient education. Research suggests that barriers such as workload, staffing shortages, and perceptions regarding educational duties can limit the extent to which nurses engage in educating hemodialysis patients [17]. Furthermore, the demanding nature of hemodialysis care, which often involves life-threatening situations, exposes nurses to significant psychological stress, potentially leading to burnout and decreased performance [18].

A crucial aspect of hemodialysis nursing care is the comprehensive assessment of patients before, during, and after dialysis sessions. This involves monitoring key vital signs, including blood pressure, pulse, respiration rate, body temperature, and weight fluctuations [19]. In addition to physical assessments, effective communication between nurses and patients is fundamental in ensuring that patients feel supported and informed throughout their treatment process [20].

Studies have shown that structured nursing interventions can lead to improved treatment outcomes. Planned nursing care enhances therapeutic effectiveness and ensures that patient needs are met [13]. However, research conducted in European healthcare settings indicates that due to time constraints, nurses are often unable to complete all necessary care tasks, which can negatively impact patient care [21]. Additionally, high workloads in hemodialysis units may result in a lack of time for patient education and emotional support, both of which are crucial for maintaining patient adherence to treatment [21]. Findings from studies in Thailand suggest that addressing nurse fatigue could improve patient-centered care by allowing nurses to focus more on individual patient needs [22]

Patients undergoing hemodialysis frequently encounter significant challenges, including financial difficulties, job insecurity, emotional distress, and concerns regarding mortality. These factors can contribute to lower satisfaction with life and reduced overall well-being. The findings of this study indicate that among the hemodialysis patients surveyed, 63.2% reported a high quality of life, while 36.8% had a moderate quality of life.

Previous studies have highlighted that in many regions, hemodialysis patients generally experience poor to moderate quality of life, often perceiving their health status as unsatisfactory [23]. In Saudi Arabia, an evaluation of six key domains of quality of life—physical well-being, emotional health, disease burden, medical and financial satisfaction, and overall health perception—found that younger patients reported better quality of life outcomes. Conversely, factors such as older age, prolonged dialysis duration, and male gender were associated with lower quality of life scores [24].

Mental health concerns, including depression, anxiety, and stress, are common among individuals undergoing hemodialysis. However, research from Iran indicates that tele-nursing interventions, in which nurses provide follow-up care and remote support, can significantly reduce these psychological burdens and improve overall well-being [25]. Structured nursing interventions have also been shown to enhance various aspects of quality of life, including physical health, emotional stability, vitality, and social interactions [26].

This study found a significant positive correlation between nurses' roles and patients' quality of life, with a moderate correlation strength ($r = 0.520$) and statistical significance ($p = 0.002$) . These findings suggest that the effectiveness of nursing care plays a vital role in improving treatment outcomes and enhancing the quality of life for hemodialysis patients.

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One of the key factors influencing patient adherence to hemodialysis treatment is the quality of the nurse-patient relationship. Effective communication and trust between nurses and patients contribute to better adherence to dietary guidelines, fluid intake restrictions, and treatment regimens [27]. Additionally, psychosocial support, including religious and spiritual guidance, has been linked to higher levels of patient satisfaction and improved coping mechanisms [28].

The application of Orem's self-care nursing theory highlights the importance of fostering nurse-patient relationships based on trust and mutual understanding. By actively involving patients in their care planning and providing tailored nursing interventions, nurses can encourage greater self-care and independence among hemodialysis patients. Key factors that contribute to enhanced patient outcomes include strong nurse-patient interactions, continuous nursing support, educational strategies, and active nurse participation in patient activities [15].

The quality of hemodialysis care directly affects patients' daily lives. A study conducted in Iran revealed that patient preferences, such as competent nursing staff, adequate support, well-equipped facilities, and personalized treatment, significantly impact their overall treatment experience. Nurses who demonstrate proficiency in hemodialysis care require not only clinical expertise but also strong communication skills and accountability to ensure patient-centered care [29].

Establishing close and supportive relationships between nurses and hemodialysis patients is essential for improving patient comfort and confidence in treatment. By fostering open communication, providing reassurance, and creating a positive treatment environment, nurses can enhance patient adherence to therapy and improve overall quality of life [30].

Conclusion

The findings of this study confirm that the role of nurses is a crucial factor in determining the quality of life of hemodialysis patients. Strong collaboration and trust between nurses and patients contribute to improved adherence to treatment, better health outcomes, and overall well-being. By delivering holistic, patient-centered care and addressing both physical and emotional needs, nurses can significantly enhance the quality of life for individuals undergoing hemodialysis therapy.

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