

Quality of Life and Associated Factors Among Hemodialysis Patients: Basis For a Quality-Of-Life Enhancement Program

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ABSTRACT

Chronic kidney disease, which leads to end-stage renal disease, requires patients to undertake hemodialysis treatment for survival. While hemodialysis is necessary for survival, maintenance hemodialysis burdens patients because it requires time, effort, and money. Assessing quality of life is important in renal health care because treatment outcomes should be evaluated from both a healthcare and QoL perspective. This study aimed to assess patients' quality of life across four main domains (physical, psychological, social, and environmental) and identify the socio-demographic and clinical factors that may influence quality of life and its improvement. The proposed program for improving quality of life is called K.R.I.S.T.E.L., which stands for (list the name of program in full). It employed a non-experimental descriptive correlational research design and used total enumeration sampling to select 150 respondents from patients undergoing hemodialysis at the dialysis center. The researchers obtained ethical approval from the Ethics Review Board (ERB) of St. Bernadette of Lourdes College (SBLC). The statistical methods included frequency, percentage, and weighted mean analyses, with the Chi-square Test of Independence at the 0.05 level of significance. The results showed a roughly even split between male and female participants (50.67% female and 49.33% male). Most participants had completed school (32.67%) and reported being married (42.67%). Most participants were unemployed (55.33%) and were financially supported by their children (40.00%). Additionally, most participants were not senior citizens (73.33%). Over half of the participants perceived themselves as sick, with hypertension (32.00%) and diabetes (10.67%) mentioned as the most common co-existing illnesses. Quality-of-life results across all four WHOQOL-BREF domains showed considerable differences in the physical, psychological, social, and environmental dimensions. Furthermore, the Chi-Square Test of Independence demonstrated statistically significant associations ($p \leq 0.05$) between select socio-demographic/clinical profile characteristics and the respondents' level of quality of life, confirming that patient well-being is shaped by a combination of personal, economic, and health-related factors. In conclusion, the findings confirm that hemodialysis patients face complex, interconnected challenges across physical, psychological, social, and environmental dimensions. To address these identified gaps, the study formulated the empirical, evidence-based K.R.I.S.T.E.L. Quality of Life Enhancement Program to guide nursing practice, holistic dialysis management, patient-centered care strategies, and supportive health interventions.

Keywords: Quality of Life, Hemodialysis, End-Stage Renal Disease (ESRD), WHOQOL-BREF, Associated Factors, Descriptive-Correlational, Nursing Care, K.R.I.S.T.E.L. Enhancement Program

INTRODUCTION

Chronic kidney disease (CKD) is a progressive health condition that can eventually lead to kidney failure requiring kidney replacement therapy, including hemodialysis. Although hemodialysis is an essential and life-sustaining treatment, patients undergoing long-term dialysis experience substantial changes in their daily lives, physical functioning, psychological well-being, social relationships, and ability to perform usual activities. Quality of life has

therefore become an important outcome in caring for patients with kidney disease because successful treatment should be measured not only by survival and clinical indicators but also by the patient's overall well-being. A systematic review by Barello et al. (2023) reported that adults undergoing hemodialysis experience psychological challenges and impaired health-related quality of life, emphasizing the importance of addressing both physical and psychosocial needs in dialysis care.

In the Philippines, the lives of patients on hemodialysis are affected by ongoing burdens for the patient and his or her family, including physical, psychological, social, and economic ones. Research findings in the Philippines indicate that patients on hemodialysis have to deal with the problems of managing their illness and treatment process, such as those of a physical, psychological, or socioeconomic nature. According to the Philippines Council for Health Research and Development, assessing clinical outcomes and patients' quality of life is also a research priority for advancing the understanding of hemodialysis benefits.

The latest Philippine study emphasizes the importance of assessing quality of life and its impact on patients receiving hemodialysis. According to Bautista and Aquino (2024), who conducted a study on patients diagnosed with end-stage kidney disease in Ilocos Sur, the quality of life of patients is significantly impacted by several socio-demographic and health factors such as age, gender, marital status, occupation, education level, the presence of any additional illnesses, and frequency of dialysis. This research confirms that the quality of life of these individuals is influenced by a combination of health, social, and personal factors. Another study in the Philippines conducted by Jamelo et al. (2024) indicates that patients who undergo regular hemodialysis experience a range of sleep issues that further contribute to devastating impacts on their quality of life, especially in terms of physical and mental health.

