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Education to Dialysis Clinical Staff About the Role of Advanced Practice Registered Nurses in Home Dialysis

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This is to certify that the doctoral study by

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has been found to be complete and satisfactory in all respects,
and that any and all revisions required by
the review committee have been made.

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Walden University
2024

Abstract

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MSN, Walden University, 2016

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Project Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Nursing Practice

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February 2024

Abstract

Chronic kidney disease (CKD) and end-stage renal disease (ESRD) have become substantial issues in the United States. There is a call to action from scholars for nurses, especially advanced practice registered nurses (APRNs), to cultivate APRN-led renal discipline teams and gauge directed health results. Nurse practitioners encounter and are responsible for identifying and managing patients in the home dialysis setting. It is essential to increase knowledge, teaching, and treatment options to nurse practitioners and clinical staff regarding the role of APRNs in home dialysis. The purpose of this project was to answer the practice-focused question addressing whether staff education about the clinical practice guidelines developed by the National Kidney Foundation in 2002 as the scope of the APRN in the renal dialysis population improves staff's knowledge and intent to follow the guidelines. A PowerPoint presentation was given after a pretest (with a mean score of 59.36%) and before a posttest (with a mean score of 95.90%). Results from the survey indicated that 58.25% of participants decided to collaborate with others, and 64.25% incorporated the guidelines. Findings may offer an enhanced approach to quality care that addresses the social desolation of ESRD patients with the lack of access to home dialysis.

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Dedication

This is dedicated to my grandmother, Myrtle Lawson, who is resting, awaiting the Lord’s return.

Acknowledgments

I acknowledge my Lord and Savior, whom I am grateful to for granting me knowledge, wisdom, and understanding and for guiding me throughout this program.

I want to thank my two children, Bryan Azariah Francis and Bethanne Abigail Francis. Thank you for encouraging Mommy through this time. My sister, Julinda Dawkins; my mother, Juliet Lawson; my brother, Ruddy Grant; and all my friends and extended family members who have provided me with the love and support I need for this journey!

I also want to thank my committee members, especially Dr. Rouse, who has provided her input and directions for me to make it to the end. To Dr. Uko, who was my preceptor at the practicum site, she provided me with her expertise, advice, and guidance.

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Section 1: Nature of the Project

It is essential to educate and train the health care industry to improve population and health outcomes; in the United States, efforts are being exerted to transform the education and training of nurses and nurse practitioners (NPs), the largest group of health care workers (Murarane za & Mtshali, 2018). Health care workers such as nurses and NPs should stay well informed of developing health needs and adequately respond to the health care situation's existing and projected needs (Fiset et al., 2017). Thompson-Martin et al. (2015) cited from the National Kidney Foundation (NKF) that more than 26 million people have chronic kidney disease (CKD). In 2017, CKD was estimated to be at 9.1%, with 0.04% of the population receiving dialysis, and by the year 2030, it is estimated to increase to 5 million (Yu et al., 2022). The evidence related to kidney disease ignited a call to action from scholars for nurses, especially advanced practice registered nurses (APRNs). Reid et al. (2021) stated that managing teams and measuring health outcomes is important. This includes nursing teams' discipline and assessing their efforts toward achieving positive health results. NPs are placed through the patient care continuum to recognize the issues regarding the current trend of home dialysis (Bennett et al., 2019).

Implementing education courses to aid NPs in pinpointing the needs of the kidney patient community and providing support is feasible in their daily clinical practice through networks and organizations (Schumacher & Risco, 2017). The Council of Nurses defined *evidence-based practice in nursing* as a problem-solving approach to clinical decision-making that integrates a pursuit of the most extraordinary and up-to-date evidence, clinical expertise, evaluation, and patient preference (Chien, 2019).

There is a call to action from scholars for nurses, especially APRNs, to cultivate APRN-led renal discipline teams and gauge directed health results. NPs should recognize and administer care to patients in the home dialysis setting. It is essential to increase knowledge, teaching, and treatment options for NPs and clinical staff regarding the roles of the APRN in home dialysis. Mathieson et al. (2019) identified the significance of employing data in training since it diminishes inefficiency and increases team cooperation and organization loyalty. The practice-focused question for the current project was the following: Does staff education about the clinical practice guidelines developed by the National Kidney Foundation in 2002 as the scope of the APRN in the renal dialysis population improve staff's knowledge and intent to follow the guidelines? The An education session was given to clinical staff RNs and NPs regarding the role of the APRN in home dialysis with experience in evidence-based practice (EBP) application.

The aim was to maintain, guide, and instruct members to stipulate and encourage clinical staff in their practice and education standards. I also sought to promote nursing research and EBP for the profession's advancement. Although national best practices by the NKF Kidney Disease Outcomes Quality Initiative (KDOQI) guidelines (Thompson-Martin et al., 2015) are available, NPs in the project dialysis company were not routinely using these as a general practice, thereby contributing to a disparity in advanced nursing practice, speedy diagnosis, and complete managing of home dialysis patients. Guidelines provided by the NKF KDOQI can be used to operate and revise the essential

understanding of kidney disease and offer different or enriched methods of caring for patients (Goolsby, 2002).

Project Aim

In this Doctor of Nursing Practice (DNP) staff education project, I used the clinical training standards developed by the NKF in 2002 to educate the organization's clinical staff and NPs about the guidelines and the scope of the APRN in the renal dialysis population. The desired outcome was that the teams' understanding of CKD, end-stage renal disease (ESRD), and home dialysis would surge, and the teams would have an improved comprehension of the role of APRNs in home dialysis. The APRNs were encouraged to educate, prescribe, conceptualize, and manage complex issues in the home dialysis patient.

Problem Statement

The state of American kidney health is being scrutinized. It is estimated that over 20,000 individuals suffer from ESRD in the United States every year (Reid et al., 2021). CKD affects millions of Americans and "is the ninth leading cause of death, is estimated to cost $114 billion annually, and directly or indirectly causes more than 2.4 million deaths annually" (Manski-Nankervis et al., 2021, p. 2). Current trends denote accelerating surges in the cost of care and an astronomical mortality rate among patients; the survival rate after 3 years is only 57% (Reid et al., 2021).

New evidence suggests that using home dialysis and transplantation increases quality of life, decreases mortality, and decreases economic burden. In 2019, the executive order announced by the White House called the Advancing American Kidney

Health Initiative (ADKHI) aimed to change the present state of kidney care to advance outcomes, decrease treatment-related spending, and intensify kidney transplants (Rastogi & Lerma, 2021; Wallace & Allon, 2020). The executive order was intended to provide monetary motivations to encourage a move to home dialysis or transplantation. There is an aggregate necessity for APRNs in the ADKHI, given the proposal by the KDOQI (NFK, 2012), for an interdisciplinary process of handling this disease.

According to the Institute of Medicine (2011), APRNs should work as associates with medical doctors and other health care specialists to reshape health care practice in the United States. The clinical staff at the dialysis facility were unsure and confused about the roles and responsibilities of the APRN in home dialysis. APRNs at the same dialysis facility were observed not to be encouraged to educate, prescribe, conceptualize, and manage complex issues in the home dialysis patient. The APRN or nephrology NP is critical for this care continuum to improve the quality of life of home dialysis patients. This DNP project was designed to educate clinical staff and NPs of the dialysis facility through an educational training session on the roles and functions of the APRN in home dialysis care.

Purpose Statement

This scholarly project was designed to educate APRNs and RNs at a dialysis facility to understand the NKF clinical training standards and the scope of practice of APRNs caring for these people. The recommendations contain plans for enhancing patient self-management and partaking in their well-being. The practice-focused question to be answered by this staff education project was the following: Does staff education

about the clinical practice guidelines developed by the National Kidney Foundation in 2002 and the scope of the APRN in the renal dialysis population improve their knowledge and intent to follow the guidelines? The staff receiving this education were APRNs and RNs. After receiving the education, the staff would have an increased understanding of CKD, ESRD, and home dialysis and would intend to follow the standards.

Nature of the Doctoral Project

This scholarly DNP project was an informative intervention intended to increase the awareness of NPs and RNs in a dialysis organization. This teaching program addressed the risks of chronic disease in society, an initial association of renal disease plans for multidisciplinary management, and a means for teaching patients the significance of behavior changes and self-care. The program content was based on the clinical training standards developed by the NKF in 2002. The NKF KDOQI aims to intensify and advance patients' condition and results while receiving dialysis. These guidelines were used as a nationwide criterion to describe and direct CKD patients' lives. This aligns with the guideline outlined by the NKF to "improve communication between patients and providers, enhance public education, and promote the dissemination of research results" (Levey et al., 2003, p. 1). The educational training program was designed to assist clinical staff, especially NPs, in using their abilities and education to care for these challenging people in home dialysis (Davis & Zuber, 2021). There are gaps concerning what is identified from research regarding the roles and responsibilities of the

APRN in home dialysis and the application of this knowledge in this dialysis facility, as well as others (Thompson-Martin et al., 2015; Yu et al., 2022).

