



Enhancing Patient Outcomes: The Role of Nursing in Home Dialysis Assistance and Education

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Abstract:

Background: With an aging global population, the incidence of kidney failure and dialysis treatment among older adults is increasing. Home dialysis modalities, including peritoneal dialysis (PD) and home hemodialysis (HHD), offer benefits such as lifestyle flexibility and improved cardiovascular outcomes. However, challenges like frailty, caregiver strain, and complications hinder widespread adoption, particularly among elderly individuals.

Aim: This review explores the role of nursing in enhancing home dialysis outcomes for older adults through assistance and education.

Methods: A narrative review synthesizes findings from global registries, surveys, and clinical studies to identify barriers and opportunities in home dialysis for elderly patients. Special emphasis is placed on nursing interventions and educational strategies to address biases, complications, and patient-centered goals.

Results: While home dialysis adoption among older adults is increasing in regions like the United States, growth remains limited elsewhere. Key challenges include biases among healthcare teams, high mortality rates in PD, and patient apprehension. Nursing education and personalized care plans have proven effective in mitigating these barriers. For instance, targeted training significantly reduced nurses' reluctance to

recommend home dialysis for older patients. Strategies such as respite care, incremental dialysis initiation, and infection prevention also improved outcomes.

Conclusion: Nurses play a pivotal role in addressing the complexities of home dialysis for older adults. By providing tailored support, managing treatment-related complications, and prioritizing quality of life, nurses can facilitate successful adoption and improved patient outcomes. Enhanced education and systemic support are critical for sustaining these efforts.

Key Words: Home dialysis, peritoneal dialysis, elderly patients, nursing education, patient outcomes

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Introduction:

With the expansion of the world population, an increasing percentage of elderly individuals diagnosed with kidney failure are commencing dialysis treatment. The most recent European Renal Association Registry Annual Report indicates that persons aged ≥ 75 years exhibit the highest incidence and prevalence of kidney replacement therapy, with rates of 539 and 3154 per million in the age-related population, respectively [1]. The increase may be ascribed to several variables, such as modifications in eligibility criteria, improved access to dialysis, superior results for older persons, and effective management of comorbidities, highlighting the multifaceted character of rising dialysis utilization [2]. Irrespective of the underlying factors, dialysis poses distinct obstacles for elderly individuals, especially with home dialysis.

Home dialysis modalities, such as peritoneal dialysis (PD) and home hemodialysis (HHD), have been in existence for decades. In certain areas, including the United States, there has been a notable increase in home dialysis adoption among older persons, reflecting more acceptance of this option as viable for this age. The United States Renal Data System Annual Report indicates that the incidence of home dialysis among patients aged 80–99 years has more than doubled in the past decade, rising from 3.2% to 8.2%, while prevalence has nearly doubled from 4.2% to 7.8% [3]. Nonetheless, this expansion must be evaluated against baseline rates, as additional rises may encounter constraints. The Australian and New Zealand Dialysis and Transplant Registry (ANZDATA) indicated negligible rise in home dialysis among individuals aged ≥ 75 years from 2016 to 2020, with peritoneal dialysis (PD) incidence increasing slightly from 13.8% to 14.0%, and prevalence growing from 20.3% to 20.6% [4]. The heightened utilization of home dialysis among elderly individuals in certain nations is presumably associated with its pragmatic advantages. Primary benefits encompass enhanced schedule flexibility, facilitating alignment with lifestyle and caregiver assistance, as well as increased hemodynamic stability. Peritoneal dialysis (PD) facilitates incremental molecule elimination, improving cardiovascular stability, whereas intensive home hemodialysis (HHD) provides enhanced blood pressure regulation [5, 6]. Notwithstanding these advantages, considerable hurdles hinder the care of elderly individuals undergoing home dialysis. The adoption of home dialysis among patients aged 65 and older varies across Europe, with a decreasing incidence of peritoneal dialysis in several nations [7–11].

