Analysis of the Effectiveness of Treatment of Hemodialysis Patients at the Hospital Nacional Guido Valadares (HNGV), Year 2024

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Abstract:

➤ *Introduction:*

This study focuses on assessing the effectiveness of treatment of hemodialysis patients at the Hospital Nacional Guido Valadares (HNGV). Hemodialysis is a critical treatment for individuals with chronic kidney disease (CKD), which progressively impairs kidney function over time. Despite its critical role in patient care, concerns about treatment efficacy and quality of care persist, necessitating a thorough investigation into current practices.

➤ *Objective:*

The primary objective of this research is to analyze the perceived effectiveness of hemodialysis treatment among healthcare professionals at HNGV in 2024. By evaluating their perspectives on treatment outcomes and quality of care, the study aims to identify areas for improvement and develop strategies to enhance patient management in the nephrology unit.

➤ *Method:*

This research utilizes a quantitative cross-sectional approach involving 33 healthcare workers from the nephrology department. Information was gathered using structured questionnaires that evaluated perceptions regarding treatment effectiveness, quality of care, and professional experiences. Statistical evaluations were conducted using the Chi-square test with SPSS version 21 software to analyse the relationships between variables.

➤ *Results and Discussion:*

The findings reveal that 66.7% of respondents believe the treatment is effective, while 33.3% perceive it as ineffective. Notably, 57.6% of participants rated the quality of care as poor. The statistical analysis yielded a p-value of 0.046 and a chi-square value of 5.400, indicating a significant relationship between treatment efficacy and healthcare professionals' perceptions. These results highlight the urgent need for improvements in resource management, staff training, and community education to optimize treatment outcomes.

➤ *Conclusion:*

In conclusion, although the majority of healthcare providers at HNGV recognize the benefits of hemodialysis treatment, there are ongoing worries about the standard of care. It is crucial to tackle these issues with focused strategies to enhance patient satisfaction and results. A collective effort that includes training, proper resource distribution, and community involvement is vital to foster kidney health and provide the best possible care for hemodialysis patients.

Keywords: Hemodialysis, Chronic Kidney Disease, Treatment Efficacy, Quality of Care, Healthcare Professionals.

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I. INTRODUCTION

Hemodialysis is an essential treatment option for people with chronic kidney disease (CKD), a long-term condition marked by the gradual decline of kidney function over time (Mitch & Devarajan, 2016; Levey et al., 2019). The word "hemodialysis" comes from the Greek word "hemo," meaning blood, and the Latin word "dialysis," which refers to the separation of substances in a solution (Brenner & Rector, 2016). This medical intervention typically employs an advanced dialysis machine to effectively filter and purify the blood (Khan et al., 2020). During the hemodialysis procedure, the machine extracts harmful waste products, such as urea and creatinine, along with excess fluids that build up when the kidneys are no longer able to perform their critical regulatory roles (Murray et al., 2016; Daugirdas et al., 2015).

The procedure takes place in a regulated clinical environment, typically three times a week, with each session lasting around three to five hours (Khan et al., 2020). A patient's blood is extracted through a vascular access point—commonly an arteriovenous fistula or graft (Locatelli et al., 2017)—allowing it to flow into the dialysis machine. Within the machine, the blood travels through a dialyzer, often called an artificial kidney, where it encounters a semi-permeable membrane that filters out small molecules and waste products while keeping larger, vital proteins and blood cells (Brenner & Rector, 2016; Daugirdas et al., 2015). The purified blood is subsequently returned to the patient's body. Hemodialysis not only serves as a crucial life-supporting treatment for individuals with severe kidney disease but also greatly improves their quality of life by aiding in the maintenance of fluid and electrolyte balance, thus preventing complications linked to chronic kidney disease (CKD) (Pardede, 1996; Akbari et al., 2018).

According to the World Health Organization (WHO), in 2015, it was estimated that chronic kidney disease (CKD) affected approximately 10% of the global population, corresponding to about 800 million individuals (WHO, 2015; Jha et al., 2013). Of these, roughly 1.5 million patients were receiving hemodialysis treatment, illustrating the significant impact of this disease worldwide (WHO, 2015; Liu et al., 2017).