Therefore, this study, entitled “Quality of Life and Associated Factors Among Hemodialysis Patients: Basis for a Quality-of-Life Enhancement Program,” aims to assess the quality of life of patients undergoing hemodialysis and identify associated factors. The study will consider the multidimensional nature of quality of life, particularly its physical, psychological, social, and environmental dimensions, while examining relevant socio-demographic and health-related characteristics. The findings are expected to provide evidence to support the development of a Quality-of-Life Enhancement Program designed to address identified needs and strengthen patient-centered nursing care. Through this approach, the study seeks to contribute to improved well-being and more responsive healthcare services for patients undergoing hemodialysis.

Statement of the Problem

This study aimed to determine the quality of life and associated factors among hemodialysis patients to support the development of a Quality-of-Life Enhancement Program. Specifically, it sought to answer the following questions:

1. What is the socio-demographic and clinical profile of the hemodialysis patients in terms of:
 - 1.1. age;
 - 1.2. sex;
 - 1.3. employment status;
 - 1.4. duration of hemodialysis treatment;
 - 1.5. frequency of hemodialysis treatment; and
 - 1.6. presence of comorbid conditions, particularly diabetes mellitus and hypertension?
2. What is the level of quality of life of hemodialysis patients in terms of:
 - 2.1. physical health;

- 2.2. psychological health;
- 2.3. social relationships; and
- 2.4. environmental health?
- 3. Is there a significant relationship between the socio-demographic and clinical characteristics of hemodialysis patients and their quality of life?
- 4. Based on the findings of the study, what Quality-of-Life Enhancement Program may be proposed for hemodialysis patients?

Scope and Delimitations

This research aimed to examine the current state of studies and developments in Aviation Information Technology (AIT) education and evaluate how these efforts helped bridge the gap between universities and the aviation industry. In more detail, the study analyzed the experiences, views, and practices of key informants, including higher education administrators, program leaders, academic staff, researchers, aviation industry workers, and IT specialists with sufficient knowledge of AIT education and collaboration with specialists. The study analyzed curriculum innovation, research involvement, technology integration, industry collaboration, internship and training programs, academic staff training, and graduate employability. Data were collected through in-depth interviews and document analysis, and thematic analysis of the results described the tendencies and key ideas explaining how studies and development, in general, contributed to improving alignment between the educational process and the expectations of this field.

Review of Related Literatures

Quality of Life Among Hemodialysis Patients

Quality of life has become an important outcome in managing patients undergoing hemodialysis because treatment effectiveness extends beyond survival and control of physiological complications. Hemodialysis is a life-sustaining treatment for patients with advanced kidney disease; however, it can affect daily living in many ways, including physical functioning, psychological well-being, social relationships, and participation in usual activities. Rasyid et al. (2022) emphasized that quality of life is an important indicator of hemodialysis therapy success. Their study further identified several factors that may influence quality of life, including sociodemographic characteristics, depression, severity of kidney disease, comorbidities, duration of hemodialysis, medication adherence, and nutritional problems. These findings demonstrate that quality of life among hemodialysis patients is a multidimensional outcome influenced by several interconnected factors.

Similarly, Ghasemi et al. (2021) examined health-related quality of life among patients receiving hemodialysis and identified multiple factors affecting patients' quality of life. Their systematic review and meta-analysis emphasized that patients undergoing hemodialysis experience different stressors that may contribute to reduced quality of life. The evidence suggests that quality of life should be a key component of comprehensive dialysis care, not merely a secondary outcome of treatment.

Physical Health and Quality of Life

A critical aspect of quality of life for patients treated with hemodialysis is physical health. Regular sessions of dialysis, symptoms of the disease, side effects of treatment, tiredness, reduced capacity for physical functioning, and concomitant diseases affect the ability of patients to keep doing their daily activities. Hu et al. (2023) investigated different physical training programs for patients undergoing hemodialysis and showed how important physical

activity is to their overall quality of life. The findings confirm that physical training plays a vital role in helping people receiving this treatment improve their quality of life.

