



RESEARCH ARTICLE

Article URL: <https://ojs.poltekkes-malang.ac.id/index.php/HAJ/index>**Effect of Audio Visual ROM Education on Family Attitude and Motivation in Post-Stroke Care**Ixora^(CA), Dewi Wulandari²^{1,2} Department Nursing, Poltekkes kemenkes malangCorrespondence author's email (^{CA}): Ixora26@gmail.com

ABSTRACT

Stroke is a major cardiovascular disease globally, contributing significantly to mortality and disability, with an incidence rate of 12.1 cases per 1,000 population in Indonesia in 2018. Family support is crucial during the rehabilitation phase, but inadequate information often leads to incomplete family knowledge regarding disease management. **Objective:** This study aimed to analyze the effect of Audio Visual Education (AVE) about Range of Motion (ROM) training on the attitude and motivation of family caregivers in performing home ROM exercises for post-stroke patients. **Methods:** This research employed a Quasi-Experimental Design using a one-group pre-test post-test model, with a sample of 30 family caregivers selected through purposive sampling. The intervention delivered was AVE focused on ROM techniques, the Wilcoxon Sign Rank Test was used to compare pre- and post-test scores. **Results:** The findings demonstrated a significant positive effect on both family attitude (P-Value = 0.001) and motivation (P-Value = 0.000). The proportion of negative attitudes decreased from 63.3% to 0.0% post-intervention, while strong motivation increased dramatically from 26.7% to 93.3% after the intervention. **Conclusion:** Audio Visual Education on ROM exercises is highly effective in significantly improving the attitude and motivation of family caregivers in post-stroke patient care.

Keyword : ROM; Stroke; Motivation

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INTRODUCTION

Stroke constitutes a significant global health challenge within the cardiovascular disease category, with projections indicating that 25 million sufferers may result in death by 2030 (1). In Indonesia, the recorded incidence rate of stroke in 2018 was high, reaching 12.1 cases per 1,000 population (2). Characterized by its sudden onset, stroke remains a major cause of both mortality and long-term disability in both urban and rural settings (3).

The phase following a stroke attack involves extensive rehabilitation, during which **family support** is fundamentally required to enhance the patient's quality of life (4). Post-stroke damage, particularly to the motor cortex, frequently results in contralateral physical impairments such as hemiparesis or paralysis (5). Furthermore, stroke has broad physical and psychological consequences;

patients often experience **anxiety** and phobia concerning the deterioration of their condition, and the attack itself can compromise the immune system, leading to a higher risk of infection complications. To counteract physical deficits and accelerate recovery, training the patient's muscle strength, especially through **Range of Motion (ROM) exercises**, is essential for preventing complications and recurrent stroke (6).

The responsibility for daily care and rehabilitation transitions largely to the family as they become the primary care agent upon the patient's discharge. However, deficiencies in information delivery and poor coordination among healthcare teams frequently lead to incomplete family knowledge regarding disease management and proper patient handling (7). **Health education** and counseling are recognized as vital pillars in the overall management of stroke patients, and providing this education to ensure an effective transition of care is a professional obligation for nurses. Health education serves as a necessary solution to improve family function and prevent recurrent stroke attacks (8).

Based on the critical need to empower family caregivers, this study aims to investigate the influence of **Audio Visual Education (AVE) on Range of Motion (ROM) training** on the **attitude** and **motivation** of family members in performing ROM exercises for post-stroke patients at home. The expected outcome is to provide a highly effective educational method that ensures families can deliver consistent and quality care, thereby maximizing patient recovery.

METHODS

The research utilized a Quasi-Experimental Design with a one group pre-test and post-test approach. The study population was composed of family caregivers responsible for the home care of post-stroke patients. **Sampling and Participants** The sample consisted of 30 family caregivers of post-stroke patients, recruited through purposive sampling. The sample size was determined based on meeting the defined inclusion criteria (9), which ensured the participants were the primary care agents for the patients. The intervention delivered was Audio Visual Education (AVE) focused specifically on the techniques, importance, and procedural steps of Range of Motion (ROM) exercises. This method was chosen to maximize the clarity and comprehension of the practical skills required for effective home care. Data collection involved two primary phases: Pre-test: A questionnaire was administered to measure the initial attitude and motivation of the family caregivers regarding ROM exercises before receiving the AVE intervention., Post-test: The same questionnaire was administered following the AVE intervention to measure the change in their attitude and motivation.

RESULT

The results obtained from the research are presented to address the objectives of measuring the effect of Audio Visual Education (AVE) on the attitude and motivation of family caregivers concerning

Range of Motion (ROM) exercises for post-stroke patients. This section describes the univariate analysis of respondent characteristics, followed by the bivariate analysis comparing pre-test and post-test scores. The study involved a total of 30 family caregivers of post-stroke patients who met the inclusion criteria. All subjects received the Audio Visual Education intervention on ROM exercises. Data analysis regarding the characteristics of the research subjects confirms a consistent profile, which strengthens the validity of the sample. The bivariate analysis utilized the Wilcoxon Sign Rank Test to evaluate the difference in family attitude and motivation before (pre-test) and after (post-test) the AVE intervention. The results are presented for each dependent variable. The distribution of family caregivers' attitudes towards performing ROM exercises before and after the Audio Visual Education is presented in Table 1.