During observation at the clinical site, the APRN was noted not to work in the home dialysis setting. After this observation, questions were asked of the clinical staff and APRNs working in the hemodialysis setting as to why they are not working in home dialysis. There was also a discussion with the administrative team on why APRNs are used less in the home dialysis department. The company needed clarification on the role and responsibilities of APRNs in home dialysis; therefore, a gap in practice was observed. EBP can be used within undergraduate and graduate-trained nursing education and theory development (Giddens et al., 2014). EBP can improve patient results and increase clinical practice (Ironside et al., 2014).

The setting included staff from a dialysis company. The growth of home dialysis is encouraged; APRNs need to develop and perform at the top of their expertise, proficiency, and certification (Kear, 2020). The project was feasible in this setting. The project was accomplished by providing education that is based on evidence-based information. The project was designed to assist NPs and RNs in pinpointing and comprehending the function of APRNs in home dialysis for ESRD patients. Because the team members were unsure of the APRN's role, this education project focused on educating the clinical staff in the facility. An evaluation of the knowledge before and after the training was conducted. The participants received a pretest and posttest to determine whether there was increased knowledge after attending the class. The study's

primary purpose was to improve the clinical training of NPs; however, quantifying transformations in practice was beyond the project's scope.

Significance

NPs may help expand ESRD patients' health issues by applying current home modality guidelines (Chan et al., 2019). People with CKD are at an excessive threat of progressing to ESRD, and one factor is a lack of self-care awareness; therefore, education and teaching are essential. A multifactorial approach includes "availability of resources, reasons for starting dialysis, the timing of dialysis initiation, patient education and preparedness, dialysis modality, and access, as well as varied 'country-specific' factors [that] significantly affect patient experiences and outcomes" (Chan et al., 2019, p. 37).

There are nationwide standards in modality education; however, NPs need to be more informed or updated on the most current data. An analysis cited that patients who receive education are better supported and will conduct self-care management, which is critical to complete well-being (Peeters et al., 2014). By better educating the nurses, they will be more equipped to educate their patients. Peeters et al. (2014) also pointed out that NPs assisted in reducing disease advancement by 20% and developed general results by better preparing the patient. To effectively work with these patients, APRNs should implement the current evidence-based data of the CKD standards.

Social change through this project was anticipated to add value to the renal community. The effects may provide social change by offering an enhanced approach to excellent care for patients that focuses on the social desolation of ESRD with the lack of access to home dialysis. APRNs and RNs may benefit by having improved awareness and

understanding of the APRN's role in home dialysis. The capability to mitigate long-lasting complications in chronic disease management positions the NP to focus on the multifaceted areas such as psychosocial, physical, and lifestyle problems impacting patients. Baker et al. (2005) noted that Congestive Heart Failure (CHF) clients who participated in education sessions on managing chronic disease visited the emergency room less frequently and were admitted to the hospital less often.

Summary

This section addressed the principle, nature, and significance of the project. The purpose of this project was to enhance knowledge of the function of NPs in the local dialysis facility. The lack of awareness limited attempts to reduce advancement in ESRD patients. CKD is amongst the top 10 reasons for mortality in the United States. Chan et al. (2019) noted that a deficiency in the preparation of patients and an exigent start to treatment relates to lesser survival and more significant illness; with training and understanding, health care workers can decrease disease progress. The staff in the project took a pretest to measure CKD, ESRD, and home modality awareness. Staff then attended a didactic presentation and completed a posttest. Section 2 addresses theoretical methods used to educate the staff on the project.

Section 2: Background and Context

The steady decline in kidney function characterizes CKD. Over 20,000 individuals experience ESRD in the United States each year (Reid et al., 2021). CKD affects millions of Americans and "(1), is the ninth leading cause of death, (2) is estimated to cost $114 billion annually, and (3) directly or indirectly causes more than 2.4 million deaths annually" (Manski-Nankervis et al., 2021, p. 2). Information from the U.S. Renal Data System (2021) showed 134,608 individuals were recently diagnosed with ESRD. Of these individuals, 85% were started on in-center dialysis, and 12% were introduced to home hemodialysis or peritoneal dialysis.

The ESRD treatment model, a facet of the AAKHI executed by the Centers for Medicare & Medicaid Services in 2019, is intended to change the prevalent in-center hemodialysis model in the United States to a hemodialysis model (Thomas-Hawkins et al., 2022). The ESKD treatment model will require specific financial outflows from Medicare for home dialysis and other dialysis services from 2021 to 2027 (Centers for Medicare & Medicaid Services, 2020). Results for individuals with ESRD are higher for those on home hemodialysis and peritoneal dialysis compared to those on in-center dialysis (Yau et al., 2016). However, global home dialysis frequency in various countries has remained the same in the past 20 years (Wallace et al., 2017). Awareness of the drop in home therapy use is significant to transforming the growth of home dialysis internationally (Bennett et al., 2019). Flythe et al. (2019) stated that "well-executed dialysis research has the potential to yield findings that can meaningfully improve

patients' lives in many ways, such as by decreasing mortality rates, addressing symptoms, and improving processes of care" (p. 1).

Concepts, Models, and Theories

The qualitative methodology for the education class originated from the ground theory method of Corbin and Strauss's chronic disease nursing model (Llewellyn, 2019; Thornton et al., 2020) and facets of Wagner's chronic care model (CCM; see Figure 1) for self-care management framework (Garland-Baird & Fraser, 2018). A framework such as the CCM is the foundation for treating chronic diseases such as patients with renal diseases. Davy et al. (2015) stated that the goal of CCM is to change the regular care of patients with chronic illness to a dynamic, organized, and effective way to advance the quality of the patient's life. The Knowledge to Action (KTA; see Figure 2) framework was used for the knowledge translation process. The KTA framework is a technique that positions makers' and workers' data inside a system where information is receptive, adaptive, and irregular (Field et al., 2014). Orem's self-care deficit theory (see Figure 3), a general nursing theory, was used extensively in specialty nursing (Zaccagnini & White, 2017). In dialysis, it helps to identify how people are aware of the significance of incorporating self-care and assists the healthcare staff in identifying circumstances interfering with people's self-care and helping to overcome them (Santana et al., 2020).

Figure 1.

Chronic Care Model

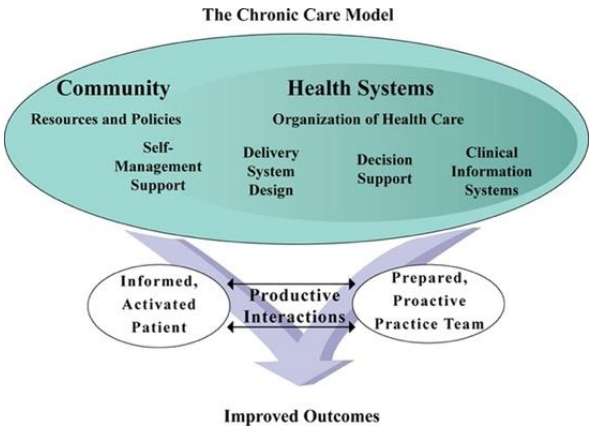
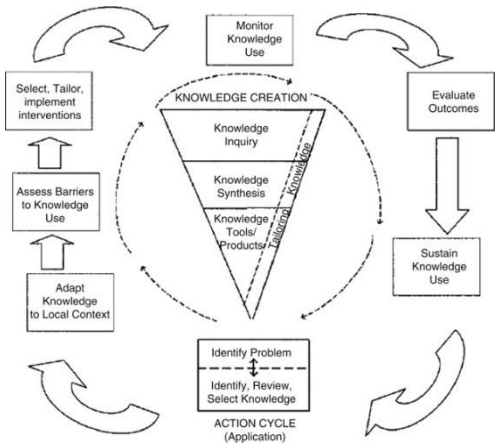


Figure 2.