The main goal of hemodialysis is to replicate the essential functions of the kidneys, primarily in the removal of waste substances like urea and creatinine as well as in the maintenance of body fluid and electrolyte balance (Khan et al., 2020). This is achieved through processes such as diffusion—where molecules shift from regions of higher concentration to those of lower concentration—and hemofiltration, which involves the movement of fluid across a semi-permeable membrane (O'Callaghan, 2009; Daugirdas et al., 2015).

Hemodialysis is generally performed three times a week, with each session lasting approximately three to four hours (Muttaqin & Sari, 2011; KDOQI, 2015). During treatment, a dialyzer—a complex filtration device—serves a critical function by pumping the patient's blood through its chambers. Inside these chambers, waste materials and excess electrolytes such as potassium and sodium are effectively separated and eliminated, thus helping to sustain the overall hydration and electrolyte balance of the body (Brunner & Suddarth, 2001; Locatelli et al., 2017).

In addition to the physical aspects, the hemodialysis experience also involves careful monitoring of cardiovascular stability, as patients may experience fluctuations in blood pressure during sessions (Fried et al., 2015). Proper education and support for patients and their families are crucial elements for successful long-term management of chronic kidney disease (CKD) and adherence to treatment protocols (Zhang et al., 2017).

Data from the Guido Valadares National Hospital (HNGV, 2024) indicates a notable increase in the number of patients undergoing hemodialysis in 2024, reflecting a worrying trend in the prevalence of CKD in the region. Specifically, patient counts rose from 150 in 2021 to 138 in 2022, followed by a significant jump to 179 in 2023. This trajectory suggests an increasing burden on healthcare resources and a pressing need for enhanced renal care (HNGV, 2024; Jha et al., 2013).

The mortality rates associated with this patient population are alarmingly high, with recorded deaths numbering 62 in 2021 and 63 in 2023, underscoring the critical nature of CKD and its potential to lead to severe health complications (HNGV, 2024; Mapes et al., 2006). The consistently high mortality rates coupled with limited recovery prospects point to the urgent requirement for effective medical interventions, including timely hemodialysis (Ruggenenti et al., 2012).

Research highlights that adherence to hemodialysis treatment is paramount for improving patient survival rates and quality of life (Kallenbach, 2015). Non-compliance with prescribed medical regimens can result in the accumulation of harmful toxins in the body, which may precipitate severe health complications and diminish the overall effectiveness of treatment (Kallenbach, 2015; Ghaffari et al., 2018). Furthermore, key factors influencing the success of hemodialysis treatment include strict adherence to dietary guidelines, fluid management, and comprehensive patient education (Susilawati et al., 2018; KDOQI, 2015). Empowering patients with knowledge about their condition and treatment options is essential for fostering compliance and optimizing health outcomes (Zhang et al., 2017). By addressing these critical areas, healthcare providers can enhance the effectiveness of hemodialysis programs and improve the prognosis for patients with CKD (Locatelli et al., 2017).

The effectiveness of hemodialysis treatment relies not only on the advanced technology and state-of-the-art equipment utilized but also significantly on the training, experience, and competence of the healthcare professionals administering the care (Khan et al., 2020; Daugirdas et al., 2015). Comprehensive training programs focusing on the

intricacies of dialysis technology, patient management, and emergency protocols are crucial in equipping healthcare providers with the necessary skills to deliver high-quality care (Ladesvita & Sukmarini, 2019; KDOQI, 2015). Investing in human resources and infrastructure, including well-designed dialysis units and access to essential supplies, is vital to ensure that patients with chronic kidney disease (CKD) receive optimal treatment, ultimately improving their quality of life (Ladesvita & Sukmarini, 2019; Locatelli et al., 2017).

Furthermore, integrating modern technologies, such as telemedicine, advanced data analytics, electronic health records, and robust data management systems, can significantly enhance clinical monitoring and analysis (Manguma et al., 2014; Alhassan et al., 2020). These advancements facilitate precise tracking of patient health metrics, timely interventions, and personalized treatment plans, all of which contribute to improved treatment outcomes and patient satisfaction (Manguma et al., 2014; Rojas et al., 2018). By fostering a collaborative environment where technology and skilled professionals work in tandem, healthcare systems can better address the complex needs of CKD patients and ensure the highest standards of care (Zhang et al., 2017; Kallenbach, 2015).

II. METHOD

The research design employed in this study is a robust quantitative methodology, utilizing a cross-sectional approach to meticulously investigate critical issues related to the effectiveness of Hemodialysis treatment. This systematic approach facilitates the comprehensive collection of data, allowing for rigorous statistical analysis of the responses gathered, as indicated by Riduwan (2013) and Sugiyono (2013).

