

**Audiovisual-Based Health Education as a Therapeutic Modality for Managing Anxiety in CKD Patients Facing Fluid Intake Limitations****Giovanni Iga Firmanda<sup>1\*</sup>, Aries Wahyuningsih<sup>2</sup>**<sup>1</sup>S1 Nursing Study Program, Faculty of Health, Institut Ilmu Kesehatan Bhakti Wiyata Kediri, Indonesia<sup>2</sup>S1 Hospital Administration Study Program, STIKES RS Baptis, Kediri, Indonesia**Correspondent Author:**

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firmandagio@gmail.com**Keywords :**Audiovisual Health  
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Restriction.**Abstract**

Chronic Kidney Disease (CKD) patients undergoing hemodialysis often experience heightened levels of anxiety due to complex treatment regimens and strict fluid intake restrictions. This study aimed to evaluate the effectiveness of an audiovisual intervention in reducing anxiety levels among CKD patients. A pre-experimental one-group pretest-posttest design was employed, involving 60 CKD patients selected through purposive sampling. The intervention consisted of a five-minute audiovisual presentation combining fluid restriction education and relaxation techniques. The independent variable was the audiovisual intervention, while the dependent variable was the patients' anxiety levels. Anxiety was assessed using the standardized Generalized Anxiety Disorder-7 (GAD-7) questionnaire, administered both before and after the intervention. Data analysis was conducted using paired t-tests to compare mean anxiety scores, with a significance threshold set at  $p < 0,05$ . Prior to the intervention, the majority of participants (56.6%) experienced moderate anxiety, while 41,6% had mild anxiety, and 1.8% had severe anxiety. After the intervention, a notable shift occurred: 91,6% of patients reported mild anxiety, and only 8,4% experienced moderate anxiety, with no cases of severe anxiety. The average anxiety score significantly decreased from 11,03 to 7,57, resulting in a mean difference of 2,466 and a p-value of 0,000, indicating a statistically significant improvement. These findings suggest that audiovisual media are effective in reducing anxiety in hemodialysis patients by improving their understanding of fluid management and promoting relaxation. The engaging and accessible nature of the intervention empowered patients and helped alleviate emotional distress, supporting its use in clinical settings as a complementary therapeutic tool.

**INTRODUCTION**

Chronic Kidney Disease (CKD) is a progressive and irreversible decline in renal function, marked by the kidneys' inability to maintain metabolic homeostasis and fluid-electrolyte balance. The condition has become a pressing global health concern due to its rising prevalence and long-term consequences. CKD patients require continuous monitoring and treatment, particularly in the later stages, where renal replacement therapy becomes necessary. In Indonesia, data from the (Kemenkes RI, 2023) reported that over 713,783 individuals were diagnosed with CKD, and more than 2,850 were receiving routine hemodialysis therapy (Kusumawardani, 2021). Hemodialysis is considered a life-sustaining treatment but requires stringent adherence to clinical and lifestyle regulations. Among these, fluid restriction is one of the most critical yet challenging aspects for patients. Non-adherence to fluid restriction increases the risk of volume overload, hypertension, and cardiovascular events, ultimately worsening patient prognosis (Luitel et al., 2020; Mailani et al., 2021).

Although fluid control is physiologically essential, it imposes considerable psychological stress on patients. The necessity to restrict fluid intake can lead to a sense of deprivation and loss of autonomy, especially for patients accustomed to fewer dietary restrictions before treatment. These feelings are often accompanied by emotional disturbances such as frustration, anxiety, and helplessness. Multiple studies have documented a high prevalence of anxiety and depression among CKD patients undergoing

hemodialysis (Akpan Ekong Effiong et al., 2025; Khan et al., 2022; Ye et al., 2022). The repetitive and prolonged nature of hemodialysis—typically conducted three times per week for several hours—also contributes to psychological fatigue and reduced social interaction. These stressors collectively impair emotional well-being and may exacerbate mental health issues. If not addressed adequately, they can lead to poor engagement with treatment plans and diminished health outcomes.

