



RESEARCH ARTICLE

Article URL: <https://ojs.poltekkes-malang.ac.id/index.php/HAJ/index>**The Effectiveness of Early Mobilization Education Using Video Media on Post-Laparotomy Patient Recovery****Mita Amalia Karunia Akbar¹, Sri Mugianti², Wiwin Martiningsih³, Maria Diah Ciptaning Tyas⁴**^{1,2,3,4} Bachelor of Applied Nursing Malang, Ministry of Health Polytechnic of Health MalangCorresponding author (CA) email address: sri_mugianti@poltekkes-malang.ac.id

ABSTRACT

Post-laparotomy patients generally experience pain, decreased mobility, impaired intestinal peristalsis, and an increased risk of complications. Therefore, early mobilization is an important step to accelerate recovery. However, its implementation is often suboptimal due to limited patient education. Video media can provide clear and easy-to-understand explanations. This study aimed to determine the effectiveness of early mobilization education using video media on the recovery of post-laparotomy patients. The study used a quasi-experimental approach with a posttest-only control group design. The population consisted of 79 patients, with 40 respondents selected through simple random sampling. The sample included 20 respondents in the control group and 20 in the intervention group. Bivariate analysis was performed using the Mann-Whitney test. The results showed that recovery in the control group was slower than in the intervention group. The intervention group demonstrated better mobilization ability ($p = 0.000$) and faster reduction in pain intensity, particularly at 12 hours ($p = 0.009$) and 24 hours postoperatively ($p = 0.021$). However, intestinal peristalsis recovery was not significantly different between groups ($p = 0.127$). Thus, early mobilization education using video media was effective in accelerating recovery among post-laparotomy patients. Further research with longer observation periods and more comprehensive implementation is recommended.

Keywords: Early mobilization; video media; recovery; laparotomy; patient education

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INTRODUCTION

Laparotomy is an exploratory surgical procedure performed by opening the abdominal lining or using an incision technique in the abdominal area to treat various disorders of the abdominal cavity[1]. According to data from the World Health Organization (WHO), the number of patients undergoing laparotomy worldwide shows an annual increase of around 15%. In 2020, 80 million patients underwent this procedure in various hospitals, while in 2021, that number increased to 98 million. In Indonesia, laparotomy is the type of surgery with the highest number of cases compared to other surgical procedures. In 2021, the total number of operations reached 1.7 million cases, with around 37% of them

being laparotomies. In a preliminary study, there were 79 laparotomy cases at Kanjuruhan Regional Hospital, Malang, from January to June. Post-laparotomy surgery, patients experience a complex recovery phase, including severe pain, impaired mobility, decreased gastrointestinal function, and the risk of complications such as paralytic ileus and surgical wound infection[2]. Interventions that can be performed during the recovery phase include early mobilization, which has been shown to reduce pain intensity, accelerate wound healing, prevent complications, and accelerate the recovery of intestinal peristalsis after laparotomy[3]. The success rate of early mobilization is highly dependent on the patient's understanding and readiness, so providing education is very important so that patients can carry out early mobilization independently with the help of their family.

In nursing practice, patient education is a key foundation for increasing patient engagement in self-care, including early mobilization programs. The education model still frequently used in various healthcare facilities tends to be passive and verbal, which is less effective in improving patient understanding and compliance. Postoperative patients are generally weak, in pain, and sometimes confused, making them less able to absorb information optimally if only brief explanations are provided without the support of visual media. Innovation is needed in educational delivery methods that are more engaging, interactive, and accessible repeatedly by patients and families. Videos allow for easy-to-understand information delivery and can more clearly illustrate mobilization steps [4]. Previous research has shown that audiovisual media has proven to be more effective than conventional methods in increasing patient understanding and participation in health actions [5].

The implementation of early mobilization education in various healthcare facilities remains suboptimal. Many post-operative patients, particularly those undergoing laparotomy, still experience delayed recovery after laparotomy. Early mobilization is often provided only through verbal instructions without direct support, leaving patients passive and less motivated to move [6]. Based on a preliminary study conducted at Kanjuruhan Regional Hospital, early mobilization treatment remains suboptimal due to a shortage of medical personnel and a surge in post-laparotomy patients. Patients are only provided with visual education about early mobilization without easy-to-understand media. Most patients are apprehensive about early mobilization, believing it will increase pain in the surgical wound.

