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THE EFFECT OF ANIMATED VIDEOS AS A MEDIUM FOR REDUCING PRE-OPERATIVE ANXIETY WITH GENERAL ANESTHESIA

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ABSTRACT

Background: Preoperative anxiety is a common emotional response in patients undergoing surgical procedures, including laparotomy with general anaesthesia. Effective preoperative education can be one strategy to reduce anxiety. Animated videos about the anaesthesia procedure can improve patients' understanding and reduce their anxiety about medical procedures. This study aimed to determine the effect of animated videos as an educational medium in reducing preoperative anxiety in laparotomy with general anaesthesia.
Methods: This study used a quasi-experimental design with a pre-test and post-test approach with a control group. The sample consisted of 30 patients scheduled for laparotomy at PKU Muhammadiyah Gamping Hospital, divided into 2 groups. Anxiety was measured using the Amsterdam Preoperative Anxiety and Information Scale (APAIS). Data was analyzed using the Mann-Whitney U Test.
Results: This study shows that in the intervention group, the majority of respondents before watching the animated video had moderate anxiety levels, with 8 respondents (53.3%). After being given the animated video, the majority of respondents showed mild anxiety levels, with 6 respondents (40.0%). In the control group, the majority of respondents had moderate anxiety levels, with 8 respondents (53.3%). After being given nursing care from the hospital without being given the animated video, the majority of respondents showed mild anxiety levels, with 9 respondents (60.0%). Data analysis showed a significant decrease in anxiety scores in the intervention group compared to the control group ($p < 0.05$).
Conclusion: The use of animated educational media is recommended as part of standard preoperative preparation in hospitals.
Keywords: animated video, anxiety, general anaesthesia, laparotomy

INTRODUCTION

Surgery is any invasive procedure performed to open up a part of the body and can alter the physiology of the body and other organs. The number of patients who underwent surgery in 2019 reached 148 million, while 1.2 million people underwent surgery in Indonesia in the same year (Ministry of Health of the Republic of Indonesia, 2021). Laparotomy is a major surgical procedure that requires general anaesthesia.

General anaesthesia (GA) is commonly used in various medium to major surgical procedures, such as laparotomy. Preoperative anxiety, or anxiety before surgery, is usually caused by fear and anxiety associated with general anaesthesia. Patients feel more anxious because this procedure carries a fairly high risk.

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Perioperative anxiety is defined as an absurd and uncomfortable feeling (Syafira et al., 2022). The causes are often unclear and unknown to people, but it is known that it causes the body to experience unwanted haemodynamic reactions as a result of sympathetic, parasympathetic, and endocrine stimulation (Daba et al., 2024). Everyone can experience anxiety, whether acute or chronic.

According to the World Health Organisation (WHO), 2019, 60 to 90% of patients experience anxiety before surgery, and there are 534 million people who experience it (WHO, 2019). Anxiety rates in Indonesia continue to rise. The prevalence of anxiety in Indonesia reaches 11.6% of the adult population, and the prevalence of anxiety in preoperative patients is around 75–90% (Kemenkes RI, 2020).

Anxiety can impact perioperative anaesthesia management and overall surgical outcomes by increasing anaesthesia requirements, delayed awakening, haemodynamic issues, post-operative pain, longer wound healing times, immune system dysfunction, and increased infection risk. (Islamiyah et al., 2024). As a result, interventions to reduce preoperative anxiety have become an important component of comprehensive perioperative management (Abate et al., 2020).

One non-pharmacological method used to reduce anxiety is audio-visual media, such as animated videos for pre-operative patients. In general, short informational videos lasting 4–12 minutes can effectively reduce pre-operative anxiety in adult patients. The effects peak immediately after viewing the video and persist until close to the procedure time (several hours). This method was used to relieve stress and anxiety by diverting the patient's attention to other things. Pleasant sensory stimuli trigger the release of endorphins, which can stop stimuli that cause anxiety. As a result, fewer anxiety-inducing stimuli are transmitted to the brain. (Malinti & Sulistiowati, 2025)

As a health education medium, animated video media can provide information that is easier for patients to understand. According to Fauziah (2023), knowledge is received and captured through the five senses based on the principles inherent in every human being. The more senses that are used, the clearer the understanding or knowledge that is obtained (Berliana Sinaga, Rezka Nurvinanda, 2024).