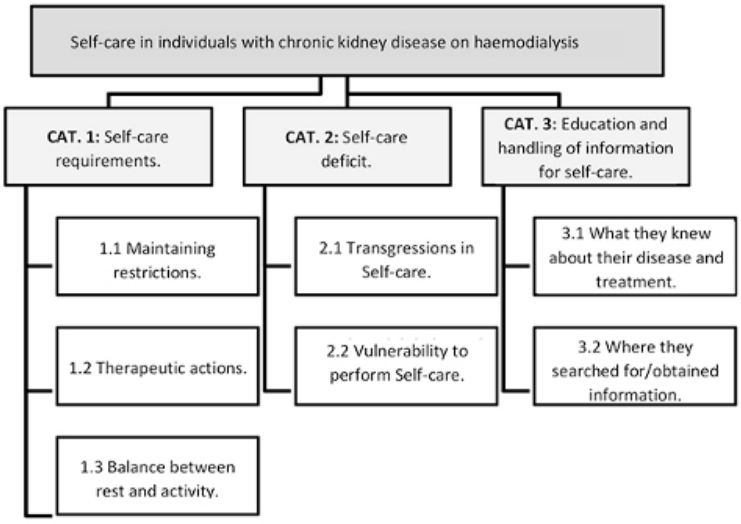
Knowledge to Action



Note. This Photo by Unknown Author is licensed under CC BY.

Figure 3.

Orem's Self-Care Model



(Santana et al, 2020)

The CCM framework directs the CKD training purposes, classifies the stages of chronic diseases, identifies the associated challenges, and determines purposes for managing and executing interferences. This aids the APRN in becoming acquainted with the patient's position on their ailment; however, the CCM framework may be a managing device for constant sickness. This was repeated by the self-care deficits theory by Orem (1997), with central ideas of caring for oneself and managing self. Orem strongly supported that individuals have a biological aptitude for caring for themselves, and health care professionals must concentrate on reinforcing that. This concept is expressive and dogmatic and will direct a person in accomplishing the objectives of the employee learning presentation. Riegel et al. (2012) concentrated on the vital intentional results of self-maintenance in prolonged diseases, such as disease constancy, healthiness and safety, reduced anxiety, and quality of life.

ESRD teaching in its present condition stems from Corbin and Strauss's (1991) chronic disease nursing standard. ESRD and CKD training was established to encourage a complete nursing process in chronic disease, emphasizing the support of professionals because there are no cures, thereby allowing the person to contribute to the course of the illness while sustaining individuality and normality. The training concentrates on the fluctuating function of handling signs of illnesses, infirmity, and consequences that will influence the management of disorders (Corbin & Strauss, 1991). In the original meaning of nursing interests, Orem (1995) identified that maintaining living and well-being, improving hurt or illness, and managing outcomes require the specification and control of self on an uninterrupted foundation. Orem recognized self-care as an individual role that

people should, through planning, implement or execute to sustain vivacity, well-being, and growth.

Self-care in home dialysis incorporates individual necessities and involvements to support recovery or health (Taylor et al., 2011). Self-care upkeep is a principal component in caring for oneself, especially with a chronic sickness (Riegel et al., 2012). The self-care concept and the theoretical framework collaborate with the principle of confirming APRNs' involvement in home dialysis. Another framework that this project included was the CCM. CCM results demonstrated the systematizing basis to advance chronic sickness care at the individual and people levels (Kadu & Stolee, 2015). The APRN is perfectly matched for involvement through CCM education. Data reinforced the use of CCM in directing care designated to increase healthiness (Mattke et al., 2007).

The decreased expenditure of complete health care results from enhanced disease monitoring. However, early procedures that were restructured due to the CCM suffered a loss initially, and the decline in the risks of ESRD and intensification in excellence in life is thought to be profitable for humanity (Mattke et al., 2007). Further studies have recommended that applying the CCM improves quality results in individuals with chronic diseases (Bonomi et al., 2002; Coleman et al., 2009). To use the CCM model, researchers must understand the six parts specified by the standards (Coleman et al., 2009).

Relevance to Nursing Practice

APRNs play an imperative role in ESRD management by instructing patients on the importance of home treatments and managing patients while performing home dialysis. Formerly, the APRN's role in the management of ESRD was limited to

assessment and documentation. Kim (2015) indicated that the nursing process for problem-solving and nursing responsibility incorporates cooperation with other specialists in the health field and advancing the client's self-sufficiency instead of simply realizing the pressing requirements and ways to meet them. APRNs enhance chronic sickness care by collaborating with patients regarding their illnesses and care (Bodenheimer et al., 2005). Treatments of CKD and ESRD require an interdisciplinary approach. Bednarski et al. (2023) stated suitable training includes everyone, such as nephrologists, primary care doctors, NPs, patient care technicians, RNs, dietitians, licensed practical nurses, and social workers; however, present barriers to optimum management of kidney disease abound.

The NKF-KDOQI standards that turned out to be the foundation for the care of ESRD were based on a methodical analysis of suggestions from sources; nevertheless, there was emphasis on concerning medication treatments to be handled by other physicians. The guidelines for evaluation, classification, and stratification of CKD defined CKD as an abnormality of kidney structure or function present for over 3 months, with implications to health regardless of reason or clinical presentation (Inker et al., 2014; Levin & Stevens, 2014). The guideline suggested a staging system centered on the glomerular filtration rate (GFR) progressing through the stages. Inker et al. (2014) and Levin and Stevens (2014) wrote that the best way to review the overall function of the kidneys is to look at the results of the GFR.

Currently, the state of nursing procedures in home dialysis and the treatment of ESRD are practically insignificant in the region where this project was done. APRNs

employed by dialysis clinics and nephrology offices were reduced to assessing patients in the hospital and rounding at the clinics for in-center dialysis. This undermines the value of the skills and abilities APRNs have attained in overseeing the care of patients with chronic diseases. In North America, this role has yet to be established. Innovative evidence indicates that using home dialysis and transplantation increases the quality of life, decreases mortality, and decreases the economic burden (Lockridge Jr et al., 2020). In 2019, the executive order announced by the White House called the AAKHI aimed to change the present state of kidney care to advance outcomes, decrease treatment-related spending, and intensify kidney transplants (Rastogi & Lerma, 2021; Wallace & Allon, 2020).

The AAKHI will include a reasonable reduction in additional instances of ESRD in the area from a starting point of different events conveyed in the previous years and changed based on demographics such as race, age, and sex, with a 10% progress (HealthyPeople.gov, 2015). Of the Healthy People 2020, 14 of the 24 CKD objectives are moving to the 2020 target. Operating at about a quarter of the Medicare expenses, treating kidney diseases is costly to the government (Friedman & Friedman, 2006). According to the Centers for Disease Control and Prevention (2014), CKD and ESRD are two illnesses overburdened by Medicare expenditures at $49.3 billion.

Local Background and Context

Kidney disease has increased in the region where this project was performed, and the addition of dialysis facilities demonstrated it. Many dialysis clinics in the area offer several daily shifts and anywhere from 20–30 patients per shift. The residents of the

region in 2021 were 30,516 (Cubit Planning, 2023), with Blacks (33.4%) followed by Whites (31.0%) and Hispanics (23.7%).

The median household income was $51,242; 33.4% of the population is African American, who are more likely to suffer from diabetes mellitus and hypertension, which are common risk factors. Decreasing the advancement of CKD in this grouping is of utmost importance. Many patients are unaware of the different modalities and do hemodialysis 3 days a week in the clinic. Donald et al. (2018) stated that it is difficult for patients to handle the psychological results of having a chronic disease while attempting to deal with the treatment for renal illnesses and additional prolonged ailments with the burdens of daily life.

Role of the DNP Student

My responsibility as a DNP student was to recognize the assignment, employ and enlist the site to participate in the education, and set quantifiable goals for the project. My responsibilities also included describing the issue, conducting the session teaching, gathering the required information to assess the performance, and composing a description of the results (see Amagwu, 2018). I had the opportunity to partake in home dialysis training and education for patients with ESRD on home dialysis. The skills developed in the DNP program were instilled in me to manage and lead changes in the changing landscape of health care (see Walsh et al., 2016).

Change representatives evaluate the appropriateness of the setting in handling the application of change. *Superior health care* is defined by the Institute of Medicine (2011) as the level of health care facilities to raise the possibility of people who require health

care. Stevens (2013) reiterated that the solution is in the "crossing of the chasm" declared in EBP, a combination of the most remarkable studies from clinical experts to deliver the best care for the patient.

DNP and APRN teachings are designed for delivering EBP care. The health care restructuring has been on the theory of triple aim: decreasing expenses, improving health care, and improving the experience of patients. This plan is to function as composed of evidence-based teaching to clinical staff in a dialysis facility to deliver superior care as a high-functioning health care group (Institute for Healthcare Improvement, 2016). Translating research into practice is part of the expectation of a DNP graduate by assessing, evaluating, and deducing practice information to advance health care reliability and results. The idea is to incorporate research through evidence-based strategies and to assess clinical results through the CCM on the management of kidney disease founded on interprofessional cooperation representing nursing as part of the team.