Psychological Health and Quality of Life

Psychological well-being is another significant factor in quality of life for patients on hemodialysis. Hemodialysis patients may suffer from anxiety, depression, doubt, emotional distress, and challenges in coping with the protracted process of treatment. Barello and colleagues (2023) did a systematic review and meta-analysis of psychosocial interventions regarding adult patients undergoing hemodialysis. They observed that psychosocial interventions had a considerable impact on anxiety and depression issues, thus emphasizing the importance of dealing with psychological problems in comprehensive care for people on hemodialysis.

Social and Environmental Dimensions of Quality of Life

Both social and environmental aspects of quality of life affect hemodialysis patients. The regularity of hemodialysis treatments can hinder patients' ability to work, fulfill their family obligations, engage in social activities, and even travel. Financial strain may create additional barriers, affecting treatment and the overall disease experience.

Aljawadi et al. (2024) emphasized that when evaluating quality of life in dialysis patients, multiple domains should be considered, including social domains, rather than focusing only on physical health. They conducted a systematic review and indicated that the vast majority of quality-of-life assessment tools include physical and psychological aspects together with social domains.

Sociodemographic Factors Associated with Quality of Life

Sociodemographic factors can influence the experience of hemodialysis and how patients cope with it. Factors such as age, gender, marital status, educational attainment, occupation, and other characteristics may influence access to resources, social support, financial stability, and the ability to cope with treatment.

Bautista and Aquino (2024) found a link between the quality of life of end-stage renal disease patients and specific sociodemographic characteristics in the Philippines. Age, sex, marital status, occupation, and educational attainment were among the characteristics linked to quality of life. This implies that patients from different sociodemographic backgrounds face different challenges with hemodialysis treatment.

Clinical Factors Associated with Quality of Life

The clinical characteristics of patients undergoing hemodialysis also strongly influence their quality of life. Dialysis duration, number of sessions, comorbidity burden, health condition, nutritional status, and other health-related factors may affect patients' physical and psychological functioning. Yonata et al. (2022) showed that comorbidity burden positively correlates with quality of life in patients undergoing hemodialysis. This may mean that patients with multiple comorbid diseases experience more health issues, which may lead to lower quality of life. Thus, properly controlling accompanying diseases is important for maintaining patients' well-being.

Nursing Care and Quality of Life Enhancement

Nurses play an important role in improving the living standards of hemodialysis patients because they are in constant contact with them during treatment and can monitor

physical, mental, and social problems as treatment progresses. Nursing assistance is not limited to technical aspects of treatment; it also supports improvements in patient care units.

Theoretical Framework

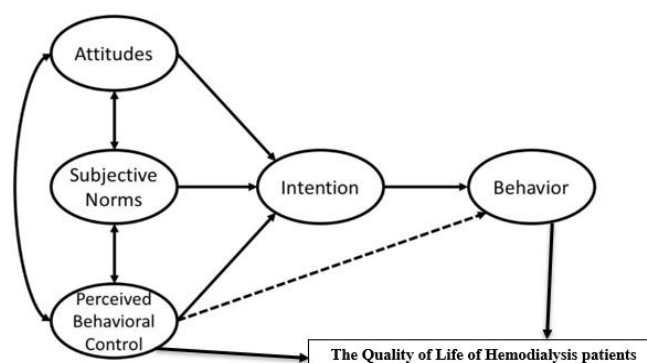


Figure 1

Theoretical Framework of the study through Theory of Planned Behavior (TPB)

The theory proposes that behavioral intentions, which primarily determine human behavior, are shaped by three constructs: attitude toward the behavior, subjective norms, and perceived behavioral control. Attitude refers to an individual's positive or negative evaluation of performing a particular behavior; subjective norms refer to perceived social expectations or support from significant individuals; and perceived behavioral control refers to an individual's perception of having the ability, resources, and opportunities to perform the behavior. These constructs arise from behavioral, normative, and control beliefs, respectively, and collectively influence behavioral intention and the likelihood of performing a particular behavior.