Approaches to address this issue need to be applicable and sustainable, one of which is providing video-based education to families and patients by providing examples of several structured early mobilization movements to patients. Providing education through appropriate media is expected to help patients understand that early mobilization is beneficial for accelerating recovery. Based on the importance of early mobilization for post-laparotomy patient recovery and the great potential of video media as an educational tool, this study was conducted to assess the effectiveness of early mobilization education using video media in the recovery of post-laparotomy patients at Kanjuruhan Regional Hospital, Malang. This study is expected to provide scientific evidence regarding the benefits of

audiovisual interventions in improving patient understanding and participation in the post-operative mobilization process.

METHOD

This study used a quantitative method with a quasi-experimental design comparing two groups, namely the control group and the experimental group. The study population was post-laparotomy patients at Kanjuruhan Regional Hospital, Malang during the period of September–November 2025. A sample of 40 patients who met the inclusion criteria were divided into 20 control groups and 20 experimental groups, using a simple random sampling technique. The independent variable was early mobilization education using video media, while the dependent variable was patient recovery after laparotomy. The intervention was carried out by providing mobilization education using video media accompanied by examples of early mobilization movements for 10 minutes to patients undergoing laparotomy surgery. Data collection was carried out through direct observation of post-laparotomy patients using an observation sheet. The research instruments included standard operating procedures for early mobilization and a pain intensity measurement scale with a numeric rating scale (NRS). The numeric rating scale as a pain intensity measurement tool with a validity b value generally above $r = 0.70$. The NRS has high reliability, with a Cronbach's alpha value >0.80 [7]. The intestinal peristalsis assessment in the observation sheet includes the frequency of intestinal peristalsis and the time to first flatus. This study has passed the ethical feasibility test at Kanjuruhan Regional Hospital on September 4, 2025, under the number 072.1/EA.KEPK-046/35.07.302.101/2025.

RESULTS

Univariate Analysis

Descriptive Analysis of Respondents' Age, Gender, and Educational History

Table 1 Age, Gender, and Educational History of Respondents

Characteristics	Category	Frequency (n)	Percentage (%)
Age	15-25	6	15%
	26-45	10	25%
	46-65	18	45%
	66-85	6	15%
Gender	Man	19	47.5%
	Woman	21	52.5%
Educational group	Education using video	20	50%
	Education without video	20	50%
Total		40	100%

Based on the frequency distribution data table, it can be concluded that the majority of respondents are in the 46–65 years age range (45%) of the total sample. Respondent gender shows that the majority are female (52.5%).

Descriptive Analysis of Dependent Variables in Intervention and Control Groups

Table 2 Descriptive Analysis of Dependent Variables in the Intervention and Control Groups

Variables	Group	Means	Average difference	Min	Maximum
Early mobilization ability	Intervention	12.90	0.65	12	15
	Control	13.60		12	16
Pain intensity 6 hours post-operatively	Intervention	8:00 AM	0.35	7	9
	Control	8.35		7	9
Pain intensity 12 hours post-operatively	Intervention	5.30	0.30	4	6
	Control	6.00		5	7
Pain intensity 24 hours post-operatively	Intervention	3.05	0.60	2	4
	Control	3.65		3	5
Intestinal Peristalsis	Intervention	4.50	0.50	3	6
	Control	5.00		4	6

Based on the table above, there are differences in the recovery outcomes of post-laparotomy patients between the intervention and control groups in terms of early mobilization ability, pain intensity, and intestinal peristalsis recovery. In terms of early mobilization ability, the intervention group showed better results than the control group. The average early mobilization score in the intervention group was 12.90 with a range of 12–15, while in the control group it was 13.60 with a range of 12–16. The average difference of 0.65 indicates that patients in the intervention group had better early mobilization ability after being educated using video media.

In terms of pain intensity, the intervention group also showed a faster reduction in pain compared to the control group. Six hours after surgery, the average pain intensity in the intervention group was 8.00, lower than the 8.35 in the control group. At 12 hours postoperatively, the average pain intensity in the intervention group decreased to 5.30, while in the control group it was 6.00. Furthermore, at 24 hours postoperatively, the average pain intensity in the intervention group was 3.05, lower than the 3.65 in the control group. These results indicate that the intervention group experienced a faster and more consistent reduction in pain intensity throughout the observation period.