Role of the Project Team

The project team consisted of individuals who are home dialysis experts. This team's job was to ensure that the education program provided the necessary information for the staff. The project team reviewed the education content and survey questionnaire and provided feedback. The KDOQI report suggested that evidence is required to define renal disease and classify the stages. Other reporting agencies specified that a nephrologist is needed in the care of the patient with a GFR of less than 30 ml/min per 1.73 m2 (Inker et al., 2014) and did not outline the implication of the associated health specialists in managing this prolonged illness, with an extensive and surpassing effect on

health care. The use of evidence-based guidelines is the standard of practice for an APRN. There is the implementation and translation of research-generated evidence to improve the quality of health care services for patients. The updated guidelines (KDOQI, 2012) recommended a standard of an interdisciplinary approach for CKD patients, including primary care physicians, pharmacists, social workers, dieticians, RNs, NPs, and specialists (nephrologists). One study established that further support by NPs through education will increase self-care and increased patient outcomes (Peeters et al., 2014).

This DNP project was inspired by the observation of decreased care to home dialysis patients tasked with self-care and the lack of APRNs practicing at the top of their license. NPs are trained to deal with the comorbidities that accelerate the decline of this disease process. Additional inspiration for this project was the desire to explain how NPs are necessary to directly manage CKD and ESRD patients. Wong et al. (2010) implied that using specialists with regular nurses improved adherence to patients' diet, quality of life, and contentment with care.

Summary

Section 2 discussed the different theories and methodologies used to implement the project. Patient outcomes can be improved if NPs are cognizant and involved in ESRD referrals and treatments in home dialysis. Bennett et al. (2019) stated that understanding home dialysis is vital to changing and fostering the global progression of home dialysis growth. Multiple studies focusing on CKD showed the need for the early involvement of APRNs to increase positive patient outcomes (Fishbane et al., 2017). The number of patients performing dialysis at home in the United States is lower than in

additional equivalent districts (Kerr & Agar, 2016). Erbe et al. (2023) acknowledged that patients who transitioned to hemodialysis from peritoneal dialysis had a lower mortality. In Section 3, there is discussion and assessment of the methods used to develop the plan for the education program.

Section 3: Collection and Analysis of Evidence

This DNP project provided education regarding the roles and responsibilities of the APRN in home dialysis and the impact on patient's quality of life. The scholarly project aimed to assist the team members of a facility in understanding the extent of the problem in the renal community and incorporating the most current scientific standards for the evaluation and management of patients with CKD. EBP can aid NPs in delivering optimum care to these patients. The recommendations incorporate teachings of educating patients about self-management and involvement in their health care. A pre- and posteducation exam was given to measure improvement in knowledge.

Practice-Focused Question

In-center hemodialysis is the most common Kidney Replacement Therapy modality for people with kidney failure. Over the last few years, home dialysis has been the selected treatment choice for several patients with CKD (Kandakoglu et al., 2020). With the initiation of the AAKHI policy, it has gained more attention (Lockridge et al., 2020). Increasing home hemodialysis and peritoneal dialysis necessitates a pledge to introduce patients to the modalities throughout ESKD. There are questions about what impact the APRN in the current trend and future focus of home dialysis will have on the quality of life and outcomes in patients with CKD on dialysis. The practice-focused question for this DNP staff education project was the following: Does staff education about the clinical practice guidelines developed by the National Kidney Foundation in 2002 as the scope of the APRN in the renal dialysis population improve their knowledge and intent to follow the guidelines? The proposed outcome was an increased

understanding of the clinical staff and the APRNs and encouragement in educating, prescribing, conceptualizing, and managing complex issues in the home dialysis patient. This project assisted in bridging the gap between recommendations and practice. A PowerPoint presentation with a pre- and posteducation survey was used for staff education. The presurvey contained demographic and knowledge questions. The postsurvey contained the same knowledge questions as the presurvey and an added question about intent to follow the guidelines. The target audience for this education was eight APRNs and 12 RNs from clinical facilities.

Sources of Evidence

The current use of APRNs in the home dialysis setting is almost nonexistent. Nurses and APRNs are encouraged to "practice at the top of their knowledge, skill set, and license; the development of new models that promote the delegation of tasks among healthcare personnel" (Kear, 2020, p. 313) in the care delivery system. There need to be more APRNs working in home dialysis at one of the large dialysis providers. The American Nephrology Nursing Association supports the federal bill that financially aids the development of the nursing workforce, primarily those working in nephrology practices (Kear, 2020).

In ESRD, APRNs work to conduct assessments of inpatients and rounding on the in-center hemodialysis or outpatient dialysis units, which undermines the management abilities APRNs have developed in the scale of chronic disease care. The APRN's role is to deal with and detect diseases, recommend various health concerns to the public, manage chronic disease, and partake in constant teaching in the developments in the

nursing field (American Nurses Association, n.d.). The pretest and posttest compared the staff's knowledge of phases of CKD, causes for ESRD, managing ESRD, and the APRN's role in treating and monitoring patients on home dialysis.

Evidence Generated for the Doctoral Project

There was an extensive search of evidence from sources of information concerning staff awareness of kidney diseases and recent EBP for nursing training and education of patients with renal failure. Another source to substantiate the data was the training presentation for the clinical team comprising CKD and the role of APRNs in home dialysis, where a pretest and posttest were conducted, and the outcomes evaluated. The office manager ensured staff would be given scheduled time off to accommodate the program. The information for the questionnaire came from the survey used by Agrawal (see Appendix C) and the NKF guidelines. The NKF guidelines are a tool for nephrology health care specialists.

The tests provided to the team were given at two different times: one before the educational session and the other after the education. As the organizer, I taught the team, expounded on the changing aspects of CKD and the role of the APRN, conducted the associated investigation, and included recent EBP for those with renal failure. The team was urged to partake in the training platform by inquiring about the various guidelines to confirm that they provide current care for those with kidney failure.

Participants included workers at the facility who were caring for the patients regularly. The team was advised that the anticipated project would survey their awareness of renal disease, how they employ EBP, the treatment of CKD, and the results. The pre-

and posttest outcomes were assessed to compare them with other results from EBP resources concerning using the NKF guidelines.

The staff education project was endorsed by the Institutional Review Board of Walden University (01-04-24-0406720). The surveys were given to the staff on paper before and after the teaching demonstration. Also, the staff were given a consent form created by Walden University, informing them that they were not obligated to participate in the project. Participants were informed of their anonymous status. There were no additional ethical issues anticipated when the project was initiated.

Analysis and Synthesis

The process used to analyze the evidence of the education project was a numerical analysis made up of numerical data and graphics. The process incorporated the number of training participants and the results from the pretest and posttest provided in a survey design. The data were examined using the paired *t* test to compare the clinical team's understanding before and after the education (see Table 1). Software Package for the Social Sciences (SPSS) was used to measure pre- and post-education knowledge scores. After the education intervention, there was a question about the intent to follow the guidelines. This information was analyzed by comparing the responses based on the years in dialysis.

The purpose of leading a literature assessment was to offer a systematic foundation for an analysis of a plan. These publications offered contextual information regarding the question of concern, variable quantity, and theoretical context. The sources provided recent data, particularly those published in the previous 5 years, based on

searches of pertinent databases. Agrawal et al. (2009) explored the knowledge of CKD strategies among residents and physician assistants and discovered minimal knowledge existed. The analysis uncovered that none of the 10 residents questioned knew of the NFK KDOQI guideline (Fox et al. 2006). Thompson-Martin et al. (2015) also conducted a study regarding using the NKF guidelines for primary care nurse practitioners to determine whether they retained and increased their knowledge after the education program. The outcomes indicated a substantial growth in understanding after the education; furthermore, understanding was shown to be remembered 1 month later.

Summary

In this section, additional techniques were discussed on the improvement plan for the education program at the selected dialysis facility. The execution of this scholarly project consisted of an evaluation survey on CKD, the NKF Standards, and SPSS. The assessment questions were chosen to establish CKD and ESRD knowledge, home dialysis awareness, and the role of APRNs in home dialysis. The paired-sample *t* test of SPSS was applied to evaluate results for data concerning the two variables (pre- and posttest scores). Section 4 provides the findings and recommendations.