Applying TPB to the present study is particularly relevant because hemodialysis requires patients to engage in continuous self-management behaviors. The demands of treatment extend beyond the dialysis session and include adherence to medications, dietary and fluid management, symptom monitoring, attendance at scheduled treatments, physical activity, and coping with psychological and social challenges. Positive attitudes toward these behaviors may encourage adherence, supportive social influences may strengthen motivation, and greater perceived behavioral control may enhance patients' confidence in managing their condition. Conversely, negative attitudes, limited social support, and low perceived control may create barriers to appropriate self-management and may contribute to poorer health outcomes and quality of life.

Consequently, the Theory of Planned Behavior offers a theoretical framework for understanding the ways patients engaged in hemodialysis may act. According to the theory, patients' health-related beliefs, social influences, and perceptions of their capacities may contribute to their enactment of health-promoting behaviors. These concepts serve as a theoretical basis in the study for identifying the factors related to patients' quality of life and recognizing the areas to be covered in the Quality-of-Life Enhancement Program. In this way, the suggested program may include the use of techniques that will improve positive attitudes that patients have toward health, create supportive social conditions, and boost patients' perception of control and self-management of their health.

Conceptual Framework

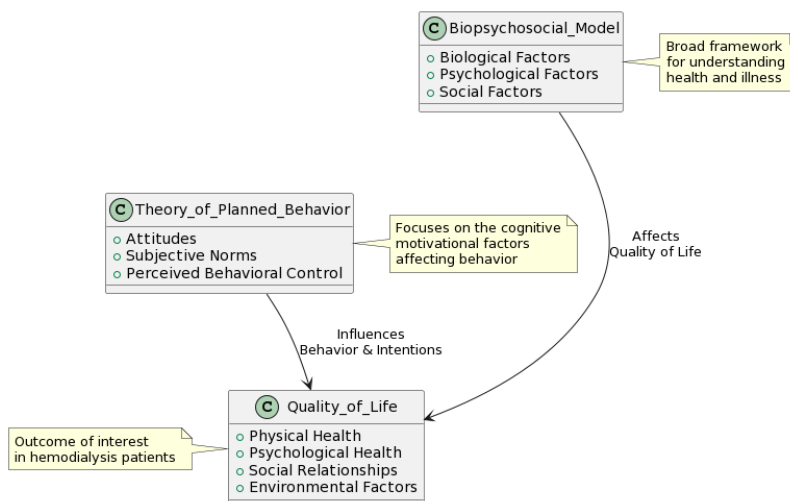


Figure 2
Paradigm of the Study

In this study, the conceptual framework centers on the interaction among physical health, psychological well-being, and social support in shaping quality of Life for patients on hemodialysis. Research by Brown et al. (2018) shows that physical health problems resulting from hemodialysis often contribute to psychological problems, though good social support may reduce these processes. Besides, according to the framework, quality of care provided by specialists, including understanding and a holistic approach by healthcare staff, is essential for the improvement of quality of life for patients.

METHODOLOGY

Research Design

The study employed a quantitative, non-experimental, descriptive-correlational research design to determine the quality of life and associated factors among hemodialysis patients. According to Rasyid et al. (2022), quality of life among patients undergoing hemodialysis may be examined in relation to various sociodemographic and clinical characteristics, supporting quantitative approaches to describe patient characteristics and examine factors associated with quality-of-life outcomes. The descriptive component of the present study was used to determine respondents' sociodemographic and clinical characteristics and their quality-of-life level in terms of physical health, psychological health, social relationships, and environmental health.

Population and Sampling Technique

The study population consisted of 156 patients receiving regular hemodialysis treatment at the selected dialysis facility in the City of San Fernando, Pampanga, based on the recorded patient census as of January 2024. The target population comprised individuals undergoing hemodialysis treatment who met the study's inclusion and exclusion criteria. This population was considered appropriate because the study specifically sought to determine the quality of life and associated factors among patients receiving hemodialysis.

The study used total enumeration sampling, which included all eligible individuals from the target sample. Total enumeration was appropriate because the identified population consisted of 156 patients, which was small enough for the researcher to include the entire eligible population rather than selecting only a subset. This use of total enumeration aligns with recent studies in medicine. For instance, a recent study conducted in the Philippines in 2023

also used total enumeration to identify the eligible patient population, demonstrating the efficiency of this technique in medical research. Similarly, a recent nursing study used total enumeration to include all eligible nurses who could respond to the study.

