Research Article

SELF-EFFICACY AND SYMPTOM MANAGEMENT IN PATIENTS WITH CHRONIC KIDNEY DISEASE: LITERATURE REVIEW

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Abstract

Background: Chronic kidney disease (CKD) is a global health problem that causes a significant burden of physical and psychological symptoms, demanding comprehensive self-management from patients. Self-efficacy, as an individual's belief in their ability to successfully perform an action, has been identified as a crucial factor influencing symptom management behavior and therapy adherence in CKD patients. **Purpose:** This study aims to analyze the relationship between self-efficacy and symptom management in CCK patients and the role of interventions in improving self-efficacy and compliance. **Method:** This study used a literature review of 10 articles (2015–2025) on self-efficacy and symptom management in CKD patients, sourced from ProQuest, PubMed, JSTOR, and others. **Results:** The results show a consistent positive correlation between self-efficacy and self-management, as well as adherence to medication regimens and dietary/fluid restrictions. Various interventions, particularly nurse-led and technology-based ones, have been shown to be effective in enhancing self-efficacy, which in turn improves self-management behavior and clinical outcomes. Clinical implications emphasize the central role of nurses in developing personalized, evidence-based intervention programs to enhance patient self-efficacy. This study concluded that self-efficacy is a key determinant of successful symptom management in patients with chronic kidney disease (CKD), and recommendations include the integration of routine self-efficacy assessments and the development of multidisciplinary interventions focused on strengthening patient self-efficacy.

Keywords: self-efficacy, symptom management, chronic renal failure, therapy adherence.

Background

Chronic Kidney Disease (CKD) has become a serious global public health problem, characterized by an increasing prevalence and substantial healthcare costs worldwide (Lv & Zhang, 2019). This condition is defined as impaired kidney function lasting at least three months, which progressively impairs the kidneys' ability to maintain metabolism and the body's fluid and electrolyte balance (Ellison & Farrar, 2018). This leads to the accumulation of harmful metabolic waste products, known as uremic toxins, in the blood. 4 In its early stages, CKD often has no obvious symptoms, so its progression is slow and often goes undetected.

However, as kidney function deteriorates, the clinical manifestations become widespread and debilitating, affecting nearly every system in the body (Ahmed et al., 2025). Common physical symptoms include chronic fatigue, nausea, vomiting, anorexia (loss of appetite), pruritus (severe itching), edema (swelling) of the extremities, shortness of breath, muscle cramps, chest pain, and skin changes such as vomiting, dry mouth, or choking. Patients may also experience changes in urination frequency, ranging from oliguria (low urine output) to anuria (no urine output), and a characteristic ammonia-like breath odor (for Nursing et al., 2024).

In addition to physical manifestations, CKD also causes significant neurological symptoms, including peripheral neuropathy (numbness, tingling, and weakness, especially in the lower extremities), headaches, vision problems, difficulty concentrating, memory loss, confusion, and even decreased level of consciousness and seizures. Cardiovascular complications such as hypertension and arrhythmias are also common, as kidney failure forces the heart to work harder (Adamska-Wełnicka et al., 2021). Other complications that can occur

include anemia due to impaired erythropoietin production, bone disease, gout (hyperuricemia), and kidney failure. hyperkalemia (high potassium levels), and metabolic acidosis (acid buildup in the body) (Yadav et al., 2024).

The complexity and breadth of this symptom burden not only impacts physical aspects, but also leads to drastic lifestyle changes, dependence on renal replacement therapy such as hemodialysis, and profound psychological and social instability. CRF patients often experience depression, anxiety, and high levels of psychological distress, significantly impacting their quality of life (Alkhaqani, 2022).

This dual burden, encompassing both widespread physical suffering and profound psychological impact, creates a highly complex challenge for patient self-management. This underscores the urgency of holistic interventions that consider both dimensions to improve overall patient well-being. Effective symptom management in CRF patients is crucial for slowing disease progression, improving quality of life, and reducing the risk of serious, potentially life-threatening complications. Given the chronic nature of CRF requiring lifelong care, patients must be actively involved in their self-care (Rietjens et al., 2019).

They are responsible for the daily management of this chronic condition, including adherence to hemodialysis schedules, medication regimens, and strict fluid and dietary intake. The concept of self-management in CKD patients broadly encompasses three main tasks: medical management, role management, and emotional management. Medical management involves adherence to prescribed medications, monitoring vital parameters, and attending medical appointments. Role management refers to the patient's ability to adjust to the role changes in their life due to the disease, as well as engaging in healthy behaviors and adhering to medication regimens. Meanwhile, emotional management focuses on managing and managing emotions arising from chronic illness, such as stress, anxiety, and depression, which are often high in hemodialysis patients and can interfere with their self- management abilities (Van de Velde et al., 2019).