Section 4: Findings and Recommendations

The knowledge of CKD, the role and responsibilities of APRN in home dialysis, and the current guidelines for caring for home dialysis patients are challenges to some health care professionals in a dialysis facility. The staff receiving this education were APRNs and RNs. This scholarly project aimed to assist the staff of a health care facility in understanding the scope of the problem in the renal population and the best clinical practice guidelines for the prevention, evaluation, and role of APRNs in managing patients on home dialysis with kidney disease. The NKF Kidney Disease Improving Global Outcomes (KDIGO) guidelines incorporated recommendations for educating patients about self-management, using Orem's self-care deficit theory, and involvement in their health care. The principal result was to strengthen the clinical staff's knowledge of NKF KDOQI guidelines on the function of APRNs in home therapies. The other outcome was to measure the intent of the clinical staff after education.

The practice-focused question for this project was the following: Does staff education about the clinical practice guidelines developed by the National Kidney Foundation in 2002 and the scope of the APRN in the renal dialysis population improve their knowledge and intent to follow the guidelines? The project was conducted through an invitation for individuals to participate, which was posted in the facility cafeteria, requesting individuals attend the education session. The participants, including RNs and APRNs, had the opportunity to join in one of the two educational sessions. Twenty participants attended the training. They completed a demographic questionnaire, a pretest (see Appendix A), and a posttest (see Appendix B). The education program (see

Appendix D) included the guidelines from the NKF KDIGO and current EBP information for successfully managing renal disease patients and home dialysis.

Sources of Evidence

The resources used for the project included files from the Cochrane Library, Medline, Google Scholar, Nursing databanks, the NKF, and the NKF KDOQI databases. These databases provided information about CKD and ESRD used for applicable EBP guidelines and methodologies. The main phrases used to collect the data were *CKD*, *ESRD*, *home dialysis*, *CKD treatment*, *management of CKD*, *NKF guidelines*, *kidney failure*, *recent principles of kidney care*, *EBP home dialysis*, *peritoneal dialysis*, *home hemodialysis*, and *APRN in dialysis*. Using these words provided the data of evidence required from the texts. I used a pretest and posttest evaluation to gauge the team's awareness of kidney disease, highlighting the role of APRNs in home dialysis.

Findings and Implications

Twenty individuals attended the educational training. Of the 20 participants, 17 (85%) were women. Six (30%) were APRNs, and 14 (70%) were RNs. Two (10%) worked in health care for 0 to 6 years, four (20%) for 7 to 10 years, seven (35%) for 11 to 15 years, three (15%) for 16 to 20 years, three (15%) for 21 to 30 years, and one (5%) for more than 30 years. Data were also collected regarding years worked in dialysis, which included one (5%) for 21 to 30 years, four (20%) for 16 to 20 years, eight (40%) for 11 to 15 years, four (20%) for 7 to 10 years, and three (15%) for 0 to 6 years. The team was also asked about the standards for managing CKD, ESRD, and home dialysis. Results included two (10%) unaware of any standards, 12 (60%) using both NKF KDIGO and

KDIGO, six (30%) using only NKF KDIGO recommendations, and no one using only the KDIGO standards.

The pretest median result was 59.36%, and the posttest median result was 95.90%, which indicated a mean growth of 36.54% (see Table 2). The pretest standard deviation was 24.56. At the follow-up, the posttest standard deviation was 2.86, signifying improved knowledge (see Table 2). Furthermore, the Pearson connection figure for the pretest and posttest correlation was 0.59, with a significance of 0.820 (see Table 3). A paired-sample *t* test was conducted to compare the median pretest result to the average of the sequel assessment. The average on the pretest was 59.36 (*SD* = 24.56), and the average on the posttest was 95.90 (*SD* = 2.869). A significant upturn from the pretest to the posttest was established, $t(12) = -5.758$, $p < .02$.

Table 1

Paired 1 Samples Test: Paired Difference

M	*SD*	*SEM*	95% CI of difference (lower)	95% CI of difference (upper)	*t*	*df*	Sig (2-tailed)
-36.54	18.27	3.32	-53.167	-30.72	-5.758	12	2

Table 2

Paired Sample Statistics

Test	*M*	*N*	*SD*	*SEM*
Pretest	59.36	20	24.56	10.028
Posttest	95.90	20	2.869	1.2833

Table 3

Paired-Sample Correlations

Test	N	Correlation	Sig
Pretest and posttest	20	0.59	.820

The team who participated in the education project showed an increase in knowledge of 36.54%. The 30% of contributors who stated they used the one guideline (NKF/KDOQI) scored well on the pretest. The 10% who stated they did not use any standards scored the next highest. The 60% who declared to understand both standards (NKF/KDIGO and KDOQI) achieved the lowest scores.

Figures 4 and 5 show the average number of individuals based on the years of dialysis for the pretest and posttest. The contributors with 0–6 years of experience had the largest knowledge increase from the pretest to the posttest (see Table 4). The results indicated that the cluster of individuals with the most experience in dialysis demonstrated some progress in understanding; however, they indicated that they did not intend to do anything with the new knowledge (see Table 5).

Figure 4.

Pretest Results Based on Years Working in Dialysis

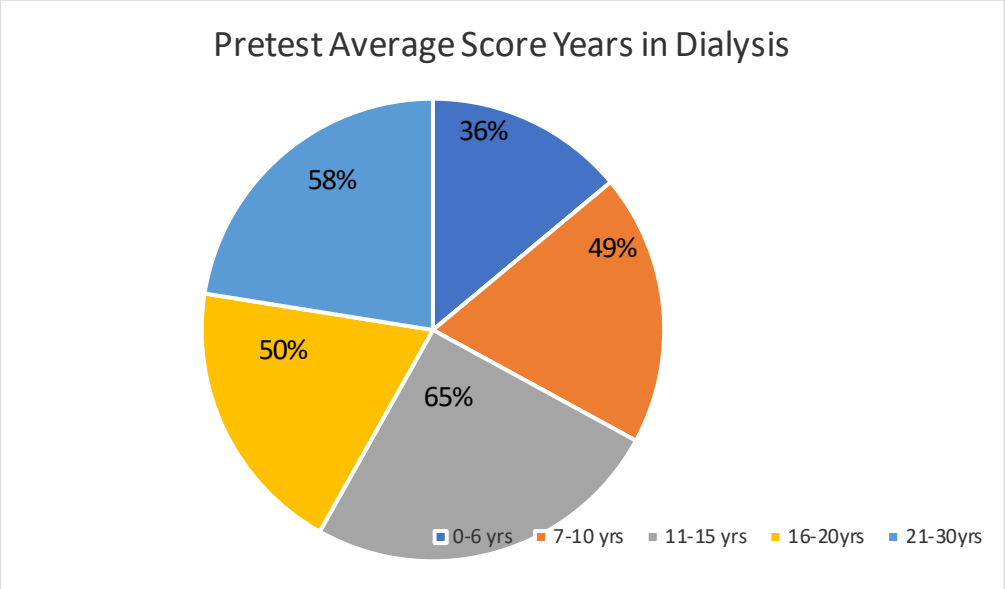


Figure 5.

Posttest Results Based on Years Working in Dialysis

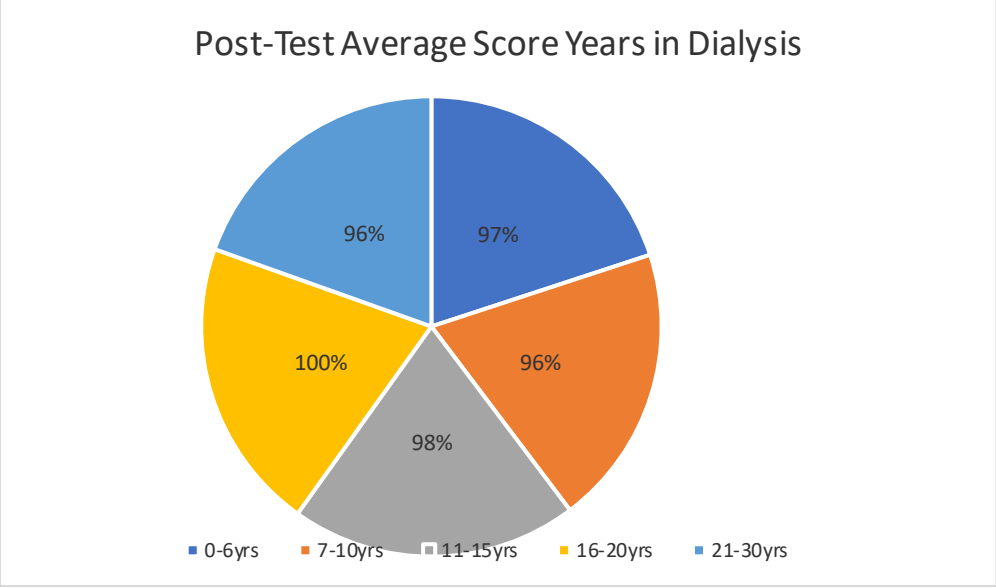


Table 4

Average of Increase by Years in Dialysis

Test	0–6	7–10	11–15	16–20	21–30
Row 1	36%	49%	65%	50%	58%
Row 2	97%	96%	98%	100%	95%
Row 4	61%	47%	33%	50%	37%

Table 5

Staff Intention After Education Session

Category	0–6	7–10	11–15	16–20	21–30
Collaboration with others	100%	86%	2%	45%	0%
Incorporate the guidelines	100%	14%	98%	45%	0%
Do nothing and continue as is	0%	0%	0%	10%	100%

Implications

The clinical team must take the necessary steps to improve the lives and care of renal dialysis patients, particularly in providing education and supporting patients through self-care. Kidney disease is a financial burden on health care organizations. The main goal of the treatment is to prevent and decrease complications related to renal disease and decrease the socioeconomic burden on the public. Most importantly, treatment improves the conditions of patients who suffer from kidney disease on home dialysis. Like prior studies conducted for residents, physicians, and APRNs (Agrawal et al., 2008; Fox et al., 2006; Thompson-Martin et al., 2015), the current outcomes indicated that the clinical staff were uninformed of various facets of taking care of renal disease patients.