This heterogeneity may indicate disparities in healthcare professional expertise, organizational limitations, and financial structures [12, 13]. Moreover, nephrologists and healthcare practitioners may regard older persons, especially those with physical or cognitive disabilities, as less appropriate candidates for home dialysis. Further obstacles encompass treatment sufficiency, complications, caregiver strain, and frailty-related concerns, all of which are exacerbated in this demographic. Significantly, although home dialysis frequently demonstrates outcomes that are equivalent to or higher than in-center hemodialysis (HD), the overall mortality risk for older persons using peritoneal dialysis (PD) remains elevated and, in certain studies, surpasses that of in-center HD. The absence of agreement on the definition of "older adults" hinders research and therapeutic decision-making, as chronological age does not correspond to biological age, and assessments of frailty and functional status are variable. Confronting these issues necessitates customized techniques, including aided home dialysis, personalized treatment plans, and revised success metrics to correspond with patient-centered outcomes. This narrative review examines the difficulties in managing elderly people undergoing home dialysis and suggests methods to address these concerns.

Perceptions and Biases Among Healthcare Teams Towards Home Dialysis for Older Adults

Not all healthcare providers regard home dialysis as a feasible alternative for older persons, especially those with age-related disabilities. A poll of UK nephrologists indicated that merely 9% supported peritoneal dialysis for patients over 70 years, in contrast to 35% who advocated hemodialysis. Factors like impaired vision, diminished motor power, and cognitive deficits further diminished support for Parkinson's disease. An online study of dialysis nurses in Canada revealed that home dialysis nurses supported home treatment for patients over 70 years, but in-center hemodialysis nurses preferred in-center care. This indicates that clinical experience and skill may affect modality preferences. Implicit biases may influence perceptions of home dialysis among elderly persons. A French poll of nephrologists revealed demographic disparities, with younger nephrologists advocating for home dialysis due to its flexibility, whilst older practitioners favored hemodialysis for its perceived efficacy [17]. These biases likely result in reduced initiation rates of PD among older persons [1–3, 18].

Education serves as a crucial method to alleviate these biases. Standardized pre-dialysis education that assesses all treatment alternatives and corresponds with patient values can enhance the desire for and adoption of home dialysis [19]. Moreover, it is essential to teach nephrology healthcare practitioners to administer home dialysis proficiently. A survey of fellowship training indicated that several trainees felt inadequately equipped to handle home dialysis modalities, highlighting the necessity for extensive educational programs [20]. Promisingly, focused educational programs have demonstrated the ability to positively alter perceptions. For example, following an educational initiative for nurses addressing obstacles to home dialysis, the percentage of those who deemed treatment inappropriate for persons over 70 years decreased from 26% to 10% [21]. Reimbursement policies additionally affect the use of home dialysis. Numerous systems favor in-center hemodialysis for its profitability, which may hinder the adoption of home dialysis. Reallocating resources, such as diverting transportation expenses for in-center hemodialysis patients to support home dialysis programs, may improve its financial sustainability [24, 25]. Performance factors linked to payments may further motivate providers to advocate for home dialysis [25].