The study was conducted at the Nephrology Unit of the Guido Valadares National Hospital in Dili, a facility renowned for its dedicated care of patients suffering from renal disorders. The data collection period captures a snapshot of the treatment dynamics within this specialized unit. The target population for this research encompassed all health professionals working in the nephrology unit, totaling 33 individuals, as highlighted by Riduwan (2010). Given the relatively small size of this population, a comprehensive census survey was adopted, harnessing the insights of all 33 healthcare professionals as the sample for this research. This inclusive sampling approach ensured that every voice within the nephrology team was represented, enriching the findings with diverse perspectives.

The instruments employed for data collection were varied and thoughtfully designed to gather multifaceted insights:

➤ *Questionnaires:*
A meticulously structured questionnaire (close-ended questionnaires) was developed to extract pertinent information regarding the effectiveness of hemodialysis treatment among patients. The questionnaire addressed various dimensions of treatment, including patient outcomes, effectiveness and quality of treatment, and overall satisfaction with the care provided, thereby capturing a holistic view of the treatment experience (McFadden et al., 2016; Bowling, 2009).

➤ *Interviews:*
In-depth interviews were conducted with a selection of healthcare professionals to delve into their perceptions and lived experiences concerning hemodialysis treatment. This qualitative data collection method sought to unveil nuanced insights that quantitative measures alone could not capture, as noted by Sugiyono (2015; Creswell, 2014). The interviews provided rich narratives and personal reflections on the intricacies of patient care in the nephrology setting (Thorne et al., 2004).

➤ *Direct Observations:*
Researchers engaged in direct observations within the hemodialysis environment, meticulously recording the interactions, behaviors, and practices between healthcare professionals and patients during treatment sessions. This observational data added depth to the findings from the surveys and interviews, contextualizing the statistical results and offering a vivid portrayal of the day-to-day realities of patient care in this critical setting, as described by Sugiyono (2015; Patton, 2015).

Data analysis was executed using a quantitative descriptive approach, leveraging the capabilities of SPSS version 21 software for statistical evaluation. The analysis included:

➤ *Univariate Analysis:*
This technique was employed to elucidate the characteristics of each variable, offering an insightful overview of the respondents' demographic and professional profiles and questionnaire responses, as Notoadmodjo (2018) outlined.

➤ *Bivariate Analysis:*
A thorough bivariate analysis explored relationships between different variables within the dataset. The Chi-square test was utilized to uncover significant associations between health professionals' perceptions and various factors influencing treatment effectiveness, as emphasized by Sugiyono (2015).

This multifaceted data collection and analysis approach aimed to provide a comprehensive understanding of Hemodialysis treatment practices and outcomes from the insightful perspective of health professionals within the nephrology unit. The findings from this research are anticipated to yield valuable insights that can drive improvements in patient care and enhance treatment efficacy in the ever-evolving field of nephrology.

III. RESULTS

The findings of this comprehensive research were gathered at the Nephrology Unit of the Guido Valadares National Hospital, located in Dili, in the year 2024. This study focused on a detailed analysis of the demographic characteristics of the 33 participating health professionals. Key factors examined included gender, age, education level, and specific profession. The data collected offers valuable insights into the workforce composition within the unit and is compiled in the following tables to facilitate a clearer understanding of the participants' demographic profile.

The distribution of health personnel attendance by sex from the Nephrology Unit of the Guido Valadares National Hospital for the year 2024 reveals nuanced insights into the gender composition of the staff. Out of 33 respondents surveyed, 18 are male, comprising 54.5% of the sample, while 15 are female, making up 45.5%. This data highlights a slight male predominance among the health personnel in the unit. Such a distribution could reflect various factors, including recruitment practices, professional preferences, and gender dynamics within the healthcare sector. Understanding these demographics is essential for addressing potential gender disparities and implementing strategies to promote a more balanced representation in healthcare professions.

Table 1: Distribution of Healthcare Personnel Attendance by Age from the Nephrology Unit of the Guido Valadares National Hospital, 2024

Age Group	Frequency	Percentage (%)
20 -24	1	3.0
25-29	10	30.3
30-34	6	18.2
35-39	3	9.1
40-44	6	18.2
45-49	4	12.1
>=50	3	9.1
Total	**33**	**100**

Source: Primary Data from the Nephrology Unit, Hospital Nacional Guido Valadares, Year 2024.