Furthermore, the guidelines used are the basis for managing CKD and may be used to support the patients in being accountable for managing their disease. For RNs, education about a topic gives them the power to teach the patients the necessary skills to perform self-care. For the patients, the data they get from the team will assist them in avoiding and diminishing problems (Chan et al., 2020). The KTA framework assisted in monitoring NPs' awareness concerning the significance of improved understanding.

The quality of care given to renal disease patients is vital. According to Chan et al. (2020), nephrology nurses, whether RNs or APRNs, are essential in addressing the problem and improving patient clinical outcomes. It is critical for other specialties to go through interdisciplinary events and to participate in programs meant to assist people diagnosed with CKD. As stated by Chan et al. (2020), it is vital to expand clinical knowledge through research. The current project may offer progressive social change as the clinical team's knowledge about kidney disease increases and evidence-based approaches are integrated into the care plan.

Recommendations

To enhance staff's knowledge of kidney disease, ongoing education and applying EBP approaches should continue. Many patients suffer from CKD, and the majority are in-center and would benefit from home dialysis. Therefore, RNs and APRNs must practice to their full capacity based on the schooling and certificates they have attained (Bednarski et al., 2023). Nurses can care for these patients as advanced experts through analytical thinking for complex clinical issues and interdisciplinary communication (Bednarski et al., 2023). There are many standards for renal disease treatments (Qaseem

et al., 2013); however, numerous clinical staff are unaware of these standards. The team must adopt evidence-based standards to provide excellent patient care.

As providers, APRNs must implement EBP for treating patients with renal disease. The results from the current study demonstrated that the awareness of APRNs who worked in health care and dialysis for many years can be supplemented with guided instruction. The anticipation is that the information given is translated into practice to improve patient outcomes.

Strengths and Limitations of the Project

This DNP project had the administrative and clinical teams' support in permitting me to perform the training program. Though the facility was hectic with high patient volume, the team participated in the education program. An added asset to this project was the staff's attentiveness; they were eager to learn and understand CKD, ESRD, and the role of the APRN in home dialysis. The teaching materials were adopted from the NKF guidelines and the CKD knowledge questionnaire with Agrawal's permission (see Appendix C). This questionnaire had been validated by a panel of individual specialists (Agrawal et al., 2009).

One weakness of the project was the size of the group who participated; it was only 20 individuals, and others were not allowed to contribute. The company permitted the candidates from one facility to participate. Replicating the study with a bigger applicant group in other facilities could corroborate the results. Also, it is recommended that a supplemental study be performed 90 days after the education meeting to determine whether the staff retained the knowledge and followed through with their intentions.

Summary

The outcomes confirmed that there is a necessity for EBP training associated with CKD for APRNs and RNs. The goal of this project, which was to increase the knowledge and measure the intent of the clinical staff, was met. This study provided the clinical team with an understanding of CKD, ESRD, and the role of APRNs in home dialysis. Also, the results indicated increased awareness of the NKF KDIGO for phases of CKD, causes of ESRD, managing ESRD, and the APRN's role in home dialysis. This training was anticipated to enhance the treatment of kidney disease patients.

Section 5: Dissemination Plan

According to Forsyth et al. (2010), it is imperative to disseminate EBP discoveries to stakeholders and other health care professionals so that improvements can be repeated or applied in other settings. Dissemination of results occurred at the project site. Dissemination provided constructive comments about the project from the pretest, education program, and posttest, indicating that the staff better understood kidney disease. There is also a plan for the presentation with other committees, including a plan for sustainability and dispersion to other areas. I have been asked to present at the local American Nephrology Nurses Association chapter quarterly conference. This presentation will allow stakeholders to provide comments and feedback. I aim to publish the article within the next year, which may have a lasting impact on the health care industry (see White et al., 2019) and may introduce new knowledge to the medical world (see Kitson & Harvey, 2016). The patient's health can be improved by disseminating findings and data by the clinical team and affected role (Schipper et al., 2016).

Analysis of Self

I have worked with numerous patients who suffered from various chronic illnesses, including renal disease. I have also encountered some patients who are compliant and others who are noncompliant with their treatments. My intent is to educate nurses so they can better assist their patients to comply. In my work as a nurse leader, I have learned about incorporating evidence-based strategies and educating the team at the facility.

As a specialist, I understand that being well-informed to address problems on various issues is critical; nurses should use the guidelines addressed in the current study as they progress through their careers in nursing (American Association of Colleges of Nursing [AACN], 2006). By using the NKF standards, I was able to execute the education program for the staff and make it efficient for them to apply to the renal population. The education program included providing suggestions to the organization for appropriate communication capabilities, finances, and capital to provide quality care.

Incorporating the DNP essentials into practice, such as interacting with others, cooperating, and discussing information with additional health experts (AACN, 2006), is part of being the project leader. I continue to progress in clinical proficiency, especially as a DNP student, to maintain what is needed to work through the advancements in health care. The Institute of Medicine called for health system transformation through interprofessional, evidence-based care and expert clinical leadership (McCauley et al., 2020). I embraced this calling and accomplished it throughout my practicum experiences and completion of this staff education project.

I was able to apply the AACN Essential II: Organizational and Systems Leadership for Quality Improvement and Systems Thinking to

> improve patient and healthcare outcomes by utilizing the knowledge and skills acquired with nursing and healthcare goals to eliminate health disparities and to promote patient safety and excellence in practice practical communication skills that will facilitate interdisciplinary collaboration and team among the healthcare providers. (AACN, 2006, p. 10)

I am excited about this experience and am more knowledgeable about working with teams and providing in-service education. A lot has been gained while completing the DNP project, and I will use my expertise and abilities as I progress to become a DNP-prepared nurse leader.

Summary

Awareness about renal disease is critical when providing treatment to kidney patients. This DNP assignment included educating staff about CKD, ESRD, and the role of APRNs in home dialysis. The team in the facility required teaching on CKD guidelines and the role and responsibilities of APRNs in home dialysis. An education session was executed. The practice-focused question was the following: Does staff education about the clinical practice guidelines developed by the National Kidney Foundation in 2002 and the scope of the APRN in the renal dialysis population improve their knowledge and intent to follow the guidelines? The results from the pretest/posttest demonstrated that the team had more understanding of kidney disease guidelines. This staff education project encouraged progressive social transformation for all.

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Appendix A: Pretest

Chronic kidney disease (CKD) is an increasing health problem. The National Kidney Foundation published the KDOQI clinical guidelines (Kidney Disease Outcomes Quality Initiative) for managing CKD.

Your response will immensely help improve the quality of care given to this special population.

What best describes you?
- RN
- APRN

Gender?
- Male
- Female

Years worked in healthcare.
- 0-5 yrs.
- 6-10 yrs.
- 11-15 yrs.
- 16-20 yrs.
- More than 20 years

Which guidelines do you use to manage CKD, ESRD, and Home Dialysis?
- NKF KDOQI
- KDIGO
- Unaware of any guidelines
- Both NKF and KDIGO

Years worked in Dialysis.
- 0-5 yrs.
- 6-10 yrs.
- 11-15 yrs.
- 16-20 yrs.
- More than 20 years

How knowledgeable are you regarding the role of the APRN in home dialysis?