Data Gathering Procedure

Initially, the researcher received approval from the Ethics Review Board (ERB) of St. Bernadette of Lourdes College (SBLC). The researcher submitted certain documents, including the research protocol, for ERB review. In compliance with the ERB's directives, the researcher followed all procedures to ensure the study met the ethical standards prescribed for studies involving human subjects. After receiving ERB approval, the researcher obtained permission from the dialysis center management to conduct the study. The researcher sent a formal letter requesting permission, the ERB approval, and other required documents to the dialysis facility management.

The researcher communicated the research objectives, how the study would be carried out, that participation was voluntary, how long the questionnaire would take to complete, and how the data would be handled and reported. The researcher also explained that potential respondents could refuse to participate at any point in the study without consequences. Those who accepted the invitation were asked to read and sign the consent form before taking part in the research.

Data Analysis Procedure

The information acquired from the participants was processed, categorized, tabulated, and analyzed using appropriate descriptive and inferential statistics. The type of statistics was determined based on the aims of the study, the nature of the variables, and the research questions. The significance level for testing the null hypothesis was set at 0.05.

For Research Question 1, which aimed to gather information on the socio-demographic and clinical attributes of hemodialysis patients, including age, gender, employment status, duration and frequency of hemodialysis, and the presence of comorbid conditions, frequencies and percentages were used. The frequency helped determine the number of participants in each category whereas the percentage was calculated to find the proportion of respondents in each category.

For Research Question 2, the weighted mean was used to summarize respondents' responses and measure the quality-of-life level of patients undergoing hemodialysis in the areas of physical health, mental health, social relationships, and environmental health. By calculating the weighted mean, the overall quality of life level is determined based on the findings from the instrument used in the study. The obtained values were then interpreted according to the scoring and interpretation method used in the quality of life instrument selected for this research.

Ethical Considerations

This paper presents the ethical principles guiding the research involving human subjects. Before conducting the research, the researcher obtained approval from the SBLC Ethics Review Board and authorization from the management of the facility where the dialysis study took place. Eligible participants also received an informed consent form explaining the study's objective, process, duration, advantages, and disadvantages, as well as the confidentiality of the information provided and the respondents' rights.

RESULTS AND DISCUSSION

Socio-Demographic and Clinical Profile of the Respondents

The results present the socio-demographic and clinical characteristics of the 150 hemodialysis patients in the study. The breakdown by sex was fairly even, with 76 individuals (50.67%) being female and 74 individuals (49.33%) being male. This indicates that the study had a fair representation of males and females in the sample of respondents.

The most commonly stated cause of unhealthiness is hypertension, which was reported by 32.00% or 48 people. Diabetes was reported by 10.67% or 16 people, and heart disease was stated by six people, or 4.00%. Other reasons were reported by 21.33% (32 people). However, because 32.00% (48 respondents) did not reply, this must be considered when interpreting this variable. The overwhelming majority (59.33%, or 89 respondents) said they received help, while 40.67% (61 respondents) said they did not.

In terms of age, the largest group was those aged 60 to 69 years, making up 34 people, or 22.67%. The largest group was those aged 50 to 59 years, with 33 people or 22.00%. Twenty-seven respondents, or 18.00%, were aged 40 to 49 years. Twenty-two people, or 14.67%, were in the 70 to 79 age group. Six respondents, or 4.00%, were under 30 years old. Ten respondents, or 6.67%, were 80 years and older. Overall, the respondents were mostly older adults.

Taken together, the profile shows an equal mix of men and women. Their education levels and marital statuses varied. A large number were unemployed. Most relied on family or other sources for income. Many reported having some kind of illness. A significant number depended on social support.