Anxiety not only affects the psychological state of patients but also significantly impacts their ability to adhere to fluid and dietary restrictions. Patients who experience persistent anxiety may develop avoidance behaviors, including neglecting fluid limits or skipping dialysis sessions. These non-compliant behaviors can lead to the accumulation of toxins and fluids, resulting in adverse clinical consequences. Studies have consistently shown that patients with higher anxiety scores demonstrate lower treatment adherence and poorer quality of life (Deshpande et al., 2023). Therefore, addressing anxiety is not merely an adjunctive concern but a core component of effective CKD management. It is essential for healthcare providers to implement strategies that target psychological as well as physical aspects of the disease. By reducing anxiety, patients are more likely to participate actively in their care and follow recommended therapeutic protocols.

Patient education is a cornerstone of chronic disease management, particularly in enhancing self-care behaviors and therapeutic adherence. Conventional tools such as pamphlets, posters, and verbal instructions are widely used but often show limited impact, especially in patients with low health literacy. The static nature of printed materials and the passive delivery of information reduce patient engagement. Moreover, patients undergoing dialysis often face cognitive fatigue, making it difficult to absorb and retain written information during sessions. Research suggests that these methods are insufficient in modifying psychological states such as anxiety and fear (Weidmann et al., 2023). In clinical practice, these limitations highlight the urgent need for more interactive and adaptive educational interventions. Consequently, healthcare systems must explore innovative approaches that align with patient needs and learning preferences.

Advancements in digital technology have facilitated the emergence of audiovisual tools as effective educational alternatives in clinical settings, especially for chronic disease management. Videos and animations simplify complex medical information, enhance comprehension, and offer emotional support, making them particularly beneficial for patients with diverse literacy levels. In Chronic Kidney Disease (CKD) populations, such interventions have been linked to reduced anxiety, improved fluid management, and greater patient satisfaction (Deshpande et al., 2023; Manalu et al., 2021; Shor et al., 2023; Widyaningsih & Chandra, 2024). Unlike printed materials, audiovisual media can be accessed flexibly and promote sustained engagement through visual storytelling and testimonials. However, many existing studies are limited by methodological weaknesses and often overlook anxiety as a primary outcome. The objective of this study is to evaluate the effectiveness of audiovisual-based health education as a therapeutic modality in managing anxiety among patients with chronic kidney disease facing fluid intake restrictions.

## RESEARCH METHODS

This study employed a pre-experimental one group pre test post test design, conducted in December 2024 at the Hemodialysis Room of RSUD Gambiran, Kediri City. The research sample consisted of 60 Chronic Kidney Disease (CKD) patients undergoing hemodialysis who experienced mild to severe anxiety, selected using purposive sampling. The inclusion criteria patients undergoing hemodialysis, aged  $\geq 18$  years, experiencing mild to severe anxiety, and willing to participate in the study. Exclusion Criteria patients with severe mental disorders, medical conditions that limit their ability to follow the intervention,

or patients who do not consent to participate in the study. The intervention consisted of a 5-minute audiovisual media presentation containing education about the importance of fluid restriction and deep breathing relaxation techniques. Anxiety levels were measured using the GAD-7 questionnaire by Spitzer et al (2006) before and after the intervention. Data analysis was conducted using a paired sample t-test to examine the difference in patient anxiety levels before and after watching the video. The study was approved by the ethics committee [705/EP/FKES/XII/2024] and informed consent was obtained from all participant after a thorough explanation was provided regarding the study's purpose, procedures, potential risks, and benefits. Participants were informed through a clear and comprehensible audiovisual explanation, ensuring they understood their rights and the voluntary nature of their participation.

## RESULT

Table 1 shows the respondents' characteristics including gender, educational level, age, occupation, and health insurance. Table 1 shows the demographic characteristics of the respondents. The majority of respondents were female (66.6%), with the highest education level being Junior High School graduates (66.6%). The respondents' ages were predominantly between 36-45 years and 46-55 years, each accounting for 33.3%, and most of them were farmers (33.3%). The majority of respondents had BPJS health insurance (83.3%).