A. Not knowledgeable
B. Somewhat knowledgeable
C. Very knowledgeable

1. What is the definition of CKD?

A. Proteinuria in the urine x 2 for three months
B. GFR < 60 ml/min1.73m for >3months,
C. Proteinuria in the urine x 3 for three months
D. Kidney Damage and needing to start renal replacement therapy, GFR < 60 ml/min1.73m for > 3 months, Proteinuria in the urine x 3 for three months.
E. All the above
F. I don't know.

2. At what stage of CKD is ESRD diagnosed?

A. Stage 1 eGFR 90 or Higher
B. Stage 2 e GFR 60-89
C. Stage 3 eGFR 30-59
D. Stage 4 eGFR 15-29
E. Stage 5 eGFR less than 15
F. I don't know.

3. What test would the APRN order to assess kidney damage in a patient at increased risk for CKD?

A. Serum creatinine, 24-hour urine creatinine clearance and protein excretion, Random urine albumin or urine protein.
B. Serum creatinine to estimate GFR.
C. Urinalysis and random urine for albumin protein creatine ratio
D. Urine dipsticks to estimate protein or albumin.
E. All the Above
F. B, C, and D

4. What is the recommended modality for fluid removal and reaching the goal B/P for CKD?

A. Peritoneal Dialysis
B. Home Hemodialysis
C. Nocturnal Home Hemodialysis
D. In-Center Hemodialysis
E. All the above
F. A, B, and C

5. What are the risk factors for CKD?

A. 60 years or greater
B. Blacks/ African American
C. Diabetes Mellitus (DM), Hypertension, Overweight
D. History of Lupus
E. All the above
F. I don't know.

6. What are the renal replacement therapies?
A. Hemodialysis, Peritoneal Dialysis
B. Home Hemodialysis, Transplantation
C. All the above
D. None of the above

7. What are the complications of CKD?
A. Hypertension, decreased quality of life
B. Anemia, malnutrition, bone disease
C. End Stage Kidney Disease (ESKD)
D. Cardiovascular Disease, Death
E. B, C, D
F. All the above
F. I don't know.

8. At what stage of CKD is APRN most beneficial?
A. Stage 1 and Stage 2
B. Stages 2, 3, and Stage 4
C. Stages 3, 4 and 5
D. Stage 4
E. Stage 5
F. A and C

9. How would the APRN manage anemia?
A. Aranesp or Epogen, Give Iron supplement (orally or intravenously)
B. Measurement of blood serum erythropoietin.
C. Discuss with MD for management of anemia.
D. Order stool for occult blood and discuss colonoscopy if present.
E. A, B, D
F. A-D

10. What are the identified barriers to Home Dialysis?
A. Individual, Care Partner Burnout
B. Program/Unit Barriers, Providers
C. Training
D. A, B
E. A, B, and C

11. What areas of the dialysis journey is the APRN valuable?
A. Education and re-education of high-risk issues, Assessments, Monitoring
B. Home environment, Supply ordering, and inventory
C. Understanding lab values, Prescription management
D. A and B
E. A, B, C
F. A and C

12. What improvement is associated with more frequent dialysis?
A. Reduction in LVH, fewer low blood pressure episodes,
B. Less blood pressure medications are needed, decrease in systolic blood pressure.
C. A and B
D. None of the above

Appendix B: Posttest

Chronic kidney disease (CKD) is an increasing health problem. The National Kidney Foundation published the KDOQI clinical guidelines (Kidney Disease Outcomes Quality Initiative) for managing CKD.

Your response will immensely help improve the quality of care given to this special population.

Years worked in Dialysis.

- 0-5 yrs.
- 6-10 yrs.
- 11-15 yrs.
- 16-20 yrs.
- More than 20 years

1. What is the definition of CKD?
   A. Proteinuria in the urine x 2 for three months
   B. GFR < 60 ml/min1.73m for >3months,
   C. Proteinuria in the urine x 3 for three months
   D. Kidney Damage and needing to start renal replacement therapy, GFR < 60 ml/min1.73m for > 3 months, Proteinuria in the urine x 3 for three months.
   E. All the above
   F. I don't know.
2. At what stage of CKD is ESRD diagnosed?
   A. Stage 1 eGFR 90 or Higher
   B. Stage 2 e GFR 60-89
   C. Stage 3 eGFR 30-59
   D. Stage 4 eGFR 15-29
   E. Stage 5 eGFR less than 15
   F. I don't know.
3. What test would the APRN order to assess kidney damage in a patient at increased risk for CKD?
   A. Serum creatinine, 24-hour urine creatinine clearance and protein excretion, Random urine albumin or urine protein.
   B. Serum creatinine to estimate GFR.
   C. Urinalysis and random urine for albumin protein creatine ratio
   D. Urine dipsticks to estimate protein or albumin.
   E. All the Above
   F. B, C, and D
4. What is the recommended modality for fluid removal and reaching the goal B/P for CKD?
   A. Peritoneal Dialysis
   B. Home Hemodialysis
   C. Nocturnal Home Hemodialysis
   D. In-Center Hemodialysis
   E. All the above
   F. A, B, and C
5. What are the risk factors for CKD?
   A. 60 years or greater
   B. Blacks/ African American
   C. Diabetes Mellitus (DM), Hypertension, Overweight
   D. History of Lupus
   E. All the above
   F. I don't know.
6. What are the renal replacement therapies?
   A. Hemodialysis, Peritoneal Dialysis
   B. Home Hemodialysis, Transplantation
   C. All the above
   D. None of the above
7. What are the complications of CKD?
   A. Hypertension, decreased quality of life
   B. Anemia, malnutrition, bone disease
   C. End Stage Kidney Disease (ESKD)
   D. Cardiovascular Disease, Death
   E. B, C, D
   F. All the above
   F. I don't know.

8. At what stage of CKD is APRN most beneficial?
   A. Stage 1 and Stage 2
   B. Stages 2, 3, and Stage 4
   C. Stages 3, 4 and 5
   D. Stage 4
   E. Stage 5
   F. A and C
9. How would the APRN manage anemia?
   A. Aranesp or Epogen, Give Iron supplement (orally or intravenously)
   B. Measurement of blood serum erythropoietin.
   C. Discuss with MD for management of anemia.
   D. Order stool for occult blood and discuss colonoscopy if present.
   E. A, B, D
   F. A-D
10. What are the identified barriers to Home Dialysis?
   A. Individual, Care Partner Burnout
   B. Program/Unit Barriers, Providers
   C. Training
   D. A, B
   E. A, B, and C
11. What areas of the dialysis journey is the APRN valuable?
   A. Education and re-education of high-risk issues, Assessments, Monitoring
   B. Home environment, Supply ordering, and inventory
   C. Understanding lab values, Prescription management
   D. A and B
   E. A, B, C
   F. A and C
12. What is your intent after the completion of this presentation?
A. Continue with the current state of work.
B. Collaborate with other team members.
C. Incorporate the guidelines into the work.
D. Nothing; this does not pertain to my work.
13. What improvement is associated with more frequent dialysis?
   A. Reduction in LVH, fewer low blood pressure episodes,
   B. Less blood pressure medications are needed, decrease in systolic blood pressure.
   C. A and B
   D. None of the above
14. Do you feel more knowledgeable now on the roles of APRN in home dialysis and caring for CKD patients after this education program?

Appendix C: Permission to Utilize Questionnaire

On Jan 6, 2024, at 3:05 PM, Varun Agrawal [redacted]> wrote:

Thank you, Bilinda, for your email -yes, OK to use my questionnaire for your project. Pls do share with me the project/paper after completion. Good Luck!
Varun Agrawal MD

On Saturday, 6, 2024, at 10:50:02 AM EST, Bilinda Dawkins-Francis <bilinda.dawkins-francis[redacted]> wrote:

Dr. Agrawal

I would like permission to utilize the questionnaire in part for my DNP project. I will cite the reference and modify the tool to fit my needs.

Thanks a lot!