Despite the importance of self-management, non-adherence to these behaviors remains high among patients with chronic kidney disease (CKD), contributing to increased mortality and morbidity. Effective self-management has been shown to significantly improve the quality of life of hemodialysis patients. Self-efficacy, a fundamental concept introduced by psychologist Albert Bandura, refers to an individual's belief in their capacity to execute the behaviors necessary to produce a specific performance outcome. It is a personal assessment of how well one can carry out a course of action required to meet a prospective situation (Bekker et al., 2023).

This belief is crucial because it forms the foundation of a person's motivation, well-being, and personal well-being. In chronic illnesses such as CKD, self-efficacy is a patient's belief in their ability to manage symptoms, manage regimens, and cope with illness (A.El-Abbassy et al., 2015).

This research article aims to comprehensively analyze the relationship between self-efficacy and symptom management in patients with chronic kidney disease (CKD). Through a synthesis of empirical evidence from reputable international and national journals, this report will identify how self-efficacy influences adherence to self-management and clinical outcomes. Furthermore, this article will design a clinical safeguard for surgical practice and provide clear recommendations to guide future research, focusing on developing effective interventions to empower patients with CKD.

Method

This study was conducted through a systematic mapping (literature review) related to Self-Efficacy and Symptom Management in Patients with Chronic Kidney Failure. A total of 10 research articles were evaluated from various sources: ProQuest, Science Direct, PubMed, JSTOR, and Springer-Link. The search was conducted using keywords related to the topic, namely Self-Efficacy, Symptom Management, and Chronic Kidney Failure. Limitations of the search process were not only related to the topic but also the year of publication of the article. The publication year of the articles used for the literature review was 2015 to 2025. The inclusion criteria for this article were Self-Efficacy and Symptom Management in Patients with Chronic Kidney Failure in English. The exclusion criteria for this article were research unrelated to Self-Efficacy and Symptom Management in Patients with Chronic Kidney Failure, articles that were not in full text, and articles that were not in English. Based on the results obtained, analysis and discussion were conducted to draw conclusions.

Results and Discussion

The literature search process is presented in the PRISMA diagram and resulted in eight articles from various countries using diverse research

methods. A summary of each article is provided in Table 1.(Ismail et al., 2023; Page et al., 2021).