These findings are supported by a recent study on hemodialysis patients, which reported that education, employment status, and financial income were associated with quality of life. The study further emphasized that socioeconomic circumstances are important determinants of quality of life among patients receiving hemodialysis. Similarly, research published in 2023 found that higher income and education were associated with better quality-of-life outcomes, while psychological difficulties such as anxiety and depression were associated with poorer physical and mental quality of life. More recent evidence also indicates that psychosocial factors, including social support, employment, education, and relationship status, contribute to health-related quality of life among people undergoing hemodialysis.

Therefore, these findings reinforce the view that hemodialysis patients' quality of life is influenced not only by their medical condition but also by socioeconomic circumstances and available social support.

Patient Experience During the Previous Two Weeks

Here are the respondents' experiences during the two weeks before the survey. Respondents reported a weighted mean for concentration ability of 3.33 and a standard deviation of 0.51, indicating good concentration ability. This shows that despite the treatment-related demands of hemodialysis, the respondents generally feel capable of maintaining concentration in daily activities. Respondents also reported perceptions of safety (weighted mean = 3.30) and moderate satisfaction with enjoyment of life (weighted mean = 3.29). These findings suggest that the respondents retained a sense of safety and enjoyment despite living with a chronic condition that requires regular treatment. The respondents obtained a weighted mean of 3.24 for their sense of meaning or purpose in life, indicating a

sense of purpose. This finding suggests that although illness demands may affect daily functioning, many respondents continue to find meaning in their lives.

Physical and Environmental Aspects of Quality of Life

This presents selected physical and environmental aspects of the respondents' quality of life. Respondents reported the highest weighted mean for perceived strength for daily activities, with a mean of 3.56. This indicates that the respondents generally perceived themselves as having adequate strength to perform routine activities. Acceptance of physical appearance obtained a weighted mean of 3.02, indicating that respondents generally demonstrated an acceptable level of acceptance of their physical appearance. This suggests that physical changes associated with chronic illness and long-term treatment did not completely undermine their perception of themselves.

Financial resources emerged as an important concern. The weighted mean of 2.89 was interpreted as insufficient financial resources. Because hemodialysis requires ongoing treatment and may involve expenses for transportation, medication, food, laboratory tests, and other healthcare needs, financial limitations may substantially affect patients' daily experiences. Access to information received a weighted mean of 3.16, indicating fair access. Adequate access to reliable health information matters because patients undergoing long-term treatment need ongoing information on disease management, medications, nutrition, treatment adherence, and self-care. Leisure opportunities obtained a weighted mean of 3.10, indicating adequate opportunities for recreation. In contrast, mobility obtained the lowest weighted mean of 2.88 and was interpreted as limited mobility. This suggests that restrictions on travel or access to desired places may be a significant concern among respondents. Overall, the results suggest that while respondents perceived adequate physical strength and acceptable physical appearance, financial limitations and restricted mobility remain areas requiring attention.

Overall, the findings indicate that respondents perceived adequate physical strength but had concerns about financial resources and mobility. The relatively favorable perception of strength suggests that many respondents remained able to perform daily activities despite their illness. However, insufficient financial resources and limited mobility emerged as key concerns that may limit patients' ability to access services, participate in social activities, and meet daily needs.

Satisfaction with Various Aspects of Quality of Life

The results present the respondents' level of satisfaction with different aspects of their quality of life. Respondents reported the highest weighted mean for personal relationships ($M = 3.51$, $SD = 0.40$). This was interpreted as moderate to high satisfaction. The finding indicates that relationships with family, friends, and other important persons may serve as an important source of emotional and social support among hemodialysis patients.

Overall, the respondents said they were most satisfied with their relationships. At the same time, they reported lower satisfaction with sleep, daily activities, and transportation. The high level of satisfaction with relationships shows that family, friends, and other important people likely give patients emotional help and practical support during long-term treatment. On the other hand, lower satisfaction with sleep and daily activities suggests that the challenges of chronic illness and hemodialysis still get in the way of normal routines and physical well-being.

These results align with studies that highlight how vital social support is to quality of life for people on hemodialysis. A 2024 study found that patients who felt they had social support also reported better outcomes. This included fatigue, less pain, fewer depressive symptoms, lower anxiety, better sleep quality, and a higher overall health-related quality of life. Another 2024 study focused on support among hemodialysis patients and found that emotional and informational support played a big role in improving quality of life. It also found that being married or in a long-term relationship was linked to emotional and affectionate support.