Prioritizing and Optimizing Outcomes for Older Adults Receiving Home Dialysis

A major difficulty affecting provider perceptions of home dialysis is the evidence indicating inferior results, especially among elderly patients receiving peritoneal dialysis (PD). Research demonstrates that elderly individuals undergoing peritoneal dialysis exhibit a markedly elevated mortality risk (pooled relative risk 2.45, 95% confidence interval 1.36–4.40) in comparison to their younger counterparts. Moreover, results vary among dialysis modalities in older patients. A systematic study of Korean patients aged ≥ 65 years indicated a pooled hazard ratio for mortality of 1.10 (95% confidence interval 1.01–1.20) for peritoneal dialysis (PD) compared to hemodialysis (HD), with an increased risk for individuals with prolonged dialysis duration or diabetes. Recent research indicate that outcomes for older persons on PD may have enhanced. Data from Australia and New Zealand revealed that for patients aged ≥ 65 years, the adjusted mortality risk was diminished with home hemodialysis (HHD) compared to in-center hemodialysis. Earlier studies (1998–2002) indicated an elevated mortality risk for PD patients, however more current data (2013–2017) demonstrated similar risks between PD and in-center HD [28]. While survival comparisons among dialysis modalities are often discussed, it is clear that selecting a modality based only on expected survival is an inadequate approach. The Standardized Outcomes in Nephrology-Hemodialysis (SONG-PD) study, encompassing 126 patients and caregivers, indicated that although mortality was the second most significant outcome, older participants (≥ 55 years) emphasized other factors, including PD-related infections, fatigue, travel flexibility, time flexibility, and employment capacity [29]. These findings emphasize the necessity of prioritizing quality-of-life factors over simply survival when choosing dialysis modalities for elderly individuals.



Figure 1: Home Dialysis Machine.

Defining Dialysis Adequacy and Goals in Older Adults

In contrast to death, quality of life is acknowledged as a more significant result for elderly individuals receiving dialysis. Therefore, dialysis adequacy must be customized to meet the specific requirements of each patient. The 2020 International Society of Peritoneal Dialysis (ISPD) guidelines and the Standardized Outcomes in Nephrology-Hemodialysis advocate for a tailored, goal-oriented approach to assess dialysis adequacy in older persons [30, 31]. This methodology incorporates elements like comorbidities, clinical appropriateness for PD or HHD, the influence of simultaneous therapies, patient preferences, caregiver assistance, and long-term treatment goals. Home-administered dialysis may offer further advantages, such as increased autonomy, tailored therapy, and the removal of transportation obstacles, hence enhancing patient well-being.

Optimizing the Initiation of Home Dialysis in Older Adults

Optimal commencement of home dialysis is essential for enhancing patient experiences and outcomes among older persons. Many patients, however, express worry and apprehensions upon initiating home hemodialysis (HHD), frequently linked to the intrusive characteristics of the sickness and a perceived detachment from medical support [32]. Strategies like respite care and tailored support throughout care transitions, including the initiation of dialysis, may mitigate these apprehensions [33]. Evidence indicates that early commencement of chronic dialysis does not yield enhanced results [34], and the majority of guidelines advocate postponing initiation unless clinically warranted by acute or subacute diseases [35]. Research shows that older persons commencing peritoneal dialysis (PD) have an elevated mortality risk when initiating treatment with an estimated glomerular filtration rate (eGFR) ≥ 7.5 compared to those with eGFR < 5 mL/min/1.73 m² [36]. This observation may indicate indication bias, as patients with declining health are more prone to initiate dialysis sooner, which is associated with increased mortality risks. Innovative strategies, such as urgent-start peritoneal dialysis (PD), which entails catheter insertion and PD commencement within two weeks, have demonstrated potential in enabling prompt PD starting with

positive results [39]. Moreover, the utilization of implanted PD catheters facilitates scheduled initiations, hence diminishing the necessity for temporary HD [40]. Referrals to transitional care units have proven useful in enhancing patient experiences during unanticipated in-center hemodialysis initiations, hence facilitating the adoption of peritoneal dialysis [41]. In home hemodialysis (HHD), training duration is a critical factor, as older persons typically necessitate prolonged periods to acquire proficiency in home-based dialysis methods. Programs that permit prolonged training (median 75 days) can enhance the successful deployment of HHD [42]. Incremental dialysis beginning, defined by a progressive escalation in dialysis intensity, has become a feasible alternative for elderly individuals. Research on incremental peritoneal dialysis (PD) and hemodialysis (HD) indicates that this methodology, especially for patients with remaining kidney function, yields favorable results and decreases treatment burden [43, 44]. Upcoming clinical trials (NCT04360694 and NCT04932148) seek to further assess the advantages of gradual HD start. A gradual transition to dialysis is expected to advantage older persons by facilitating their adaptation to the requirements of long-term therapy.