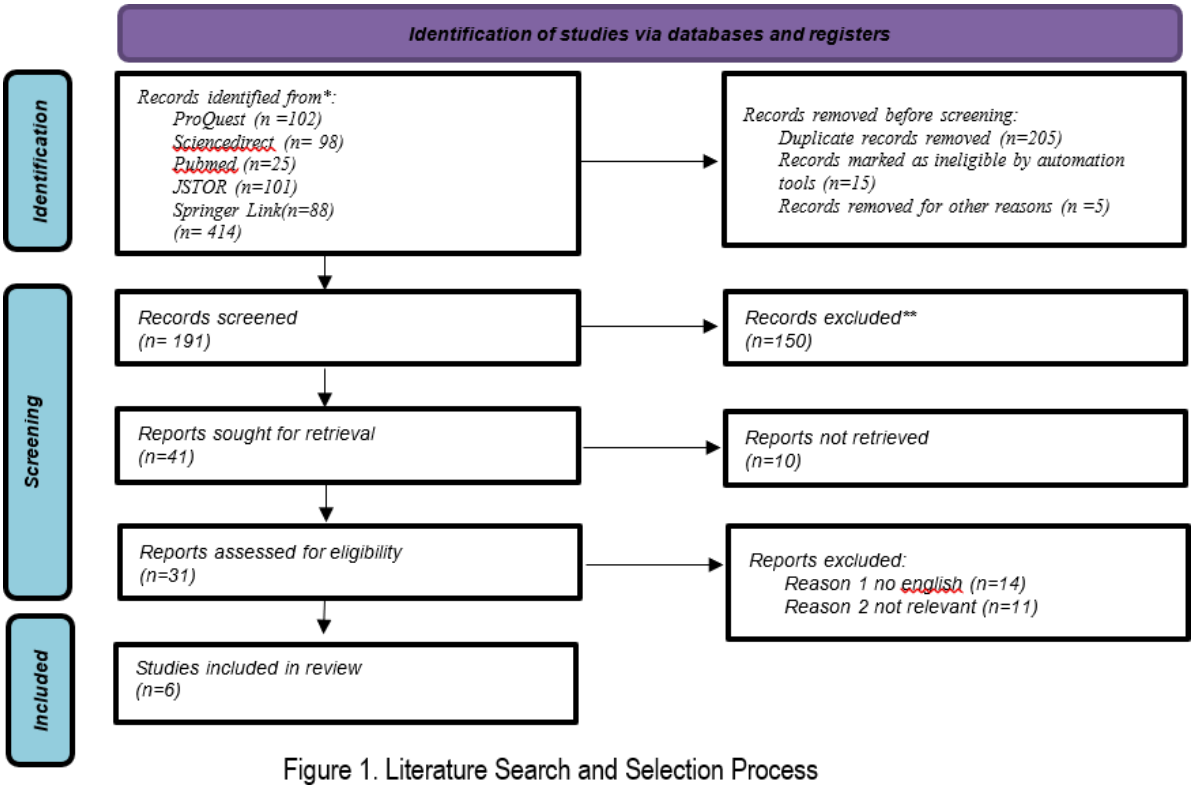

Figure 1. Literature Search and Selection Process

Table 1.Critical appraisal of articles

Author	Year	Method	Results
Wang et al.	2017	RCT	A self-management program significantly increased self-efficacy (medium effect size, g=0.57), reduced anxiety (large effect size, g=-0.95), and depression (medium effect size, g=-0.63), and improved health-related quality of life in patients with CKD. The study also found a small but significant effect on reducing interdialytic weight gain (IDWG), demonstrating the broad benefits of a self-management program targeting both physical and psychological aspects.

Table 1.Critical appraisal of articles

Author	Year	Method	Results
Chen et al.	2019	A meta-analysis	(a total of 2,540 non-dialysis CKD patients) showed that self-management interventions were beneficial for reducing urinary protein, blood pressure levels, exercise capacity, and C-reactive protein (CRP) levels. However, no significant additional benefits were found for kidney outcomes (eGFR) or overall mortality. These findings suggest that self-management interventions are effective in modifying modifiable risk factors in CKD patients, and also confirm that self-management interventions have been shown to improve self-efficacy.
Farris et al.	2025	A meta-analysis	Interventions related to behavior change in dialysis patients revealed that interventions that included a social support component were more successful in increasing self-efficacy. However, interventions that used a "reward and threat" approach may actually induce a self-efficacy effect, highlighting the importance of careful intervention design. Furthermore, interventions that used a "therapy" component (e.g., Cognitive Behavioral Therapy/CBT, motivational interviewing) resulted in significant improvements in physiological outcomes (e.g., decreased phosphate levels and IDWG), particularly when used alone or with fewer additional techniques. This highlights the importance of context and type of intervention in achieving optimal outcomes.
Nguyen et al.	2019	RCT	Patients with stage 3-5 CKD showed that a nurse-led self-management program, guided by Social Cognitive Theory (SCT), significantly improved self-management, knowledge, and self-efficacy after 16 weeks. Furthermore, the physical and mental components of patients' quality of life also showed significant improvements. This study reinforces the important role of nurses in providing self-management education and empowering patients.
Li et al.	2020	RCT	The use of wearable devices, a health management platform, and social media support significantly improved self-efficacy, self-management, quality of life, and even slowed the decline in glomerular filtration rate (eGFR) in patients with stage 1-4 CKD. This indicates the great potential of technology in supporting self-management.
Senthil et al.	2023	RCT	A RCT among hemodialysis patients in India successfully improved patients' disease management knowledge and adherence to treatment regimens, particularly fluid restriction and diet. The study concluded that this educational module can be effectively used as a nurse-led intervention.

Discussion

Synthesis of Key Findings

A comprehensive analysis of various studies, both from reputable international and national journals, consistently shows that self-efficacy is a crucial factor with a positive and significant relationship with symptom management and therapy adherence in patients with Chronic Kidney Disease (CKD). This finding reinforces Bandura's theory that an individual's belief in their ability to perform an action will influence their motivation and behavior (Koutroubas & Galanakis, 2022).

Correlational studies have broadly supported this relationship, showing that higher self-efficacy is directly correlated with better self-management behaviors, including adherence to fluid and dietary intake, medication regimens, and vascular access care. Data from various countries, including Indonesia and Iran, confirm that patients with strong self-efficacy tend to be more active in managing their condition and demonstrate higher levels of adherence to medical recommendations (Xie et al., 2020).

Furthermore, intervention studies provide strong evidence that self-efficacy can be improved through structured programs, and that this improvement positively impacts a variety of clinical and psychosocial outcomes. Meta-analyses have shown that self-management programs significantly increase self-efficacy, reduce anxiety and depression, and improve health-related quality of life in patients with chronic kidney disease (CKD). Nurse-led interventions, for example, have been shown to be highly effective in enhancing self-management, knowledge, and self-efficacy, as well as improving both physical and mental components of quality of life. In fact, the use of technology such as wearable devices and social media has also shown great potential in strengthening self-efficacy, self-management, quality of life, and even slowing the decline in eGFR (Li et al., 2020; Prawira et al., 2023).