Based on interviews with patients undergoing spinal anaesthesia, 5 out of 10 patients experienced severe anxiety, while 5 others experienced moderate anxiety. Therefore, the researchers were interested in examining the effect of animated spinal anaesthesia video education on preoperative patient anxiety at PKU Muhammadiyah Gamping Hospital.

RESEARCH METHOD

This study was conducted with two measurements. The sampling technique used in this study was accidental sampling. The inclusion criteria were: a) Patients aged 17–60 years old, and b) Patients with full consciousness before surgery. The study was conducted at PKU Muhammadiyah Gamping Hospital. The research procedure involved administering a pre-test questionnaire to the respondents before the study, followed by a 3–4-minute intervention where patients watched an animated video. For the post-test, the respondents were given the same questionnaire. The measurement method used the Amsterdam Preoperative Anxiety and Information Scale (APAIS), which is commonly used to assess patients' anxiety levels before surgery, particularly anxiety related to anaesthesia and

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surgery, as well as patients' information needs. Data processing involved editing, coding, data entry, and data cleaning. Statistical analysis was performed using SPSS software. The statistical test used in this study is the Mann-Whitney U Test. This research has been declared to have passed the ethics approval from the Research Ethics Commission of PKU Muhammadiyah Gamping Hospital with No. 215/KEP-PKU/VII/2025.

RESULTS

Based on Table 1, in the intervention group, the majority of respondents were aged 23–45 years old (5 respondents, 33.3%), female (9 respondents, 60.0%), and had a senior high school education (6 respondents, 40.0%), 6 respondents (40.0%) were self-employed. While in the control group, the majority of respondents were aged 23–45 years old (5 respondents, 33.3%), female (10 respondents, 66.7%), and had a senior high school education (5 respondents, 33.3%); 5 respondents (33.3%) were civil servants.

Table 1. Respondents Characteristics

Respondents Characteristics	Intervention group (N=15)		Control group (N=15)	
	f	(%)	f	(%)
Age				
17 – 25	2	13.3	2	13.3
26 – 35	4	26.6	3	20.0
36 – 45	5	33.3	5	33.3
46 – 55	2	13.3	2	13.3
56 – 60	2	13.3	3	13.3
Sex				
Male	6	40.0	5	33.3
Female	9	60.0	10	66.7
Education				
Uneducated	0	0.0	4	26.7
Elementary School	2	13.3	2	13.3
Junior High School	4	26.7	2	13.3
Senior High School	6	40.0	5	33.3
Bachelor	3	20.0	2	13.3
Occupation				
Unemployed	2	13.3	2	13.3
Housewife	3	20.0	3	20.0
Civil Servant	2	13.3	5	33.3
Private Sector	6	40.0	2	13.3
Entrepreneur	2	13.3	3	20.0

Table 2 shows that in the intervention group, the majority of respondents before watching the animated video had moderate anxiety levels, with 8 respondents (53.3%). After being given the animated video, the majority of respondents showed mild anxiety levels, with 6 respondents (40.0%). In the control group, the majority of respondents had moderate anxiety levels, with 8 respondents (53.3%). After being given nursing care from the hospital

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without being given the animated video, the majority of respondents showed mild anxiety levels, with 9 respondents (60.0%).