Emotional Experience and Life Satisfaction

Respondents scored 3.22 for life satisfaction. The score had a deviation of 0.78. This was seen as being somewhat happy. This means participants felt a level of happiness, but there were still things they wanted to improve. The average score for feelings like anger, frustration, anxiety, sadness, and feeling alone was 2.96. The standard deviation for this was 0.85. This was seen as happening often. The results show that these negative feelings still persist among the people who took part in the study. These feelings could be affecting how well they live their lives.

Respondents who answered in their own words said several things could help them feel better about their lives. These included family relationships, more money, adequate support from doctors and hospitals, faith, and better government leadership. These answers show that quality of life for people with hemodialysis includes different parts. It is not only about physical health.

The results suggest that a program to help people feel better about their lives should not focus only on physical health. It should also consider support, family help with money, spiritual health, and access to appropriate medical care. These things could be part of the program.

Therefore, the present findings highlight the importance of incorporating psychological support, family involvement, spiritual or faith-based support, and appropriate social and financial assistance into a Quality-of-Life Enhancement Program for hemodialysis patients.

Relationship between Socio-Demographic Characteristics and Quality of Life

Educational attainment showed a moderate positive correlation with quality of life ($r = 0.63$). This suggests that respondents with higher educational attainment tended to report higher quality-of-life scores. Education may improve access to health information, understanding of treatment requirements, and the ability to manage chronic illness. Support received from others also demonstrated a moderate positive correlation with quality of life ($r = 0.61$). This finding emphasizes the potential importance of family, friends, and other support networks in helping patients cope with the physical, emotional, and practical demands of hemodialysis. Employment status showed a moderate positive correlation ($r = 0.57$), while marital status demonstrated a moderate positive correlation ($r = 0.52$). These findings suggest that employment and interpersonal relationships may be associated with better perceived quality of life. Employment may provide financial resources and a sense of productivity, while marital or family relationships may provide emotional and practical support.



PROPOSED K.R.I.S.T.E.L. QUALITY OF LIFE ENHANCEMENT PROGRAM

K.R.I.S.T.E.L.

The K.R.I.S.T.E.L. Program is a proposed patient-centered nursing program designed to address the identified needs of hemodialysis patients based on the study findings.

CONCLUSIONS

- The respondents demonstrated varied socio-demographic and clinical characteristics. The sample was nearly equally distributed by sex and was predominantly composed of middle-aged and older adults. A considerable proportion was unemployed and dependent on children, spouses, pensions, or other sources of financial support. Most respondents reported continuing health concerns, and a majority reported receiving support from others.
- The respondents generally had good experiences in certain parts of quality of life, especially concentration, feeling safe, enjoying life, and having a sense of meaning or purpose. Still, the ongoing need for treatment shows the continuing demands of hemodialysis.
- The respondents felt they had the strength for everyday tasks and were happy with their physical appearance. They worried about not having enough money and having limited movement. These points show that the environment and economic conditions still matter for the quality of life of hemodialysis patients.
- Personal relationships were one of the parts of quality of life, showing that friends and family can be a big source of support. On the other hand, the respondents were not very satisfied with sleep, daily activities, and transportation. These areas need attention.
- The respondents were somewhat happy with their quality of life. Felt negative emotions fairly often. The open comments highlighted how family support, having finances, easy access to healthcare, faith, and social resources can make the quality of life better.
- Several selected characteristics demonstrated moderate relationships with overall quality of life. Educational attainment, support received from others, employment status, marital status, age bracket, and source of income demonstrated positive relationships, while sex, senior citizen membership, health status, and reasons for poor health demonstrated negative relationships. Health status demonstrated the strongest observed relationship with overall quality of life.
- The findings demonstrate that quality of life among hemodialysis patients is multidimensional and involves more than physical health. Psychological well-being,

social relationships, financial resources, transportation, mobility, healthcare access, and lifestyle also contribute to the patients' overall experience.