It is important to note that the effectiveness of interventions varies greatly depending on their design and components. Interventions that include social support have been shown to be more effective in improving self-efficacy, while approaches based on "rewards and threats" can be counterproductive (Brand & Ekkekakis, 2021). Furthermore, psychological interventions such as Cognitive Behavioral Therapy (CBT) have been shown to be effective in reducing symptoms of pain, fatigue, and depression, indirectly supporting overall symptom management (Clauw et al., 2019).

This underscores that symptom management in patients with CKD requires a multidimensional approach encompassing medical, behavioral, and a broad spectrum of nurse interventions. These findings also reinforce the understanding that self-efficacy serves as a crucial bridge between patients' knowledge about their disease and their ability to actually implement self-management behaviors. Knowledge alone is not enough; patients must have a strong belief that they can apply that knowledge in real-life situations. Furthermore, self-efficacy is also a core coping mechanism that enables CKD patients to face the psychological burden and emotional challenges inherent in chronic illness. Strengthening self-efficacy can directly reduce psychological distress and increase patients' adaptive capacity in coping with their condition.

Clinical Implications

The findings of this study have significant clinical implications for the practice of nursing and patient management of CKD (McCrory et al., 2018).

1. **Routine Self-Efficacy Assessment**:

   Nurses should routinely assess the self-efficacy levels of CKD patients, especially those newly diagnosed or those who exhibit difficulties with symptom management and therapy adherence. The use of valid and reliable self-efficacy assessment tools is highly recommended to identify areas where patients may need further support.25

2. **Self-Efficacy-Based Interventions**:

   Nurses are in a unique position to design and implement interventions that explicitly aim to improve self-efficacy. These interventions should be grounded in a robust behavioral theory, such as Social Cognitive Theory, and encompass Bandura's four sources of self-efficacy: mastery experiences (e.g., setting small, achievable goals), vicarious experiences (e.g., peer support groups), social persuasion (e.g., positive feedback and encouragement), and emotional state maintenance (e.g., relaxation techniques to reduce anxiety).22

3. **Personalized and Holistic Approach:**

   Given the variability in intervention effectiveness, self-management programs should be personalized and tailored to the individual patient's needs. This means considering the patient's preferences, socioeconomic background, and specific symptom burden. Interventions should encompass integrated medical, role, and emotional management, and include psychological support such as CBT to address depression, anxiety, and burnout.2

4. **Leveraging Technology:**

Mobile health (mHealth) technology and health management platforms can be integrated into nursing practice to provide accessible and ongoing self-management support. Smartphone apps and wearable devices can help patients monitor health data, receive education, and interact with healthcare providers, which in turn improves self-efficacy and adherence.

5. **The Nurse's Role as Educator and Supporter:** Nurses are key agents in providing comprehensive education and ongoing support. Education should not only increase knowledge but also build patients' confidence in applying that knowledge. Nurses should empower patients to take an active role in their care decisions, facilitate effective communication between the patient and the care team, and encourage family involvement as a key support system.3

Self-efficacy is a critical determinant that significantly influences the ability of Chronic Kidney Disease (CKD) patients to manage disease symptoms and adhere to complex therapy regimens. A strong belief in one's ability to overcome the challenges posed by CKD not only promotes better self-management behaviors such as adherence to diet, fluid intake, and medication but also acts as a core coping mechanism that reduces psychological burdens such as anxiety and depression.

Empirical evidence from correlational and intervention studies, both internationally and nationally published, consistently demonstrates a positive correlation between self-efficacy and effective self-management, as well as improved clinical outcomes. Interventions designed to enhance self-efficacy, particularly those led by nurses, based on social support, and utilizing technology, have proven effective in empowering patients to take an active role in their care. This increased self-efficacy, in turn, contributes to improved quality of life and, in some cases, slowed disease progression.

Suggestion

Based on the limitations identified, it is recommended that future research consider the following points. First, standardization of research design, instrument use, and intervention duration and type is necessary to facilitate comparison of results and generate more consistent data synthesis. Second, the development of long-term randomized controlled clinical trials (RCTs) is crucial to determine the effectiveness of self-efficacy interventions on long-term clinical parameters such as disease progression and mortality in chronic kidney disease (CKD) patients. Third, patient active involvement in the intervention design process needs to be increased so that the developed programs are more relevant, contextual, and can be effectively implemented in their daily lives. Fourth, it is important to expand the research focus to patients with early-stage CKD or pre-dialysis to identify preventive intervention strategies that have the potential to slow disease progression. Finally, future research should be more sensitive to local cultural aspects and context, including adapting self-efficacy-based interventions to local values, norms, and sociocultural characteristics, so that intervention results can be more widely accepted and implemented.

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