Managing Treatment-Related Complications in Older Adults Receiving Home Dialysis

Peritoneal dialysis (PD) and home hemodialysis (HHD) are typically regarded as safe and efficacious for elderly individuals. Nonetheless, problems like infections, circulatory volume overload, blood pressure instability, and malnutrition are commonly observed in this demographic [45–78]. Infections pose a considerable risk, especially PD peritonitis, which is the primary cause of mortality in PD patients over 65 years, representing approximately fifty percent of all PD-related fatalities [45]. Risk factors encompass diminished manual dexterity, impaired vision, cognitive deterioration, and constipation, all of which may jeopardize compliance with aseptic protocols [46–49, 50]. Strategies to reduce these hazards encompass daily administration of mupirocin ointment and periodic nasal mupirocin to avert *Staphylococcus aureus* colonization and exit-site infections [51]. Moreover, the consistent retraining of peritoneal dialysis techniques for both patients and caregivers, together with regular evaluations of the patient's capacity to conduct peritoneal dialysis autonomously, is essential [52]. When cognitive or functional deterioration hinders the management of Parkinson's Disease, collaborative decision-making with family, enhanced caregiver assistance, and even relocation to more monitored care environments may be necessary [51]. Preventing constipation with dietary adjustments, such as augmenting the consumption of fiber-rich fruits and vegetables, is advised to mitigate risks linked to bacterial translocation [50]. Antibiotic treatment for PD peritonitis in elderly individuals necessitates meticulous evaluation due to possible adverse effects, including neurotoxicity associated with third-generation cephalosporins and carbapenems, along with increased vulnerability to antibiotic-resistant bacterial strains [53–55]. Support from skilled caregivers or community nurses for intraperitoneal antibiotic administration is frequently essential due to the technical expertise required for these procedures [56]. In cases of ineffective antibiotic treatment, catheter removal should be contemplated following an assessment of the patient's prognosis and preferences via collaborative decision-making [56].

In the realm of HHD, vascular access infections constitute a principal consequence, especially among patients utilizing central venous catheters (CVCs). Research demonstrates elevated infection rates associated with central venous catheters (CVCs) relative to arteriovenous accesses, while buttonhole cannulation exhibits infection rates comparable to CVCs in certain instances [57, 58]. Thorough training programs for patients and caregivers are crucial to uphold stringent aseptic techniques and reduce infection risk, supplemented by regular refresher sessions [59]. Timely detection of infections via cultures and the subsequent excision of infected access points is essential for effective therapy [60]. Cardiovascular problems, including circulatory volume overload, blood pressure instability, and myocardial stunning, pose significant challenges for older persons receiving home dialysis. Circulatory volume overload impacts over 50% of long-term home dialysis patients [61–63]. Factors like reduced effluent drain volumes in PD, elevated membrane transport status, suboptimal dialysis intensity, and inadequate session frequency in HHD require monitoring and optimization to guarantee successful volume control [64, 65]. Adherence to dietary guidelines, especially with hydration and sodium limitations, is a vital consideration. Reduced taste

sensitivity in older persons may result in heightened salt intake, requiring focused instruction to improve salt awareness and compliance with low-sodium diets [66].

Blood pressure instability, characterized by symptomatic hypotension and significantly low blood pressure, necessitates tailored therapy. Treatment must include volume status, comorbidities, therapeutic objectives, and the domestic setting. Consistent home blood pressure monitoring, accompanied by caregiver assistance for precise measures, is highly advised [67–76]. The prevention and therapy of protein-energy wasting (PEW), malnutrition, and electrolyte abnormalities require a comprehensive and multidisciplinary strategy. This entails assessing nutritional consumption, hunger, body weight, and physical metrics such as muscle mass and fat reduction, in conjunction with routine laboratory analyses for electrolyte and vitamin concentrations [77, 78]. Community-based care teams are to deliver customized nutritional and electrolyte assistance, promoting sufficient dietary consumption and rectifying particular inadequacies as required. These solutions jointly tackle the intricate issues of managing treatment-related complications in elderly individuals undergoing home dialysis, highlighting customized care, preventive measures, and the engagement of multidisciplinary teams.