Table 2. Preoperative Anxiety Levels of Patients in the intervention group and control group

Category	Intervention				Control			
	Pretest		Posttest		Pretest		Postest	
	f	%	f	%	f	(%)	f	(%)
Not anxious	0	0.0	3	0.0	0	0.0	0	0.0
Mild anxiety	3	20.0	6	40.0	3	20.0	3	20.0
Moderate anxiety	8	53.3	5	33.3	8	53.3	9	60.0
Severe anxiety	4	26.7	1	6.7	4	26.7	3	20.0
Panic	0	0.0	0	0.0	0	0.0	0	0.0
Total	**15**	**100**	**15**	**100**	**15**	**100**	**15**	**100**

Table 3 above shows the results of the difference test using the Mann-Whitney U Test, with an Asymp. Sig. (2-tailed) Result of 0.000. The Mann-Whitney U Test results took into account the p-value, which was found to be < 0.05. It can therefore be concluded that there is a significant difference between the levels of knowledge

Table 3. The Effect of Animated Videos as a Medium for Reducing Preoperative Anxiety in Laparotomy with General Anaesthesia.

Category	N	Mean Ranks	Sum of Ranks	Asymp sig
Intervention group	15	15.30	306,00	0,000
Control group	15	25.70	514,00	
Total	**30**			

Table 3 above shows the results of the difference test using the Mann-Whitney U Test, with an Asymp. Sig. (2-tailed) Result of 0.000. The Mann-Whitney U Test results took into account the p-value, which was found to be < 0.05. It can therefore be concluded that there is a significant difference between the levels of knowledge

DISCUSSION

This study is a type of quantitative research with a quasi-experimental design, with a pre-test and post-test approach, with a control group. Based on the research results presented above, the following discussion was carried out. Preoperative anxiety is a common emotional response in patients undergoing surgical procedures, including laparotomy with general anaesthesia. This anxiety can have a negative impact on the patient's physiological condition and the postoperative recovery process (Gökçek & Kaydu, 2020).

Pre-operative anxiety can occur due to uncertainties that will be experienced in the operating room, such as: for example, concerns that the patient's body will change, fear of experiencing severe pain, looking bad, or not functioning normally, unfamiliar procedures or interventions, threats to life safety due to surgical procedures, fear that the patient will not regain consciousness after surgery, the presence of disabilities or surgical failures that cause concern for their family, and negative thoughts about the patient's condition after surgery (Arif et al., 2022). Factors influencing anxiety in pre-operative laparotomy patients

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include education, age, gender, and occupation (Fitriani et al., 2023). Based on the results of a study conducted on patients who were about to undergo laparotomy at Muhammadiyah Gamping Hospital before watching an animated video intervention, the level of anxiety shows that in the intervention group, the majority of respondents before watching the animated video had moderate anxiety levels, with 8 respondents (53.3%). In the control group, the majority of respondents before watching the animated video had moderate anxiety levels, with 8 respondents (53.3%).

The results of the study indicated that 12 respondents (40%) had a high school education. This study was in line with research conducted by Nofindasari, who stated that education is a human effort to determine and develop their physical and spiritual potential following the principles that exist in their society and culture. One of the easiest ways to obtain and receive information is through education. The higher a person's level of education, the easier it is for them to accept and adapt to their current circumstances (Nofindasari, 2022). Work factors also influence a person's anxiety level. This study showed that of the 30 respondents, 12 (40.0%) were self-employed. Work provides a lot of direct experience in problem-solving and better skills in using constructive coping, which indirectly helps reduce anxiety levels. Anxiety levels are correlated with work; this is because anxiety levels are positively correlated with medical costs. Respondents' work can impact their anxiety in their daily lives as patients undergoing laparotomy surgery. The results of this study also showed that most respondents in the intervention group were female. This is in line with the research by Nisaa et al. (2020) that women's lives, which are dominated by feelings, cause an increase in serotonin levels, which will stimulate brain activity.

