



EDUCATION BASED ON AUDIOVISUAL TECHNOLOGY TO IMPROVE SELF-MANAGEMENT IN CHRONIC KIDNEY FAILURE PATIENTS: A LITERATURE REVIEW

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ABSTRACT

Chronic Kidney Disease (CKD) is a chronic condition requiring long-term management, particularly in patients undergoing hemodialysis. Self-management plays a crucial role in improving patients' quality of life. Health education, especially audiovisual-based education, is considered effective in enhancing patients' understanding and adherence. This study aimed to analyze the effect of audiovisual education on self-management among patients with chronic kidney disease undergoing hemodialysis. This study employed a systematic review method using the PRISMA 2020 approach. Articles were searched through PubMed, Scopus, ScienceDirect, ProQuest, and SAGE Journals databases within the period of 2021–2026. A document review was conducted by systematically analyzing relevant literature retrieved from five electronic databases (ScienceDirect, Scopus, PubMed, ProQuest, and Sage) using predefined keywords. The selected articles were screened and evaluated according to the PRISMA 2020 guidelines, resulting in six eligible studies that met the established inclusion criteria. The findings indicate that health education, particularly audiovisual-based methods such as videos and multimedia, significantly improves self-management in CKD patients. Improvements were observed in knowledge, treatment adherence, self-efficacy, and disease management abilities. Additionally, healthcare providers and family support play important roles in the success of educational interventions. Audiovisual education is effective in improving self-management among CKD patients undergoing hemodialysis.

Keywords: audiovisual education; chronic kidney disease; hemodialysis; self-management

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INTRODUCTION

One of the chronic illnesses with worldwide health concerns, Chronic Kidney Disease (CKD) is one of the main causes of death and continues to exhibit rising prevalence and mortality. The Global Burden of Disease 2023 estimates that between 800 and 850 million people worldwide suffer from chronic kidney disease (CKD) (Collaborators, 2025). Effective illness management, including medication use, symptom monitoring, and other health habits, is necessary for chronic patients to achieve positive health outcomes. These elements include being aware of one's condition, believing that one's behaviors have an impact on one's health, and having access to common resources (Berkman et al., 2011).

Enhancing self-management is one preventive measure that can be used to lower mortality rates while raising hemodialysis patients' quality of life. Patients with chronic kidney failure benefit immensely from self-management since it allows them to better manage their condition. Patients must actively participate in self-management in order to better control their illness (Sinurat et al., 2022). A person's capacity to control their medicine, recurrent symptoms, physical and psychological issues, and the existence of chronic illnesses might alter their way of life. (Wahyusari et al., 2025). Self-management is intended to assist patients in acquiring the knowledge and abilities necessary to enhance their own self-care (Zimbudzi et al., 2019). One of the cutting-edge

methods for teaching patients with Chronic Kidney Failure (CKF) to enhance their capacity for self-management is audiovisual technology. Prior studies have demonstrated that digital platforms, mobile applications, and video-based interventions can improve patients' self-management abilities, knowledge, and quality of life (Iribarren et al., 2021).

The process of educating people or groups to improve their understanding and capacity to maintain health is known as health education (Notoatmodjo, 2012). Health education in the setting of chronic kidney disease (CKD) attempts to increase drug adherence, promote health behavior improvements, and assist patients in understanding their medical status. Effective education needs to be ongoing, organized, and patient-centered (Sajjadi et al., 2025).

Videos, animations, and multimedia are examples of visual and auditory media that are used concurrently in audiovisual education. Because it uses several senses, this approach has been shown to be more successful in enhancing comprehension (Mayer, 2009). According to research, self-efficacy, knowledge, and patient compliance throughout treatment can all be enhanced by audiovisual-based instruction (Li et al., 2026). Additionally, this approach can boost patients' willingness to study and lessen their worry (Firmanda & Wahyuningsih, 2025).

The aim of this study was to examine the effectiveness of audiovisual-based health education in improving self-management among patients with chronic kidney disease undergoing hemodialysis. Through a systematic literature review, the study synthesized current evidence to identify the impact of audiovisual educational interventions on patients' knowledge, treatment adherence, self-efficacy, and overall self-management outcomes.

METHOD

The literature review strategy is used in this study. To arrive at a conclusion, a selection of literature from different sources is analyzed. At this point, the PRISMA 2020 criteria are used to convey the findings of the literature search and selection process in an organized fashion. The websites Science Direct, Scopus, Pubmed, ProQuest, and Sage were among the worldwide journals on which the literature search was carried out. Keywords like self-management, CKD, hemodialysis, and audiovisual education were entered to conduct the literature search.