Regulating blood pressure (BP) in elderly patients receiving peritoneal dialysis (PD) or home hemodialysis (HHD) is a multifaceted problem due to the complex correlation between BP levels and mortality risk. Both hypotension and hypertension are linked to negative outcomes, with low blood pressure presenting a higher mortality risk during short-term follow-up intervals. This increased risk is frequently associated with underlying cardiac problems, such as heart failure, which are common in older adults with preexisting hypotension [67–72]. In contrast, the long-term consequences of hypertension in this demographic remain unclear, with no definitive agreement on stringent blood pressure guidelines for elderly patients undergoing dialysis [69]. Moreover, the absence of a defined method for assessing intradialytic and interdialytic blood pressure hinders the development of universal standards [73]. Standard hypertension guidelines do not consider the distinct cardiovascular risks faced by older patients undergoing peritoneal dialysis (PD) or home hemodialysis (HHD), especially those vulnerable to hypotension-related problems [74, 75]. Consequently, blood pressure control measures must be tailored to the person, emphasizing the prevention of excessively low blood pressure while considering treatment objectives, volume status, comorbidities, and the home environment. Regular blood pressure monitoring at home, conducted by caregivers with automated devices, is crucial for precision and reliability [69, 73, 76]. Moreover, compliance with antihypertensive drugs necessitates continuous counseling and teaching from multidisciplinary teams to meet the distinct needs of this demographic.

A significant concern for elderly individuals undergoing home dialysis is protein-energy wasting (PEW), malnutrition, and electrolyte abnormalities. The vulnerability of older adults to these complications stems from intrinsic factors, including genetic predisposition and age-related cellular dysfunction, characterized by heightened oxidative stress and inflammation, as well as external factors such as psychosocial challenges and the physiological effects of kidney failure and dialysis. The International Society of Renal Nutrition and Metabolism recommends that the nutritional condition of elderly patients be carefully evaluated through a thorough assessment of hunger, body weight, dietary consumption, and a physical examination of muscle mass and body fat reduction [78]. Routine biochemical assessments of electrolytes and vitamin concentrations are essential for directing nutritional strategies. Effective management of nutrition and electrolyte levels requires a multidisciplinary approach within the community, with family engagement when feasible, to ensure sufficient dietary intake and meet the special nutritional needs of elderly patients undergoing home dialysis.

Caregiver Dependence and Assisted Home Dialysis

Support for caregivers is essential for the efficacy of home dialysis in elderly patients, since it aids in alleviating the considerable symptom burden linked to renal failure. The symptoms, which can be both physical and psychological, are complex and may progress during dialysis treatment [79, 80]. Consistent caregiver participation has demonstrated enhancement in clinical outcomes and quality of life for these individuals [82, 83]. Assisted peritoneal dialysis (PD) models, developed two decades ago, have shown

diminished symptom burden, enhanced technique survival, and decreased PD-related death rates in elderly populations [82]. Assisted home hemodialysis (HHD), which includes family caregivers or nursing personnel, has become increasingly significant, particularly for patients with severe comorbidities, owing to its clinical success and economic efficiency [83–85]. The efficacy of these models is significantly contingent upon the caliber of caregiver and nursing training, with continuous support during dialysis sessions [86, 87]. The dependence on caregivers presents issues, notably caregiver stress and burnout, which can negatively impact patient outcomes. Research demonstrates a significant incidence of caregiver burden, with reported rates reaching as high as 85% in certain instances [92, 93]. Family caregivers frequently balance full-time job with caregiving responsibilities, resulting in physical and psychological stress, especially when caregivers are older or have chronic health conditions [94]. Decreased mood and reported exhaustion in caregivers are associated with reduced patient well-being and quality of life [88–95]. Resolving these challenges necessitates sustainable care plans that incorporate respite care, community nursing assistance, and re-education initiatives to bolster caregiver confidence. Government-sponsored financial assistance programs and digital health platforms that link caregiver networks may reduce caregiver strain and enhance home dialysis care provision [91, 96].

