

Utilizing Frailty Assessment to Impact Nursing Care for Patients with End-Stage Kidney

Disease: A Quality Improvement Project

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Key findings of this quality improvement (QI) project include:

- Frailty education enhances nurse knowledge and frailty assessment skills in end-stage kidney disease (ESKD) registered nurse (RN) case managers.
- Frailty care education improves care practices of these RNs by prompting outreach to patients, caregivers, providers, and other healthcare team members.
- Frailty index scores provide objective, practical, clinical data points to incorporate into nursing assessment, supporting clinical judgment.
- Frailty index scores equip the nurses with a continuous assessment of frailty that can be monitored longitudinally.
- Frailty index scores can promote timely nurse interventions to help mitigate the negative effects of frailty.
- While some nurses noted that frailty assessment took more time than anticipated, they still valued the frailty index assessment tool for providing a structured approach to fluid situational conditions.
- Frailty education and assessment provided nurse case managers the ability to recognize frailty as a multidimensional concept beyond physical appearance or ability and enabled better informed care decisions for frail ESKD patients.

Background and Purpose

Frailty is highly prevalent among patients with ESKD (Chowdhury et al., 2017; Zhang et al., 2023). Frailty strongly predicts poor outcomes, including increased morbidity and mortality, and diminished quality of life (Hoogendijk et al., 2019; Karnabi et al., 2023). The high

prevalence of frailty in ESKD patients and its significant impact on healthcare costs make it an important area of focus to improve care delivery (Sy et al., 2019).

Despite this, frailty is often underrecognized in ESKD patients, especially in telehealth settings, where physical assessment is limited (Kennard et al., 2023). Many nurses lack the education and standardized tools needed to assess frailty effectively (Li et al., 2024; Karnabi et al., 2023). Frailty is a complex interplay of multiple domains that contributes to increased vulnerability and ongoing decline. Managing frailty requires continuous assessment and adaptation to subtle changes in a patient's condition over time. Clinicians often perceive frailty and the progression to death as a fixed point in time rather than a fluid process (Cardona-Morrell et al., 2017). This static perspective makes it difficult to tailor treatment strategies to an ever-evolving condition, leading to care approaches that may not adequately address the shifting needs of frail ESKD patients, which can lead to poor outcomes and increased healthcare costs (Cardona-Morrell et al., 2017; Coker et al., 2019; Lim et al., 2019; Liu et al., 2022; Ruiz et al., 2020; Shi et al., 2023; Walston et al., 2019). Addressing the lack of frailty education and standardized tools for telephonic renal case managers is crucial for improving patient care and outcomes.

The purpose of this QI project was to improve frailty recognition and management among ESKD patients by providing telephonic renal nurse case managers with comprehensive frailty education and a frailty assessment tool. Specifically, the project aimed to determine if frailty education and utilization of a frailty assessment tool impacted the nursing care of ESKD patients by increasing nurse knowledge, perception, identification, and assessment of frailty and prompted nurse interventions.

Methodology

This QI project used the Lean Six Sigma framework to create and implement the intervention targeting telephonic renal nurse case managers in a large renal-care provider (SixSigma.us, 2025). Ten full-time telephonic RN case managers were recruited via purposive convenience sampling. There were two interventions: education and monitoring. During the education phase, nurses participated in a four-hour evidence-based frailty education program, covering frailty's definition, its clinical significance, and strategies for frailty assessment and management. Instructional methods included lectures, video clips, case studies, and small group discussions. During the monitoring phase, nurses utilized a 25-item renal frailty index (RFI) assessment tool adapted to the ESKD population to assess a nurse-curated cohort of six patients at three intervals over the course of nine weeks. Nurses documented the RFI scores, their interventions, and the changes in care prompted by frailty assessments. Surveys were administered before and after the education phase to measure changes in the nurses' knowledge, comfort levels, and practices related to frailty care. A final survey gathered additional feedback on the usability of the frailty assessment tool and its impact on nursing practice. The final data analyses by descriptive statistics were based on the seven nurses who completed the entire project.

Results

The project demonstrated improved nurse knowledge, comfort, and practice in frailty care. Nurses' knowledge of frailty improved with mean knowledge scores rising from 71% pre-education to 84% post-education. Prior to the intervention, 71% of nurses considered frailty assessment important in their practice. By the end of the project, 100% of nurses recognized frailty assessment as a critical component of care. Additionally, no nurses reported feeling uncomfortable with frailty care by the project's conclusion. Nurses conducted 110 RFI

assessments on 47 patients, identifying a wide range of frailty statuses from fit to moderately frail. These assessments prompted 65 patient outreaches, 25 referrals to primary care providers and specialists, and 32 communications within the internal care team. Nurses also expressed that the RFI tool provided a more transparent, more structured approach to frailty assessment, enhancing their ability to track patient changes over time. Nurses found the RFI tool easy to use, with 57% reporting that it was straightforward and 71% noting that the health deficits were easily identified in the patient records. While some nurses noted that frailty assessments took more time than expected, they reported that the tool helped them focus on the broader picture of patient health which facilitated more targeted interventions.

Strengths and limitations

This project utilized a well-structured, evidence-based education program and frailty assessment tool, providing a practical, objective framework for nurses to understand and assess frailty in ESKD patients. A comprehensive approach to the project addressed multiple aspects of frailty care, including nurse education, frailty assessment, and patient care interventions. This allowed for a holistic perspective that enhanced nursing clinical judgement and frailty management with a clear focus on improving patient outcomes. The use of a telephonic care model and assessment tool aligned with the needs of the nurses, along with the growing trend of telehealth in case management, makes the interventions feasible and relevant for the current healthcare landscape.

This QI project had several limitations. The small sample size limits the generalizability of the findings. Conducting the study in a virtual environment may have influenced nurse education and the frailty assessment process, potentially affecting engagement and accuracy. Additionally, a perceived high workload led to three nurse withdrawals from the study, despite

the availability of support, which was seldom utilized. Time constraints also posed challenges, including the effort required to search the electronic medical record, contact patients or caregivers to assess health deficits, and manually extract data. These factors may have impacted the efficiency and feasibility of integrating frailty assessment into routine practice. The project focused on short-term changes in nurse knowledge, comfort, and practice. Long-term follow-up would be needed to assess if the improvements in frailty care translate into sustained changes in patient outcomes, such as reductions in hospitalizations or improvements in quality of life.

Implications and Conclusions

The results of this QI project underscore the importance of frailty education and assessment in improving care for ESKD patients. By equipping nurses with the necessary knowledge and tools to assess frailty, the project successfully enhanced their ability to initiate informed, timely interventions. The introduction of the RFI tool facilitated a more structured and systematic approach to frailty care. Nurses reported that the tool helped them better understand where their patients stood along the frailty continuum, thus enabling more targeted care. The findings suggest that frailty assessment should be incorporated into the routine care of ESKD patients. Moving forward, automating frailty assessments could further streamline the process and alleviate time burdens on nurses. Additionally, expanding frailty education into nursing curricula and continuing professional development will ensure that future nurses are well-equipped to identify and manage frailty in ESKD patients.

This QI project demonstrated that frailty education and the use of a standardized assessment tool can improve the recognition and management of frailty in ESKD patients. By empowering nurses with the knowledge and tools to assess frailty accurately, the project contributed to better patient outcomes and more efficient care delivery. Moving forward, it is

essential to integrate frailty care into routine practice and explore opportunities for automation to enhance the timeliness and effectiveness.

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