**Table 1. Characteristics of Respondents (n=60)**

Characteristics	Frequency	Percentage
Gender		
Male	40	66,6
Female	20	33,4
Education Level		
Elementary School	5	8,3
Junior High School	40	66,6
High School	5	8,3
Diploma/Bachelor's Degree	10	16,8
Age		
25-35 years	4	6,6
36-45 years	20	33,3
46-55 years	20	33,3
>55 years	16	26,8
Occupation		
Merchant	10	16,6
Farmer	20	33,3
Civil Servant	1	1,8
Housewife	20	33,3
Others	9	15
Health insurance		
Indonesian Health Insurance Program (BPJS)	50	83,3
General Health Insurance	7	11,6
Other Insurance	3	5,1

Table 2 shows before treatment, the majority of respondents experienced moderate anxiety (56.6%), followed by mild anxiety (41.6%), with only a small percentage experiencing severe anxiety (1.8%). After the intervention, a significant increase was observed in the number of respondents experiencing mild anxiety (91.6%), while there was a drastic reduction in those experiencing moderate anxiety (8.4%). Notably, no respondents

reported severe anxiety after the treatment, indicating a significant improvement in anxiety levels following the intervention.

**Table 2. Anxiety Category Before and After Treatment**

Anxiety Category	Pre-test		Post test	
	f	%	f	%
Mild (0-4)	25	41,6	55	91,6
Moderate (5-9)	34	56,6	5	8,4
Severe (15-21)	1	1,8	-	-
Total	60	100	60	100

**Table 3. Paired Sample t-test Measurement**

Pengukuran	Mean	Mean differences	Std. Deviation	<i>p-value</i>
Pre-test	11.03	2.466	2.89	0.000
Post-test	7.57		2.32	

Table 3 shows that the average anxiety score significantly decreased from 11.03 (pre-test) to 7.57 (post-test). The mean difference in scores was 2.466. The p-value of 0.000 indicates that this difference is statistically significant. This suggests that the reduction in anxiety scores is not due to chance, but rather a direct result of the intervention provided.

## DISCUSSION

Anxiety remains one of the most prevalent psychological issues among patients with Chronic Kidney Disease (CKD), particularly those undergoing regular hemodialysis (Mushtaque et al., 2024; Powathil & KR, 2023). Within this framework, audiovisual health education has emerged as a promising therapeutic modality to alleviate anxiety in these patients. The present study observed that prior to the intervention, a considerable proportion of respondents (56.6%) experienced moderate anxiety, reflecting the psychological burden of CKD management. This finding is consistent with (Akpan Ekong Effiong et al., 2025; Khan et al., 2022), who noted a high prevalence of anxiety and depression in CKD populations. Factors such as fluid restrictions, prolonged treatment sessions, and prognosis uncertainty are major contributors to psychological distress. Notably, only 1.8% of participants experienced severe anxiety, suggesting variability in individual coping capacities. These findings underscore the necessity of integrating non-pharmacological interventions into standard care.

Following the audiovisual intervention, a substantial reduction in anxiety levels was reported among the participants. A majority (91.6%) of patients indicated mild anxiety post-intervention, with only 8.4% continuing to experience moderate anxiety, and none reporting severe anxiety. This significant improvement demonstrates the capacity of audiovisual media to deliver health information in a clear, engaging, and easily comprehensible manner, thereby alleviating emotional distress. This outcome is in alignment with studies by (Danche et al., 2024; Deshpande et al., 2023), which found video-based education effective in reducing anxiety among patients with chronic conditions. Audiovisual interventions empower patients through better understanding and increased self-efficacy in managing their condition. Moreover, the use of multisensory inputs enhances knowledge retention and facilitates more effective learning. Therefore, this method proves highly relevant for application in CKD care.

The effectiveness of this approach is further supported by the inclusion of relaxation techniques within the audiovisual materials. Techniques such as deep breathing exercises and guided imagery have an immediate calming effect on physiological stress responses.

Previous findings by (Djuwardi et al., 2025; Mosleh et al., 2020) highlighted the benefit of combining mindfulness-based strategies with educational interventions to reduce anxiety. In CKD contexts, such techniques help patients manage anxiety related to fluid limitations, treatment side effects, and the stress of dialysis dependency. The integration of medical information and relaxation within a single audiovisual package offers a holistic and therapeutic approach. Addressing both informational and emotional needs of the patient simultaneously contributes to an improved overall quality of life. Consequently, the implementation of multimodal health education strategies should be prioritized in clinical practice. This approach is not only informative but also psychologically supportive.