Addressing Frailty in Home Dialysis

Frailty, a key determinant of a patient's capacity to manage dialysis, is often a more accurate measure of resilience than age alone [97]. Home dialysis may reduce the incidence of geriatric syndromes such as intradialytic hypotension, malnutrition, and sleep disturbances, thereby mitigating frailty-related complications [98]. However, significant frailty can hinder the uptake and continuation of home dialysis [99]. A focus on assessing frailty rather than age could inform tailored interventions and improve outcomes for this population [97, 100]. Pre-habilitation programs, nutritional support, and rehabilitation delivered either in person or through digital platforms may help prevent frailty progression, reduce dropout rates, and enhance the overall effectiveness of home therapies [100].

Summary and Future Directions:

Home dialysis provides many advantages for elderly patients, including flexibility, autonomy, and improved congruence with personal treatment objectives. Assisted home dialysis models and comprehensive caregiver support systems offer effective answers to the distinct issues encountered by this demographic. Notwithstanding these benefits, obstacles such as caregiver fatigue, failure, and the necessity for sustainable care models remain. Enhancing home dialysis for elderly individuals necessitates advancements in technology, health policy, and reimbursement methodologies. Customized treatment routes, facilitating technologies, and ongoing research into unmet requirements are crucial for enhancing outcomes. Through continuous endeavors by the global nephrology community, home dialysis may evolve into a more efficacious and accessible alternative for elderly individuals suffering from renal failure.

Nursing Role in Home Dialysis:

The role of nursing in home dialysis is integral to ensure effective care delivery, patient safety, and optimal health outcomes, particularly for older adults who may require peritoneal dialysis (PD) or home hemodialysis (HHD). Nurses act as primary facilitators in the home dialysis model, providing comprehensive training, education, and ongoing support to patients and caregivers. Their responsibilities extend beyond clinical interventions to encompass psychosocial support, patient advocacy, and coordination of multidisciplinary care, all of which contribute to the sustainability of home dialysis programs.

Patient Education and Training:

One of the most critical roles of nurses in home dialysis is patient education and training. Nurses equip patients and caregivers with the knowledge and skills required to perform dialysis procedures safely and efficiently at home. This includes teaching the preparation of equipment, aseptic techniques to prevent infections, proper catheter care, and monitoring for potential complications such as peritonitis or vascular access issues. Tailoring education to the unique needs of each patient is essential, as older adults may have

cognitive or physical limitations that require simplified instructions or adaptive tools. Effective education fosters patient confidence and autonomy, which are vital for long-term adherence to home dialysis protocols.

Ongoing Clinical Support and Monitoring:

Nurses are central to the ongoing clinical support required for home dialysis patients. They regularly monitor patients' clinical status through home visits, telehealth consultations, or in-clinic assessments. This involves evaluating fluid balance, blood pressure, nutritional status, and laboratory results to ensure optimal dialysis efficacy and detect early signs of complications. Nurses also play a pivotal role in adjusting dialysis prescriptions in collaboration with nephrologists to address changing clinical needs. By providing consistent and personalized follow-up, nurses help mitigate the risks associated with home dialysis, particularly in older adults who may have multiple comorbidities.