Based on the results of a study conducted on patients who were about to undergo laparotomy at Muhammadiyah Gamping Hospital after watching an animated video intervention, the results showed that in the intervention group, After being given the animated video, the majority of respondents showed mild anxiety levels, with 6 respondents (40.0%). In the control group, the majority of respondents, after being given nursing care from the hospital without being given the animated video, showed mild anxiety levels, with 9 respondents (60.0%). The results of this study showed that health education can help patients feel more comfortable before undergoing laparotomy surgery. Health education aims to change respondents' behaviour, including how they think, behave, and act, to reduce anxiety. Thus, health education can decrease respondents' anxiety. One non-pharmacological method used to reduce anxiety is audio-visual media, such as animated videos for pre-operative patients. This method helps alleviate stress and anxiety by redirecting patients' attention. Pleasant sensory stimuli trigger the release of endorphins, which can block stimuli that cause anxiety. As a result, fewer anxiety-inducing stimuli are transmitted to the brain (Malinti & Sulistiowati, 2025)

This study is in line with a study by Taufan Arif, which found that there is an influence between preoperative education through video media and anxiety levels in elective preoperative patients. Compared to other media, such as images and sound (audiovisual), video media conveys information better (Arif et al., 2022). In this study, the intervention was given 30 minutes before surgery and given once for a duration of 4-5 minutes, which

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was able to reduce pre-operative patient anxiety. One of the benefits of using video as an educational medium is that it makes the material presented easier to learn due to better visualisation (Sayuti et al., 2022). If information has both audio and visual elements, it is easier for respondents to process it.

Cognitive-affective theory explains how animated videos help reduce anxiety. This theory states that information conveyed visually and verbally is easier to understand and remember and can activate positive emotions. In addition, engaging visual education can divert attention away from fear and make people feel calmer (Edwar et al., 2020). In addition, video media also supports the principle of andragogy, which means that adults learn more easily if lessons are delivered in a relevant, practical, and directly applicable manner, supporting the use of video media (Santika Nesara Ferari & Asmat Burhan, 2025). In these situations, animated videos provide a realistic picture and visualisation of medical procedures, which makes it easier for patients to understand rather than using verbal or visual education (Nugroho et al., 2020).

Based on the results of data analysis, it was found that there was a significant effect between the provision of animated videos and a decrease in the anxiety levels of preoperative laparotomy patients under general anaesthesia, with an asymptotic trend. Sig. (2-tailed) value of 0.000 ($p < 0.05$). These findings indicate that animated videos can play an effective role in reducing patient anxiety before undergoing general anaesthesia procedures.

The results of this study indicated that respondents understood the information better after receiving instructions through video media. It is because the video content, which lasted three minutes and forty seconds, provided concise, clear, and easy-to-understand information, thereby facilitating the respondents' understanding. A study conducted by Andriani & Putri (2023) showed that a 4-minute 55-second educational video helps students check infant anthropometry more effectively. Video media is considered a better teaching tool for achieving learning objectives because it activates hearing and vision and captures respondents' attention (Malinti & Sulistiowati, 2025).

In the advanced digital era, the use of educational media has developed, such as the use of video media, which shows higher results in increasing knowledge compared to leaflets (Wahyuni et al., 2024). However, each individual has different coping mechanisms; thus, a review before intervention is still necessary to understand the level of anxiety experienced by patients (Lestari & Kosim, 2024).

CONCLUSION

This study measured the anxiety levels of patients undergoing laparotomy before and after receiving health education, and concluded that the level of anxiety among preoperative laparotomy patients before watching the animated video showed that the majority experienced moderate anxiety. The level of anxiety among preoperative laparotomy patients after receiving health education showed that the majority experienced mild anxiety. There was a difference in the anxiety levels of preoperative laparotomy patients between before and after watching the animated video at PKU Muhammadiyah Gamping Hospital.

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RECOMMENDATIONS

It is expected that patients undergoing laparotomy will no longer experience severe anxiety that could affect the surgical process, and they will find it easier to understand the information provided through the animated video. It is expected that the findings of this study can serve as a basis for consideration, particularly by clinic management, in providing services, especially in terms of addressing pre-operative patient anxiety through animated videos as a means of health education for patients. For future researchers, to further develop this research by analysing factors that may influence patient anxiety levels, further research is needed on the effect of video education on reducing preoperative anxiety in patients undergoing general anaesthesia.

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