The accompanying table illustrates the age distribution of health personnel, highlighting the varying age demographics within this workforce. The most significant segment of respondents is in the 25–29-year age range, which accounts for 10 individuals, representing 30.3% of the total respondents. This suggests a youthful and potentially dynamic workforce, likely contributing to innovative practices in health service delivery.

Following this, the 30-34-year age group comprises six respondents, making up 18.2% of the total. This indicates a solid presence of health personnel in their early to mid-career stages who may bring experience and a desire for further professional growth. Similarly, the 40–44-year age range also includes six respondents, again at 18.2%,

suggesting a notable representation of mid-career professionals who may be taking on leadership roles and responsibilities in their respective fields.

In contrast, the younger age category of 20-24 years has the least representation, with only one respondent accounting for just 3.0%. This highlights a potential gap in attracting fresh talent into the healthcare sector at the entry level. Additionally, the age group of over 50 years has a somewhat limited presence, with three respondents, which translates to 9.1%. This might reflect early retirement trends or a changing workforce demographic within the health sector.

Overall, this age distribution underscores a predominantly younger workforce, with specific age groups bringing varying levels of experience and expertise while pointing to areas where recruitment efforts could be focused to attract a more diverse age range of health personnel.

Table 2: Distribution of Attendance of Health Personnel by Profession from the Nephrology Unit of the Guido Valadares National Hospital, 2024

Professional Level	Frequency	Percentage (%)
General Nurse	27	81.8
Nurse Assistant	1	3.0
General doctor	1	3.0
Nephrologists	4	12.1
Total	**33**	**100**

Source: Primary Data from the Nephrology Unit, Hospital Nacional Guido Valadares, Year 2024.

In Table 2 above, the composition of respondents reveals a predominant presence of General Nurses, with a total of 27 individuals accounting for 81.8% of the sample. This significant representation underscores the essential role that nursing professionals play in healthcare settings. In contrast, there is a minimal representation of other roles, with only 1 Nurse Assistant, representing 3.0%, and 1 General doctor, accounting for 3.0%. Additionally, only 12.1% of the four respondents are Nephrology Specialists, highlighting the group's valuable presence of specialized knowledge. Overall, the data illustrates a strong emphasis on nursing staff among the participants, reflecting their crucial involvement in patient care and health services.

Table 3: Distribution of Healthcare Personnel Attendance by Level of Education from the Nephrology Unit of the Guido Valadares National Hospital, 2024

Level of Education	Frequency	Percentage (%)
Licentiate	23	69.7
Baccalaureate	6	18.2
Specialization in Nephrology	4	12,1
Total	**33**	**100**

Source: Primary Data from the Nephrology Unit, Hospital Nacional Guido Valadares, Year 2024.

Table 3 provides a detailed overview of the educational qualifications of the health personnel surveyed. Among the respondents, a significant majority possess a Licentiate Degree, with 23 individuals representing 69.7%. This degree typically signifies advanced education, often equivalent to a bachelor's degree, and indicates a strong foundation in the relevant health field. Following this group, six respondents, making up 18.2%, hold a Baccalaureate degree, which generally reflects a basic level of higher education. Lastly, there are four respondents, accounting for 12.1%, who specialized in nephrology and demonstrate specialize in nephrology and demonstrate a commitment to advanced training and expertise in kidney health. Overall, the data points to a highly educated workforce within the health sector, predominantly professionals with robust higher education qualifications.

This study evaluates the perceived efficacy of hemodialysis treatment as reported by healthcare personnel within the Nephrology Unit of the Guido Valadares National Hospital. 33 healthcare workers, including nephrologists, general medical doctors, and nurses, were surveyed to gain insights into their perspectives on treatment outcomes.

The survey results highlighted a notable concern regarding the effectiveness of the current treatment protocols employed in our practice. Of the total respondents, 22 individuals, representing 66.7%, expressed confidence in the efficacy of the treatment, suggesting that they believe it meets the anticipated effectiveness standards. This positive feedback indicates a degree of satisfaction with the treatment outcomes among this group. Conversely, 11 respondents, accounting for 33.3%, found the treatment ineffective. This discrepancy in perceptions raises important questions about the treatment's overall impact and prompts a deeper exploration into the underlying reasons behind this divergence in experiences.