The psychosocial acceptance of the audiovisual intervention by patients was remarkably positive. Most participants reported feeling calmer, more informed about their condition, and appreciated the respectful, non-patronizing approach of the content delivery. This aspect is crucial, as CKD patients often experience a sense of powerlessness due to lifestyle restrictions and dependency on dialysis. In line with (Danche et al., 2024), participatory digital health education was shown to effectively reduce preoperative anxiety. Mushtaque et al (2024) further emphasized that illness acceptance among end-stage renal disease patients is shaped by psychologically supportive interventions. In this study, the audiovisual content not only conveyed medical information but also fostered patients' self-confidence and hope. Thus, adopting a humanistic approach in health education is strongly recommended in nephrology nursing practices.

Beyond psychological benefits, this study also revealed that the audiovisual method improved patients' comprehension of the technical aspects of hemodialysis care. Participants reported better understanding of procedures, side effects, and the critical importance of adherence to dietary and treatment schedules. Such understanding is vital, as limited health literacy is associated with poorer clinical outcomes. Deshpande et al (2023) found that video-based educational interventions significantly enhance chronic illness patients' understanding and engagement with treatment. This is further supported by Yang et al (2021) who reported that health literacy is positively correlated with therapy adherence and blood pressure control. In this context, audiovisual tools serve as reinforcement of instructions provided by healthcare professionals. Hence, this strategy supports essential interactive communication between patients and care providers.

The success of this intervention heavily relies on the quality and contextual relevance of the audiovisual materials. Educational content should be tailored to patients' literacy levels, cultural backgrounds, and language preferences. In this study, the audiovisual materials were visually designed and contextually adapted to local needs. (Wong et al., 2022) found that structured patient education media can enhance the experience of coordinated, person-centered care. Active involvement of nurses and content development teams is essential in creating effective educational resources. Regular evaluations and patient feedback are necessary to maintain the relevance and quality of the intervention. This indicates the potential of audiovisual education to become a vital component in continuous CKD patient care. This is supported by Jeon et al (2023), who demonstrated the efficacy of audiovisual nursing information in reducing environmental stress and anxiety in surgical patients. Consequently, the involvement of nurses and content development teams is critical in the design process. Periodic evaluations and patient feedback are also essential to improve the effectiveness of future interventions. Therefore, audiovisual interventions can evolve as integral components of continuous patient care.

Overall, the findings of this study provide significant contributions to the advancement of evidence-based nursing practice. These results reaffirm the role of non-pharmacological interventions in supporting mental well-being among patients with chronic diseases like CKD. The results correspond with those by (Akpan Ekong Effiong et al., 2025;



Khan et al., 2022; Wong et al., 2022), who identified high rates of anxiety and depression in hemodialysis patients and highlighted the need for supportive educational interventions. Audiovisual education was effective in reducing anxiety, enhancing comprehension, and fostering patient trust in the healthcare system. The implementation of this method can be scaled across various healthcare settings, particularly where access to individual counseling services is limited. In the future, the development of interactive technologies such as mobile applications or virtual reality may offer even more dynamic educational alternatives (Widyaningsih & Chandra, 2024; Xing et al., 2023). Further longitudinal and experimental research is needed to assess the long-term impact on patients' quality of life. By combining technology, humanistic care, and health education principles, this intervention holds promise as a strategic innovation in CKD management.

## CONCLUSION

Audiovisual interventions significantly reduce anxiety in Chronic Kidney Disease (CKD) patients undergoing hemodialysis. Before the intervention, most patients had moderate anxiety (56.6%), but after the intervention, 91.6% experienced mild anxiety, with a significant decrease in moderate anxiety (8.4%) and no severe anxiety reported. The *p*-value of 0.000 indicates the change was statistically significant. These results suggest that audiovisual interventions are an effective tool for reducing anxiety in CKD patients, improving their emotional well-being during treatment.

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