For the intestinal peristalsis recovery indicator, the intervention group had a mean recovery time of 4.50, while the control group had a mean difference of 5.00, with a mean difference of 0.50. The lower mean value in the intervention group indicates that intestinal peristalsis recovery tends to occur more quickly than in the control group. Overall, these results indicate that early mobilization education using video media tends to provide better results in terms of early mobilization ability, pain reduction, and accelerated intestinal peristalsis recovery in post-laparotomy patients.

Bivariate Analysis

Normality Test

Table 3 Normality Test in the Intervention Group and Control Group

Indicator	History of Early Mobilization Education Using Video Media	Shapiro-Wilk		
		Statistics	df	Signature
Mobilization ability questionnaire	No	0.856	20	0.007
	Yes	0.808	20	0.001
Intestinal peristalsis recovery questionnaire	No	0.813	20	0.001
	Yes	0.830	20	0.002
Pain intensity (6 hours)	No	0.774	20	0,000
	Yes	0.813	20	0.001
Pain intensity (12 hours)	No	0.813	20	0.001
	Yes	0.780	20	0,000
Pain intensity (24 hours)	No	0.765	20	0,000
	Yes	0.807	20	0.001

The Shapiro–Wilk normality test results showed that all study variables in both groups had a non-normal distribution ($p < 0.05$). This finding is consistent with the variables of mobilization ability, restoration of intestinal peristalsis, and reduction in pain intensity. The non-normal distribution of the data prevented comparative analysis between groups using the parametric independent t-test. Subsequent analysis used the non-parametric Mann–Whitney U-test, which is more appropriate for comparing two independent groups with non-normal data distributions.

The Effectiveness of Early Mobilization Education Using Video Media in Post-Laparotomy Patient Recovery

Effectiveness of Education Using Video Media in Patient Recovery After Laparotomy

Table 4. Effectiveness of Education Using Video Media on Patient Recovery After Laparotomy

Characteristics	N	Means	Number of Ratings	p-value
Experimental group mobilization capabilities	20	12.90	276.00	0.000
Control group mobilization capabilities	20	13.60	544.00	
Pain intensity at 6 hours post-operatively in the experimental group	20	8.00	361.00	0.149
Pain intensity at 6 hours post-operatively in the control group	20	8.35	459.00	
Pain intensity at 12 hours post-operatively in the experimental group	20	5.30	320.00	0.009
Pain intensity at 12 hours post-operatively in the control group	20	6.00	500.00	
Pain intensity at 24 hours post-operatively in the experimental group	20	3.05	332.50	0.021
Pain intensity at 24 hours post-operatively in the control group	20	3.65	487.50	
Restoration of intestinal peristalsis in the experimental group	20	4.50	356.00	0.127
Restoration of intestinal peristalsis in the control group	20	5.00	464.00	

Based on the table above, the mobilization ability indicator shows that the control group had an average score of 13.60, while the experimental group had an average score of 12.90. The Mann–Whitney test results produced a p value of 0.000 ($p < 0.05$), which confirmed a significant difference between the two groups. These findings indicate that education through animated video media contributes to improving early mobilization abilities, both in readiness to move, implementation of early mobilization activities, and the level of independence of movement after laparotomy.

In terms of pain intensity, no significant difference was found at 6 hours postoperatively ($p = 0.149$), but significant differences emerged at 12 hours ($p = 0.009$) and 24 hours ($p = 0.021$), with the

experimental group showing greater pain reduction compared to the control group. This confirms the effectiveness of the video-based educational intervention in accelerating pain reduction after the initial recovery phase. Meanwhile, in terms of intestinal peristalsis recovery, the mean score for the control group was 5.00 and the experimental group 4.50, with a p-value of 0.127 ($p > 0.05$), indicating no significant difference. The process of bowel function recovery was relatively similar in both groups, indicating that additional interventions did not significantly impact peristalsis recovery.

DISCUSSION

Recovery of post-laparotomy patients in the group given early mobilization education using video media.

Early mobilization is an intervention that plays a role in accelerating the physiological recovery of postoperative patients by increasing tissue perfusion, muscle tone, and stimulating gastrointestinal motility[8]. The use of video media in education can increase patient understanding because it presents information through visual and auditory channels simultaneously, making it easier to understand and remember.[9]The combination of verbal and visual channels allows patients not only to receive verbal explanations but also to obtain a visual representation of the information or procedure to be performed. In multimedia learning theory, verbal and visual information are processed through different channels with limited working capacity, so that the appropriate organization of both forms of information can support the process of understanding and integrating information[10]. Presenting information through visual formats can also help improve knowledge retention and produce a more efficient cognitive load than delivering information textually alone[11].This mechanism is relevant in mobilization education because it provides patients with a more concrete understanding of the steps and movements to be performed, making it easier to translate the information into action[12].Research findings in surgical patients also indicate that video-based education can benefit postoperative recovery outcomes, including mobilization and functional recovery. Therefore, using video as an educational medium has the potential to support patients' ability to understand and correctly implement mobilization procedures[13].