The PRISMA 2020 guidelines served as the basis for the article selection procedure. A total of 550 publications were found after a literature search was conducted using the ScienceDirect, Scopus, PubMed, ProQuest, and Sage databases. There were 430 items left for the screening process after 120 duplicates were eliminated.

Up to 300 publications were rejected for being unrelated to the research topic during the screening phase based on titles and abstracts. Additionally, 130 articles were evaluated for eligibility using full-text reading, and 124 articles were removed because they did not fit the inclusion criteria, which included not focusing on patients with diabetes mellitus who had chronic kidney failure, not using audiovisual education interventions, and not having self-management outcomes. As a result, six publications were used in this study that satisfied the requirements.

RESULT

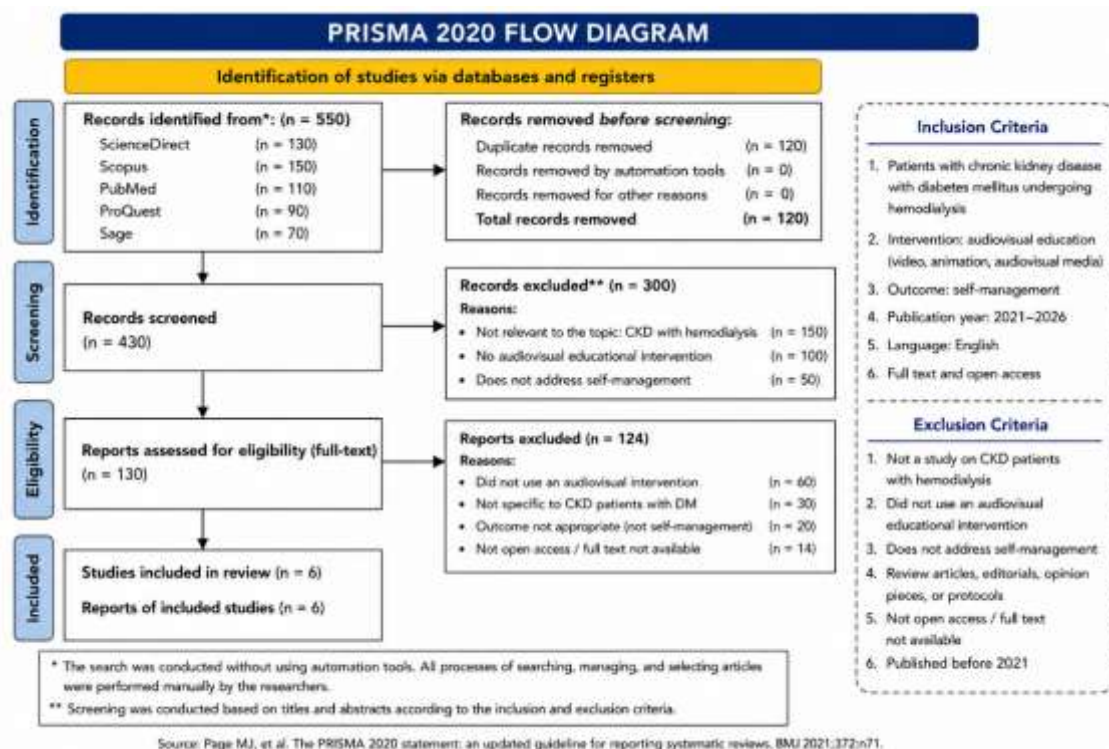


Table 1.
Summary of Selected Primary Articles for the Literature Review

Author/Year	Title	Journal/Method	Location	Population/Sample	Results
Sajjadi et al., 2024	The effect of individualized education on learning needs of patients undergoing hemodialysis	BMC Nephrology / RCT	Iran	HD patients (n=60; intervention=30, control=30)	Education significantly improved patient knowledge, therapy understanding, and self-management ability (p<0.05).
Sajjadi et al., 2025	Nurse-led individualized education on patient activation in hemodialysis	Renal Replacement Therapy / RCT	Iran	HD (n=70) patients	Significant improvements were observed in patient activation, treatment adherence, and patient involvement in self-management.
Firmanda & Wahyuningsih, 2025	Audiovisual-based health education in CKD patients	AHNJ / Quasi-experimental	Indonesia	CKD (n=40) patients	Audiovisual education reduced anxiety, improved disease understanding, and enhanced patient self-management.
Mailani et al., 2023	Self-management and related factors among CKD patients	Nurse Media Journal / Cross-sectional	Indonesia	HD (n=102) patients	Self-management was influenced by knowledge, family support, and education; patients receiving better education demonstrated higher self-management levels.
Alikari et al., 2022	The effect of an educational intervention on self-care in	International Journal of Environmental Research and	Greece	HD (n=84) patients	Education significantly improved self-care, treatment adherence, and self-management.