In a comprehensive evaluation of hemodialysis treatment quality from the perspective of health personnel within the Nephrology Unit at the Guido Valadares National Hospital in 2024, the results revealed significant insights. Out of the total respondents, a majority of 19 personnel, accounting for 57.6%, expressed dissatisfaction with the quality of hemodialysis care, categorizing it as poor. In contrast, 14 respondents, representing 42.4%, regarded the treatment as good. This distribution of opinions not only underscores a prevailing concern about the standards of care but also highlights the urgent need to address the factors contributing to perceived inadequacies in patient treatment outcomes and overall service delivery in the unit.

Table 4: Treatment Efficacy Analysis from the Nephrology Unit of the Guido Valadares National Hospital, 2024

Effectiveness	Treatment of Hemodialysis Patients				Total		P = value	X²	CI
	Poor Treatment		Good Treatment						
Ineffective	9	27.3%	2	6.1%	11	(33.3%)			
Effective	10	30.3%	12	36.4%	22	(66.7%)	0.046	5.400	95%
Total	19	57.6	14	42.4%	33	(100%)			

Source: Primary Data from the Nephrology Unit, Hospital Nacional Guido Valadares, Year 2024.

Table 4 presents a comprehensive analysis of the treatment efficacy of hemodialysis patients at the Nephrology Unit of the Guido Valadares National Hospital in 2024. The data is categorized into two main effectiveness groups: "Ineffective" and "Effective," each further divided into "Poor treatment" and "Good treatment." Here's a detailed breakdown of the findings: Of the 33 respondents, 22 (66.7%) believe the hemodialysis treatment is effective, while 11 (33.3%) consider it ineffective. This indicates a general perception of effectiveness among most healthcare professionals, suggesting that the treatment meets the expected clinical standards for most patients. Within the ineffective treatment category, 9 individuals (27.3% of the total) rated the treatment as poor, and 2 (6.1%) rated it as good. This indicates that while some professionals recognize the treatment's ineffectiveness, a small portion still perceives it as having some positive outcomes, although these are not satisfactory. In contrast, 10 respondents (30.3%) rated the effective treatment as poor, while 12 (36.4%) rated it as good. This suggests that even among those who find the treatment compelling, there are significant concerns regarding its quality, as nearly half perceive it as inadequate.

The p-value of 0.046 indicates a statistically significant relationship between the treatment's efficacy and healthcare professionals' perceptions ($p < 0.05$). The chi-square value of 5.400 further supports this significance, suggesting that the differences observed in treatment efficacy ratings are unlikely to have occurred by chance. The confidence interval (CI) of 95% implies a high level of certainty that the observed relationships are valid. This confidence level reinforces the need for immediate attention to the factors affecting treatment efficacy.

The data in Table 4 highlights a significant divide in perceptions regarding the effectiveness of hemodialysis treatment among healthcare professionals. While most acknowledge the treatment's efficacy, many express concerns about its quality. The statistical analysis underscores the importance of addressing these concerns to improve patient care and treatment outcomes. There is an urgent need for systemic changes to enhance the quality of hemodialysis treatment, which may include better resource allocation, staff training, and patient education initiatives.

IV. DISCUSSION

The analysis presented in Table 4 reveals a concerning landscape regarding the effectiveness of hemodialysis treatment among the 33 interviewees. Of these participants, 11 individuals, constituting 33.3%, expressed that the treatment was ineffective. In contrast, a more significant segment, comprising 22 individuals or 66.7%, identified the treatment as practical. However, this distribution of responses raises alarming questions about the overall quality of care provided, as a striking 57.6% of respondents characterized their experiences with the treatment as inadequate or poor (Ruggenenti et al., 2012; Mapes et al., 2006). These findings underscore an urgent call to action for significant enhancements in managing and delivering hemodialysis services at the Guido Valadares National Hospital, emphasizing the necessity for a comprehensive review and improvement strategy to meet patient needs.

A study by Kurella et al. (2005) found that patient satisfaction with hemodialysis treatment was significantly correlated with the perceived quality of care, where 60% of patients rated their treatment as inadequate. This aligns with the study's findings regarding patient dissatisfaction and highlights the need for quality improvement initiatives (McFadden et al., 2016; Khan et al., 2020). Furthermore, enhancing patient education, staff training, and resource allocation are critical to improving overall treatment experiences and outcomes (Locatelli et al., 2017; Zhang et al., 2017).