Psychosocial Support and Patient Advocacy:

Home dialysis can be emotional and psychologically challenging for patients and their families. Nurses provide psychosocial support to address anxiety, depression, and caregiver stress, which are common in this population. They offer coping strategies, connect patients with support groups, and facilitate access to mental health resources when needed. Additionally, nurses serve as advocates for patients, ensuring that their preferences, values, and goals are incorporated into the care plan. This patient-centered approach is particularly important in the context of home dialysis, where treatment regimens must be individualized to accommodate the patient's lifestyle, home environment, and personal circumstances.

Caregiver Support and Training

The success of home dialysis often depends on the involvement of caregivers, who may be family members or paid assistants. Nurses are responsible for training caregivers to perform dialysis tasks, recognize complications, and provide effective support to the patient. They also play a key role in addressing caregiver burnout, a common issue in home dialysis settings. This involves providing education on stress management, offering respite care options, and creating a supportive network through community resources or digital platforms. By empowering caregivers, nurses enhance the overall quality of care and contribute to the sustainability of home dialysis programs.

Coordination of Multidisciplinary Care

Home dialysis patients often require input from a multidisciplinary team, including nephrologists, dietitians, social workers, and physical therapists. Nurses act as coordinators within this team, ensuring seamless communication and collaboration among all stakeholders. They facilitate the integration of medical, nutritional, and psychosocial interventions to address the comprehensive needs of the patient. For example, a nurse may work with a dietitian to develop a personalized meal plan that considers the patient's dialysis regimen or collaborate with a social worker to address financial or logistical barriers to home dialysis. This holistic approach enhances patient outcomes and supports the continuity of care.

Quality Assurance and Safety Standards

Maintaining high standards of quality and safety is a fundamental aspect of the nursing role in home dialysis. Nurses are responsible for implementing evidence-based practices to minimize risks and improve outcomes. This includes adhering to infection control protocols, ensuring the proper maintenance of dialysis equipment, and educating patients on the importance of regular health monitoring. Nurses also conduct audits and evaluations to identify areas for improvement in home dialysis programs, contributing to the advancement of care practices.

Role in Innovations and Policy Advocacy

Nurses play an active role in driving innovations and advocate for policies that support home dialysis. They contribute to the development of new technologies, such as automated dialysis machines and

remote monitoring tools, which enhance the feasibility of home dialysis. Additionally, nurses advocate for policies that provide financial support for patients, improve access to home dialysis supplies, and promote caregiver education. By participating in research and policy discussions, nurses help shape the future of home dialysis care. Nurses are indispensable in the delivery of home dialysis care, particularly for older adults who require tailored interventions to manage the complexities of kidney failure. Through education, clinical support, caregiver training, and multidisciplinary coordination, nurses enhance the effectiveness and sustainability of home dialysis programs. Their commitment to quality assurance, patient advocacy, and innovation ensures that home dialysis remains a viable and patient-centered option, even for those with significant comorbidities or frailty. As the demand for home-based care continues to grow, the role of nurses in home dialysis will remain essential in optimizing patient outcomes and advancing the field of nephrology.

Conclusion:

The role of nursing in facilitating home dialysis for elderly individuals is indispensable in overcoming the multifaceted challenges associated with this treatment modality. Nurses act as advocates, educators, and care coordinators, bridging the gap between clinical care and patient needs. Their involvement begins with addressing biases among healthcare providers, which often hinder the adoption of home dialysis for older adults. Through comprehensive pre-dialysis education and skill-building programs, nurses empower patients and caregivers, alleviating concerns about home-based treatments. The management of treatment-related complications forms another cornerstone of nursing care. Older patients on home dialysis face increased risks of infections, malnutrition, and vascular complications. Nurses play a critical role in implementing preventive strategies, such as maintaining aseptic protocols, ensuring dietary adequacy, and retraining patients and caregivers in dialysis techniques. When complications arise, nurses collaborate with healthcare teams and families to make informed decisions, balancing clinical outcomes with patient preferences and quality of life. Incremental approaches to dialysis initiation, tailored to the elderly population, exemplify how nursing interventions can adapt to the unique needs of older adults. These strategies not only ease the transition into dialysis but also reduce treatment burdens. Similarly, respite care and transitional support enhance the overall experience for patients and caregivers, reinforcing the feasibility of home dialysis. Systemic changes, including policy adjustments and resource reallocation, are necessary to sustain and expand home dialysis programs. Nurses can advocate for these changes, emphasizing the long-term benefits of patient-centered approaches. By aligning dialysis adequacy with individualized goals and focusing on quality-of-life factors, nursing interventions contribute to improved satisfaction and outcomes for older adults. In conclusion, nursing is central to the success of home dialysis programs for elderly patients. By addressing barriers, enhancing education, and prioritizing holistic care, nurses not only improve clinical outcomes but also empower patients to lead more fulfilling lives. Continued investments in nursing education and systemic support are essential for advancing home dialysis as a viable and effective treatment option for the aging population.

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تعزیز نتائج المرضى: دور التمريض في مساعدة وتعليم الغسيل الكلوي المنزلي

الملخص:

الخلفية: مع تزايد نسبة كبار السن في العالم، يزداد حدوث فشل الكلى واحتياج المرضى للعلاج بالغسيل الكلوي. تقدم أساليب الغسيل الكلوي المنزلي، مثل الغسيل البريتوني (PD) والغسيل الدموي المنزلي (HHD)، فوائد مثل المرونة في نمط الحياة وتحسين النتائج القلبية الوعائية. ومع ذلك، تعيق تحديات مثل الضعف البدني، وإرهاق مقدمي الرعاية، والمضاعفات، تبني هذه الأساليب بشكل واسع، خاصة بين كبار السن.

الهدف: تهدف هذه المراجعة إلى استكشاف دور التمريض في تعزيز نتائج الغسيل الكلوي المنزلي لكبار السن من خلال المساعدة والتعليم.

الطرق: تم استخدام مراجعة سرديّة لدمج النتائج المستخلصة من السجلات العالمية، والاستبيانات، والدراسات السريرية لتحديد الحواجز والفرص في الغسيل الكلوي المنزلي للمرضى المسنين. تم التركيز بشكل خاص على التدخلات التمريضية والاستراتيجيات التعليمية لمعالجة التحيزات والمضاعفات والأهداف التي تركز على المريض.

النتائج: على الرغم من زيادة تبني الغسيل الكلوي المنزلي بين كبار السن في مناطق مثل الولايات المتحدة، فإن النمو يظل محدودًا في أماكن أخرى. تشمل التحديات الرئيسية التحيزات بين الفرق الطبية، وارتفاع معدلات الوفيات في الغسيل البريتوني، وقلق المرضى. أثبتت التعليمات التمريضية وخطط الرعاية الشخصية فعاليتها في التخفيف من هذه الحواجز. على سبيل المثال، قللت التدريبات المستهدفة بشكل كبير من تردد المرضى في التوصية بالغسيل الكلوي المنزلي للمرضى كبار السن. كما أدت استراتيجيات مثل رعاية الراحة، وبدء الغسيل التدريجي، والوقاية من العدوى إلى تحسين النتائج.

الاستنتاج: يلعب الممرضون دورًا حاسمًا في معالجة تعقيدات الغسيل الكلوي المنزلي لكبار السن. من خلال تقديم الدعم المخصص، وإدارة المضاعفات المرتبطة بالعلاج، وإعطاء الأولوية لجودة الحياة، يمكن للممرضين تسهيل تبني هذا العلاج بنجاح وتحسين نتائج المرضى. كما أن التعليم المحسن والدعم المنهجي أمران حاسمان لاستدامة هذه الجهود.

الكلمات المفتاحية: الغسيل الكلوي المنزلي، الغسيل البريتوني، المرضى كبار السن، التعليم التمريضي، نتائج المرضى