- The findings provide a reasonable basis for the development of the K.R.I.S.T.E.L. Quality of Life Enhancement Program. The proposed program responds directly to the areas identified for improvement while leveraging existing strengths such as family and social support.
- Since the study employed a descriptive-correlational design, the findings establish associations rather than causal relationships. The proposed K.R.I.S.T.E.L. Program should therefore be considered a study-based intervention proposal whose actual effectiveness requires future implementation and evaluation through an appropriate intervention research design.

RECOMMENDATIONS

Based on the findings and conclusions of the study, the following recommendations are suggested:

1. For Hemodialysis Patients

Hemodialysis patients are encouraged to actively participate in health education, self-management activities, appropriate physical activities, sleep-wellness strategies, and emotional-support interventions. Patients should also communicate concerns related to transportation, financial difficulties, sleep, mobility, emotional well-being, and daily functioning to their healthcare providers so providers can provide appropriate assistance and referrals.

2. For Family Members and Caregivers

Family members and caregivers are encouraged to stay actively involved in the care of hemodialysis patients. Since personal relationships and social support emerged as relative strengths, families should continue providing emotional, practical, and appropriate financial support while encouraging patients to maintain independence and participate in meaningful daily activities.

3. For Dialysis Nurses

Dialysis nurses are encouraged to incorporate routine assessment of quality-of-life concerns into patient care. Particular attention should be given to sleep, mobility, daily activities, emotional well-being, transportation, financial concerns, and access to health information. Nurses may also facilitate patient education, emotional check-ins, family involvement, and appropriate referrals.

4. For Nurse Managers and Healthcare Administrators

Nurse managers and healthcare administrators are encouraged to consider the integration of the K.R.I.S.T.E.L. Quality of Life Enhancement Program into appropriate dialysis-support activities. Institutional support may be provided through the allocation of educational materials, staff coordination, referral mechanisms, patient-support activities, and monitoring systems.

5. For the Multidisciplinary Healthcare Team

The multidisciplinary healthcare team is encouraged to adopt a coordinated approach in addressing the multidimensional needs of hemodialysis patients. Nephrologists, nurses, dietitians, physical therapists, psychologists or counselors, social workers, and community health workers may collaborate in addressing medical, physical, psychological, social, financial, transportation, and lifestyle concerns.

6. For Social Workers and Community Health Workers

Social workers and community health workers are encouraged to strengthen resource-linkage mechanisms for patients experiencing financial and transportation difficulties. A regularly updated directory of available healthcare assistance, social welfare services,

transportation resources, and community support programs may be developed and made accessible to patients and families.

7. For the Implementation of the K.R.I.S.T.E.L. Program

The proposed K.R.I.S.T.E.L. Quality of Life Enhancement Program may be reviewed by appropriate healthcare professionals and institutional authorities before implementation. The program should be adapted to the available resources, patient needs, staffing capacity, and policies of the dialysis facility.

8. For Program Monitoring and Evaluation

The proposed program should be monitored using appropriate implementation indicators such as attendance, participation, health education delivered, referrals completed, family participation, and patient feedback. Future evaluation should determine whether participation in the program produces measurable improvements in physical, psychological, social, environmental, and overall quality-of-life outcomes.

9. For Future Researchers

Future researchers are encouraged to conduct an intervention study to determine the effectiveness of the K.R.I.S.T.E.L. Program. A pretest-posttest, quasi-experimental, or randomized controlled design may be considered depending on feasibility and ethical requirements.

Future studies may also examine additional factors that were not included in the present study, such as dialysis adequacy, treatment complications, medication burden, nutritional status, sleep quality, depression, anxiety, caregiver burden, treatment adherence, and access to social welfare programs.

Future researchers are also encouraged to include hemodialysis duration, dialysis frequency, and specific comorbid conditions as variables, in line with the original research problem. These variables may provide additional information regarding the factors associated with quality of life.

10. For Future Replication

The study may be replicated in other dialysis facilities and different geographic areas using a larger sample size. Comparative studies may also be conducted to determine whether quality-of-life patterns differ according to age, sex, socioeconomic status, duration of treatment, dialysis frequency, comorbidities, or level of social support.

AI DECLARATION STATEMENT

Artificial intelligence tools were used to improve the language and formatting. The researcher worked alone on the conceptualization, data analysis, interpretation of results and the development of conclusions.

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