Statistical analysis using the Chi-square test yielded a value of $X^2 = 5.400$ and a P-value of 0.046, indicating a statistically significant relationship between the treatment's efficacy and health professionals' perceptions ($p < 0.05$). Therefore, we reject the null hypothesis and accept that the efficacy of treatment is related to the quality of care provided (Gibson et al., 2013).

To ensure the effectiveness of hemodialysis treatment, it is crucial to invest in the continuous training of health professionals. This training should equip them with the necessary skills and knowledge to perform procedures effectively. It must encompass not only technical aspects but also the use of appropriate technologies to optimize care processes, which are vital for patient safety (Ladesvita & Sukmarini, 2019; KDOQI, 2015).

The results indicate that 57.6% of professionals believe the treatment is inadequate, highlighting the urgent need for significant financial investment in the nephrology unit. Proper resource allocation is essential to address emerging needs and enhance the quality of care (Silalahi, 2006; Ruggenenti et al., 2012). Research by Kurnatowska et al. (2016) indicates that inadequate funding and resources in nephrology units directly impact patient outcomes and satisfaction. The study emphasizes the importance of financial investment in improving the quality of care delivered to hemodialysis patients (McFadden et al., 2016).

Moreover, the healthcare team must implement strategies that raise community awareness about kidney failure and its risk factors. Health education can promote early diagnosis and improve treatment adherence, leading to better clinical outcomes (Wulan & Emaliyawati, 2018; Jha et al., 2013). A systematic review by Choudhury et al. (2019) found that health education significantly improved patient knowledge about kidney disease, leading to better adherence to treatment and improved quality of life. This reinforces the healthcare team's need to implement community awareness strategies (Zhang et al., 2017; Alhassan et al., 2020).

Additionally, previous studies, such as the one conducted by Tri et al. (2018), have demonstrated that the duration of hemodialysis, treatment adequacy, and blood flow speed significantly influence patients' quality of life. Specifically, the study highlighted that inadequate dialysis, often characterized by lower blood flow rates, is associated with increased morbidity and mortality among chronic hemodialysis patients. These findings underscore the importance of a comprehensive approach to optimize hemodialysis care and promote kidney health within the community. This is supported by research conducted by Rhee et al. (2017), which found that prolonged hemodialysis sessions were associated with improved patient satisfaction and better clinical outcomes. The study emphasized that longer treatment durations can enhance the overall effectiveness of dialysis, leading to better health-related quality of life for patients.

These studies highlight the critical need for healthcare providers to optimize hemodialysis treatment parameters to improve patient experiences and outcomes.

V. CONCLUSION

The evaluation of hemodialysis treatment effectiveness at the Hospital Nacional Guido Valadares (HNGV) offers important insights into the current status of renal care in Timor-Leste. While the majority of healthcare professionals view the treatment as effective, 33.3% expressed dissatisfaction with its effectiveness. This gap underscores the urgent need to re-evaluate care practices and treatment protocols to guarantee that all patients receive the best possible care. The results suggest that the quality of care significantly impacts patient satisfaction and treatment results.

Furthermore, the statistical evaluation highlights a significant correlation between the effectiveness of treatment and the perceptions of healthcare professionals. A p-value of 0.046 alongside a chi-square value of 5.400 indicates that enhancing the quality of care may result in improved patient outcomes. Committing to ongoing training and education for healthcare workers is vital to boost their competencies and knowledge, which in turn will lead to better patient care practices. An all-encompassing approach focused on professional growth and the allocation of resources will be essential to tackle the identified deficiencies in service delivery.

Raising awareness and educating the community about chronic kidney disease (CKD) and its management are essential for enhancing health results. Successful health education programs can empower patients and their families, improve compliance with treatment regimens, and support early detection of the disease. By increasing understanding of risk factors and encouraging proactive health actions, the healthcare team can reduce the incidence of CKD and its related complications in the area.

To enhance the effectiveness of hemodialysis treatment at HNGV, targeted interventions should focus on improving resource management, providing staff training, and engaging the community. By tackling the recognized challenges, patient satisfaction and outcomes can be improved, allowing the healthcare system to better handle the increasing burden of chronic kidney disease. It is essential for all stakeholders to work together to promote kidney health and elevate the quality of life for patients receiving hemodialysis.

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