The results showed that the group receiving video education had better mobilization skills and pain reduction compared to the group not receiving video education. Conversely, there was no significant difference in the recovery of intestinal peristalsis, although the experimental group tended to recover more quickly. These differences in response indicate that video education has a more direct impact on behavioral and motor outcomes than on physiological outcomes. Mobilization skills can respond directly to education because their success is influenced by the patient's understanding of the procedure and their ability to apply instructions. Recovery of intestinal peristalsis is a more complex physiological process and is also influenced by postoperative conditions, the body's response, and other clinical factors[14]. Thus, the advantage of video media lies in its ability to bridge information with practical actions, so that patients are better prepared and able to carry out early mobilization as part of the post-laparotomy recovery process[9].

Patient education through audiovisual and video media contributes to improved patient understanding, compliance with healthcare provider instructions, and accelerated post-operative recovery. Structured education helps patients better prepare for post-surgical recovery programs[13]. These results are supported by other research which explains that video media is an effective educational tool for increasing changes in health behavior because it can improve patient understanding, information retention, and compliance with instructions given[15]. This is also supported by research confirming that providing clear information through educational media is a key component of patient engagement in the perioperative phase. Patients with better understanding tend to be more active in following healthcare providers' instructions and participating in the postoperative recovery process[16]. Therefore, video-based education not only serves as a means of conveying information but also supports active patient involvement in properly implementing mobilization instructions during the postoperative recovery process.

Recovery of post-laparotomy patients in the group given education without video media.

The recovery of post-laparotomy patients in the group given education without video media shows that providing information conventionally can still support the recovery process, even though the delivery of the material is not accompanied by audiovisual demonstrations[17]. Education enables patients to obtain information about treatment procedures, early mobilization, pain management, and the importance of following healthcare providers' instructions. This understanding can improve patient readiness and engagement in actions that support postoperative recovery. Preoperative education is known to help patients understand surgical procedures, pain management strategies, and the importance of following healthcare providers' instructions, thus supporting postoperative pain management[15].

In the group without video media, early mobilization implementation depended on the patient's ability to understand and remember the explanations given by the healthcare provider. This differs from video-based education, which integrates visual and auditory elements to improve patient understanding, information retention, and compliance with instructions[18]. Education without audiovisual media relies more on verbal communication and the patient's ability to receive and apply information. Proper mobilization can support postoperative recovery by reducing pain and lowering the risk of complications[19].

The recovery of intestinal peristaltic function in the group given education without video media was not only influenced by patient education and mobilization. Gastrointestinal function after laparotomy is influenced by various factors, including the type and extent of surgery, anesthetic technique, opioid use, the patient's clinical condition, and mobilization protocol[20]. Thus, changes in patient recovery in the non-video education group were the result of an interaction between patient understanding of the education, adherence to mobilization, and physiological and clinical factors during the postoperative period. Non-video education still plays a role in providing knowledge and improving patient readiness, but the limited visual demonstration may make the application of mobilization skills more dependent on the patient's understanding and ability to follow the instructions given.

The results of the study showed that education without video media was less than optimal in supporting the patient recovery process after laparotomy, especially in improving mobilization ability and reducing pain intensity.

CONCLUSION

The study results showed that early mobilization education using video media was effective in accelerating the recovery of post-laparotomy patients at Kanjuruhan Regional Hospital. Prior to the intervention, most patients were afraid to move due to concerns about increased pain or surgical wound complications. After receiving visual and easy-to-understand video education on mobilization steps, patients became more confident, motivated, and willing to perform early mobilization as recommended.

The intervention group receiving video education demonstrated better mobilization skills, lower pain intensity, and faster recovery compared to the control group receiving only verbal education. Video media has been shown to be more effective because it delivers information in an audio-visual format, is easy to understand, can be replayed, and helps patients imitate movements correctly. Therefore, early mobilization education using video media is an effective and efficient method to support patient recovery after laparotomy.

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