Bilinda Dawkins-Francis

Appendix D: Staff Education Presentation

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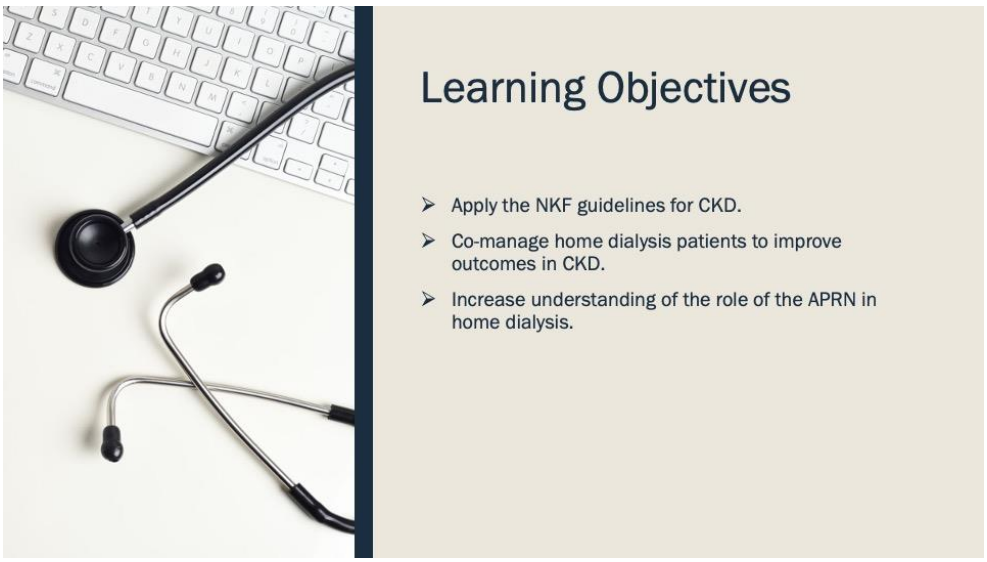


Case Question 1

- A 50-year-old Hispanic female was diagnosed with type 2 diabetes at age 30. She has medications as prescribed since diagnosis. The fact that she has confirmed diabetes puts this patient at:
  - A. Higher risk for kidney failure and CVD
  - B. Higher risk for kidney failure only
  - C. Higher risk for CVD only
  - D. None of the above

Case Study Question 2

A 42-year-old African-American man with diabetic nephropathy and hypertension was referred for education to the APRN for treatment options. Name the different options available to him.

A. Peritoneal Dialysis

B. Home Hemodialysis

C. Hemodialysis

D. Transplantation

CKD Public Health Issue

- Worldwide, public health problems increasing in incidence and prevalence, resulting in poor outcomes and high costs (Levy et al., 2003).
- 26 million Americans are affected.
- Poor Outcomes such as decreased kidney function and cardiovascular disease.
- Home dialysis modalities are used in a minority of patients with kidney failure in the United States.

➢Why Home Dialysis and CKD 2025 Dialysis Outlook

650,000 Patients

40% more center

40% more Nephrologists

40% more staff

STAGES OF CKD[1]

CKD Stage	Classification GFR	Description
	≥90 + risk factors	At risk for CKD
1	≥ 90	Mild kidney damage, w/normal or increased GFR
2	60-89	Mild kidney damage, w/ mild decreased GFR
3	30-59	Moderate decreased GFR
4	15-29	Severe decreased GFR
5	<15 or dialysis	Kidney Failure or ESRD

DEFINITION OF CKD

CKD is defined as positive proteinuria tested twice in 3 months.

GFR less than 15 mL/min per 1.73 m^2 is accompanied in most cases by signs and symptoms of uremia.

Need to start kidney replacement therapy (dialysis or transplantation).

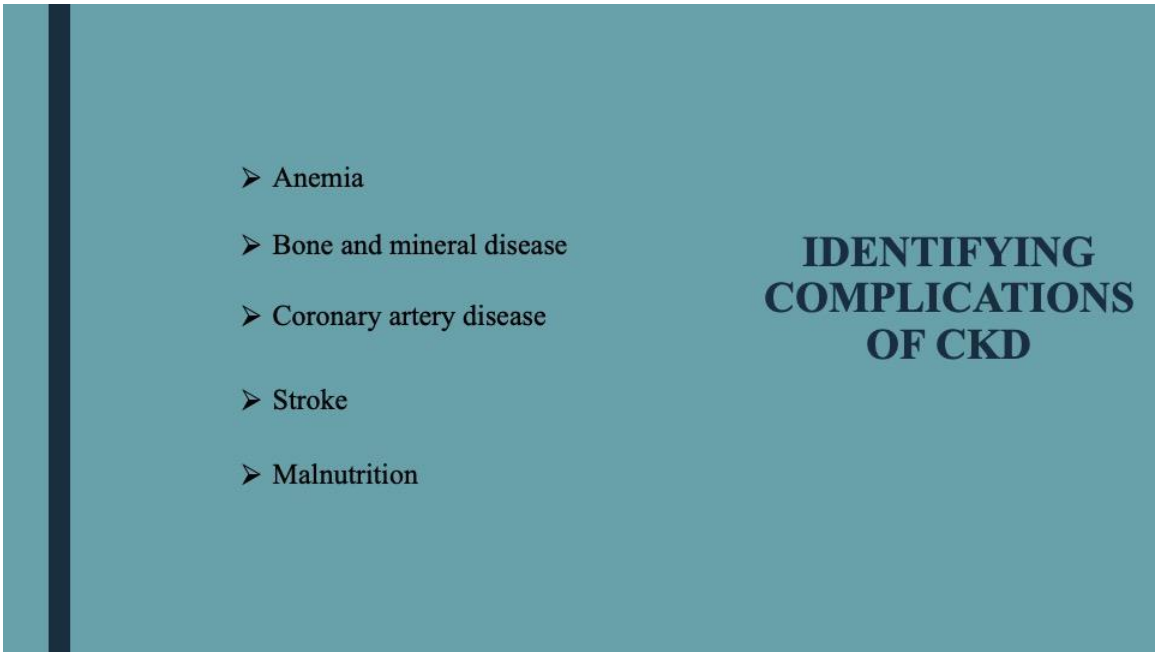
RISK FACTORS FOR CKD

- Age > 60 years
- African American/Hispanic
- Diabetes mellitus
- Hypertension
- Obesity
- Systemic lupus erythematosus
- Daily NSAID use
- Family history of CKD

NURSE PRACTITIONER MANAGEMENT OF CKD

Orders

- Goal BP < 130/80 or <125/75 mm Hg
- Start on ACE/ARB for CKD
- Dietary salt restriction < 2.4 g day^{-1}
- Lipid control
- Glycemic control
- Weight loss if obese
- Smoking cessation
- BP goal < 125/75 mm Hg in presence of proteinuria
- Evaluate for anemia of CKD for GFR < 60
- Evaluate for bone and mineral disorder of CKD for GFR < 60


IDENTIFYING COMPLICATIONS OF CKD
Anemia
Bone and mineral disease
Coronary artery disease
Stroke
Malnutrition

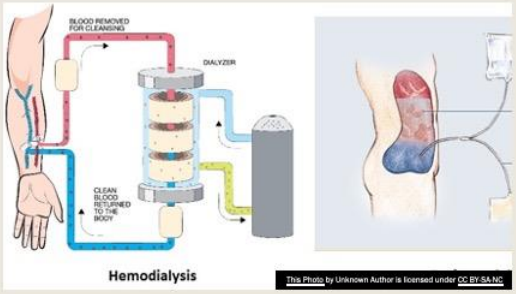
Tests NPs order to assess kidney damage in a patient who is at increased risk for CKD.

- Serum creatinine to estimate GFR
- Urinalysis with microscopic analysis
- Urine dipsticks to estimate protein or albumin
- Random urine for albumin and protein creatinine ratio

Home Dialysis Types

PERITONEAL DIALYSIS

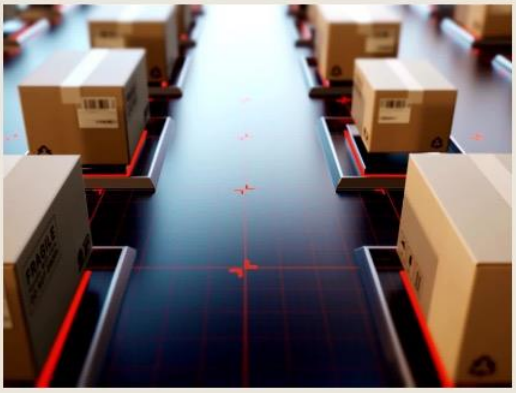
HOME HEMODIALYSIS



Hemodialysis

Barriers to Home Dialysis

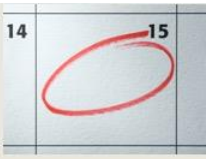
- Individual
- Program/Unit Barriers
- Training
- Care Partner Burnout
- Providers



The 2018 National Kidney Foundation–Kidney Disease Outcomes Quality Initiative (NKF-KDOQI) Home Dialysis Conference provided numerous suggestions to decrease barriers to the uptake and retention of home dialysis therapies (.

Potential Benefits of Home Dialysis

- Greater schedule flexibility-travel
- Improved sleep quality
- Improved quality of life
- Fewer fluid and dietary restrictions
- Most likely to receive a transplant
- Improve survival



Potential Benefits of Home Dialysis

- Improved 5-year survival

Chazot et al., 2017

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National Kidney Foundation: www.kidney.rorg

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