Author/Year	Title	Journal/Method	Location	Population/Sample	Results
	patients undergoing hemodialysis	Public Health / Quasi-experimental			
Li et al., 2026	Micro-video self-management program in hemodialysis	Journal of Pediatric Nursing	China	HD patients (n=80; intervention=40, control=40)	The video program significantly improved self-efficacy, treatment adherence, and quality of life compared with the control group.

DISCUSSION

Health education was the main intervention employed in the study, both directly by healthcare professionals and through the use of audiovisual materials including multimedia and movies. Patient self-management or self-care was the primary outcome examined in every study (Alikari et al., 2019; Sajjadi et al., 2024, 2025).

The Influence of Education on Self-Management of CKD Patients

The findings of the analysis show that health education significantly improves the self-management of hemodialysis patients with chronic kidney disease. Patients' knowledge and capacity to independently manage their condition can both be improved by individual education (Sajjadi et al., 2024). Structured educational interventions can also greatly enhance self-care behaviors, such as diet control and therapy adherence. Patients who receive comprehensive education are better equipped to comprehend their illness and make decisions about their own care (Alikari et al., 2019).

Effectiveness of Audiovisual Education

It has been demonstrated that audiovisual-based instruction is more successful than traditional approaches. Using audiovisual materials lowers anxiety levels while simultaneously enhancing patient comprehension (Firmanda & Wahyuningsih, 2025). This is due to the fact that knowledge may be presented in an engaging and understandable manner through audiovisual medium. Hemodialysis patients' self-efficacy and quality of life can be enhanced via video-based educational programs, or micro-videos. Patients' recall and comprehension of the material are strengthened by the visual and auditory cues offered by audiovisual media (Li et al., 2026).

The Role of Healthcare Workers in Education

Improving patient self-management is a major responsibility of healthcare professionals, particularly nurses. Patient activation, or the active participation of patients in their own health management, can be enhanced via customized nursing education. In addition to providing knowledge, nurses also serve as motivators and facilitators when it comes to helping patients improve their behavior. It has been demonstrated that patient-centered, ongoing education is more successful in enhancing self-management (Sajjadi et al., 2025). Patients receiving hemodialysis can improve their self-care, self-management, and self-efficacy with the help of technology-based educational interventions, whether through educational videos or mobile applications. These results provide credence to the employment of digital media as a teaching tool to improve patients with chronic renal disease's capacity for self-management (Şahan et al., 2023; Tashakor et al., 2023).

Factors That Affect Self-Management.

Knowledge, family support, and access to health information are some of the elements that affect CKD patients' ability to manage their condition on their own. Patients who are well-informed typically exhibit better self-management. Additionally, family support is crucial in assisting patients in adhering to their hemodialysis schedule, diet, and hydration restrictions as part of their therapy regimen (Mailani et al., 2023). As a result, education is targeted at families as a support system in addition to patients.

Relevance to CKD Patients with Diabetes Mellitus

The care of CKD patients with co-occurring diabetes mellitus is more complicated. They have to regulate blood sugar levels in addition to kidney illness. Patients can manage both illnesses at the same time with the use of health education (Keivan et al., 2023). Patients who receive effective education are more likely to understand the significance of blood sugar regulation, medication adherence, and adopting a healthy lifestyle.

Synthesis of Research Results

Based on the six articles that were examined, it can be said that health education—particularly audiovisual-based health education—contributes significantly to the improvement of hemodialysis patients' self-management of chronic renal failure. Education affects patients' attitudes and behaviors in controlling their illness in addition to increasing information (Alikari et al., 2019; Sajjadi et al., 2024, 2025). Because it can improve patients' comprehension and involvement, the use of audiovisual media has been shown to be more successful. The success of educational initiatives also depends on the involvement of healthcare professionals and family support (Mailani et al., 2023; Sajjadi et al., 2025).

Implications for Research

The study's findings suggest that one useful tactic for enhancing CKD patients' self-management is audiovisual-based teaching. Healthcare practitioners are therefore encouraged to provide instructional materials that are creative and simple for patients to comprehend. (Firmanda & Wahyuningsih, 2025; Li et al., 2026).

CONCLUSION

This study demonstrates that the quality of life and self-management of patients with chronic renal disease receiving hemodialysis may be enhanced by the use of audiovisual technology-based education. To assess long-term efficacy, impact on clinical outcomes, and patient satisfaction, more study is necessary.

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