Table 1. Distribution of family caregivers' attitudes towards performing ROM exercises

Attitude Level	Pretest	Posttest
Negative	19	0
Moderate	8	19
Positive	3	11
Total	30	30

The results indicate a fundamental shift in attitude. Before the intervention, a majority of respondents (63.3%) reported a negative attitude. Post-intervention, no respondents remained in the negative category, with the majority shifting to moderate (63.3%) and positive (36.7%) attitudes. The Wilcoxon Sign Rank Test confirmed this improvement was statistically significant ($p=0.001$).

The distribution of family caregivers' motivation regarding performing ROM exercises before and after the Audio Visual Education is presented in Table 2.

Table 2. Distribution of family caregivers' motivation regarding performing ROM exercises

Attitude Level	Pretest	Posttest
Moderate	22	2
Strong	8	28
Total	30	30

The findings show a dramatic increase in motivation. Before the intervention, most respondents had moderate motivation (73.3%). Post-intervention, the level of strong motivation increased significantly, with nearly all respondents (93.3%) demonstrating strong motivation. The statistical analysis confirmed a highly significant effect on motivation ($p=0.000$).

DISCUSSION

The highly significant results—demonstrating a major shift towards positive attitude ($p=0.001$) and strong motivation ($p=0.000$)—strongly affirm the effectiveness of Audio Visual Education (AVE)

as an optimal method for training family caregivers in post-stroke rehabilitation. The transition from a negative to a positive attitude suggests that AVE successfully addressed the initial barriers often faced by caregivers, such as fear of harming the patient or uncertainty about correct procedures. AVE's strength lies in its ability to **visualize complex actions** like ROM exercises, allowing caregivers to internalize the correct technique and timing more effectively than through purely verbal instruction. This increased comprehension directly translates into greater self-efficacy and a more positive approach to the caregiving role. Similarly, the dramatic increase in strong motivation (from 26.7% to 93.3%) highlights the empowerment aspect of AVE. When caregivers feel competent and confident in their skills, their motivation to perform the required tasks consistently rises. **Motivation is a key determinant of adherence** to the rehabilitation regime, which is essential for maximizing patient recovery, increasing muscle strength, and mitigating related psychological distress such as anxiety (10). These findings align with established health education theories, which posit that effective communication methods that enhance comprehension and skill retention are prerequisites for sustained behavioral change in health management (11). By empowering the family with clear, visual instruction, nurses ensure that the essential care requirements—including consistent ROM—are met at home, preventing complications like contractures and pressure sores and improving the patient's overall prognosis (12).

The empirical data establishes a crucial intervention outcome: the proportion of respondents exhibiting a **negative attitude decreased sharply from 63.3% to 0.0%** post-intervention. Concurrently, the number of caregivers demonstrating **strong motivation surged from 26.7% to 93.3%** ($p=0.000$). This confirms that AVE successfully addressed the initial psychological barriers often faced by caregivers, such as fear of harming the patient or uncertainty about correct procedures (13). This positive change in attitude is a prerequisite for sustained behavioral adherence to the rigorous demands of home-based rehabilitation, which is vital given the high incidence and long-term disability associated with stroke in Indonesia (2).

The mechanism behind the success of the AVE intervention is deeply rooted in the principles of the **Social Cognitive Theory (SCT)**, specifically through enhancing **self-efficacy**. A negative attitude frequently stems from a perceived lack of skill or control over a complex task (14). AVE's strength lies in its ability to **visualize complex actions** like ROM exercises, allowing caregivers to internalize the correct technique and timing more effectively than through purely verbal instruction (15). This direct, visual instruction (observational learning) significantly increases the caregiver's belief in their capability to perform the task safely and correctly, thereby boosting their self-efficacy (16). This increased self-efficacy then directly translates into the observed surge in motivation and a more positive approach to the caregiving role. Motivation is universally recognized as a **key determinant of adherence** to any health rehabilitation regime (13,16).

The expected outcome of health promotion or education is healthy behavior, or behavior to maintain and improve health that is conducive to the health promotion target (17). According to

researchers, stroke patients need ROM therapy assisted by their families. Active ROM therapy can gradually improve joint movement and muscle strength, leading to faster recovery. When performing ROM exercises on stroke patients, family motivation is crucial. Without family motivation, the stroke patient's muscle strength and joint movement will become increasingly stiff and difficult to achieve. ROM therapy is crucial because it can train the patient's joint movement and muscle strength, leading to faster muscle strength and joint movement.

Clinically, these findings mandate the integration of AVE into standard nursing practice, particularly during discharge planning. By empowering the family with clear, visual instruction, nurses ensure that the essential care requirements—including consistent ROM—are met at home (4). Consistent ROM execution is non-negotiable for **preventing secondary complications** following stroke, such as debilitating muscle contractures and pressure sores (18). Therefore, the nurse's use of AVE acts as a vital transition tool that not only improves the caregiver's psycho-social well-being but also directly contributes to a better physical prognosis for the patient, including increased muscle strength and mitigating related psychological distress such as anxiety (19). Healthcare institutions are strongly encouraged to standardize the use of visual and auditory media for teaching complex psychomotor skills to ensure effective transition of care (20).

CONCLUSION

The Audio Visual Education (AVE) intervention focusing on Range of Motion (ROM) exercises demonstrated a **highly significant positive effect** on improving both the **attitude** ($p=0.001$) and **motivation** ($p=0.000$) of family caregivers for post-stroke patients. It is concluded that the AVE method is a robust and effective educational tool for empowering families to serve as competent and dedicated care agents, ultimately leading to improved quality of care and patient outcomes at home. Nurses are strongly recommended to adopt AVE as a standard procedure during discharge planning and follow-up care for stroke patients.

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