

Original Research Paper

Virtual educational video tour of the central surgical installation reduce anxiety of preoperative patients**Vita Purnamasari*** , **Aisyah Nur Azizah**, **Nia Handayani**

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Abstract

Surgery is one of the medical procedures that will give an emotional reaction to the patient. Stressors that appear can be in the form of physiological stress, psychological stress (anxiety and fear) and social stress. The anxiety felt in pre-operative patients is mostly caused by excessive worry about what the patient will face during the surgical procedure. The implementation of pre-operative orientation can provide patients with an understanding of their condition and avoid negative things that arise in patients due to ignorance about the treatment they will receive. Orientation about the Central Surgical Installation room can be one of the interventions to increase patient knowledge so that anxiety can decrease. This research aims to develop educational media in reducing anxiety through audiovisual videos of the orientation of the Central Surgical Installation (IBS) room. The type of research planned is a quasi experiment research with a Pretest-Posttest Control Group Design approach. Sampling using accidental sampling. Data analysis used the Wilcoxon Signed Rank Test and Mann-Whitney Test. The results showed that there was a significant difference in anxiety between the intervention group and the control group after being given an educational intervention with a virtual video tour with a P value of $< \alpha$ (0.05) which means that there was a significant influence between the provision of virtual tour education in the IBS room on the anxiety of preoperative patients. This study has a significant influence on providing education using virtual tour videos to reduce anxiety in preoperative patients.

Keywords: anxiety; audiovisual video; pre-operation**1. Introduction**

Anxiety cannot be separated from patients who will face surgery. Anxiety is an emotional state characterized by uncontrollable worry about various events in daily life. Everyone has experienced an anxious phase, especially patients who are about to undergo a surgical procedure. As many as 90% of patients who will undergo surgical procedures feel anxiety (Lubis, 2019). The anxiety that patients feel is related to various kinds of foreign procedures that they will undergo and also the threat to life safety due to surgical procedures and anesthesia procedures. According to research Pefbrianti et al. (2018) The anxiety experienced by preoperative patients is caused by the lack of information about the anesthesia procedure and the orientation of the operating room.

Pre-operation is one of the initial stages in surgery which starts from the decision of surgical intervention to end when the patient is on the operating table. In this phase, patients need to be prepared for their condition, both psychologically and physically. The anxiety can be in the form of physiological changes (shaking, sweating, increased heart rate, abdominal pain, shortness of breath) and behavior (restlessness, rapid speech, surprise reactions) (Widyaningrum, 2017). The feeling of worry about the surgical process that he will undergo is the reason for anxiety that arises because the patient will continue to think about it so that information about the surgical procedure is needed before the patient is operated on (Hasanah, 2017). Preoperative anxiety often occurs due to a lack of knowledge about the procedure being undergone and not knowing the impact of the surgical procedure, causing fear of the

procedure itself. The implementation of preoperative orientation can provide patients with an understanding of their condition and avoid negative things that arise in patients due to ignorance about the treatment they will receive.

Preoperative patient anxiety must be treated immediately because it can cause physiological changes that can hinder the operation and can even cause the postponement of surgery because the patient becomes uncooperative and uncontrollable. Anxiety in preoperative patients can cause surgery to be unable to be carried out or canceled, then anxiety also causes an increase in the patient's blood pressure. If the patient's blood pressure is high and the surgery is still performed, it can interfere with the effect of the anesthetic drug and complications occur during surgery.

Providing information is one of the techniques that can be used for the management of patients who experience anxiety. The purpose of health education is to increase the patient's knowledge in dealing with the surgical procedures that he will face (Sari et al., 2020). The sophistication of today's technology makes it possible to express and present information using audiovisual aids in the process of providing information. Multimedia information is also generally easier to understand, some clinical trials show a clear anxiolytic effect with the use of educational videos about the orientation of the operating room/Central Surgical Installation which will later give patients an overview of the surgery to be performed. This type of media has better capabilities, because it includes two types of media, namely sound and image, and will activate verbal and nonverbal cognitive channels so that it can help understand information better. This research will later utilize technology in the application of education for preoperative patients in the form of audiovisual videos that describe the operating room and patient management when undergoing surgery. This media is expected to provide education to preoperative patients so that it can reduce the anxiety experienced by patients when they are about to undergo surgery. The research roadmap related to the development of audiovisual educational video media can be used by medical personnel to make it easier to provide information to patients with media that is more interesting to patients.

2. Research Methods

This study uses the Quasy Experiment research method with the Pretest-Posttest With Control Group approach. The Intervention Group in this purchase was given education using a virtual video tour of the IBS room and was given pre-operative patient education in accordance with the Hospital's Standard Operating Procedures (SOP). The control group in this study was given preoperative patient education in accordance with the Hospital SOP. The research sample was pre-operative patients at PKU Muhammadiyah Gamping Hospital. The sampling technique uses a non-probability sampling group with an accidental sampling type. The sample size to be taken in this study is 30 respondents who are divided into 2 groups (intervention group and control group). The collection of research data was carried out on July 17 – August 5, 2023 in 5 Surgical Care Wards of PKU Muhammadiyah Gamping Hospital. The instrument used to measure the success of reducing anxiety in patients who are provided with information about anesthesia procedures is using The Amsterdam Preoperative Anxiety and Information (APAIS) questionnaire, because this measurement tool is more specific to measure anxiety in anesthesia and surgery. The creation of an educational video which is a preoperative intervention for preoperative patients is made with the collaboration of the IT team and the expert team from anesthesia, namely the anesthesiologist who will provide input related to the content of the educational video made.

Data analysis uses 2 methods, namely, univariate and bivariate analysis. Univariate analysis included patient anxiety before the intervention and patient anxiety after the intervention. Bivariate analysis was carried out to determine the difference before and after the intervention was given with the *Wilcoxon Signed Test*. Meanwhile, to find out the difference between the intervention group and the

control group using the *Mann-Whitney Test*. This research is worthy of the Research Ethics test of PKU Muhammadiyah Gamping Hospital with Ethics Number 122/KEP-PKU/VI/2023.

3. Results and Discussion

3.1. Univariate Analysis

3.1.1. Characteristics of Respondents

Respondent characteristics based on age and gender in the control and intervention groups.

Table 1. Frequency Distribution of Respondents by Age and Gender (n=30)

Variable	Range	Group				Total	
		Control		Intervention		N	%
		F	%	F	%		
Age	26-45	8	53.3	10	66.6	18	60
	46-65	7	46.6	5	33.3	12	40
Gender	L	10	66.7	7	46.6	17	56.6
	P	5	33.3	8	53.3	13	43.3

Source: Primary Data, 2023

Table 1 shows that the age frequency of respondents in the control group is the highest in the range of 26-45 years, which is 8 respondents. In the intervention group, the most frequent was in the age range of 26-45 years, namely 10 respondents. The frequency and presentation based on gender of the most respondents were male respondents at 17 (56.6%) while the gender of female respondents was 13 (43.3%).

The results of this study are most in the age range of 26 – 45 years, namely in the adult age category. Based on research Pane (2019), entitled "Overview of Anxiety Levels in Preoperative Patients in the Operating Room of Dr. Pingardi Medan Hospital in 2019" was obtained by patients who experienced the highest anxiety based on age were patients aged 26 to 35 years with a total of 20 respondents. This is also in line with previous research that says early adulthood is a time full of struggles in exploring life, such as in terms of education, illness, finances, work but lacking long-term goals so it often causes anxiety that is described as excessive fear or worry (Nabila et al., 2021).

In this study, the gender of the respondents was mostly male. Men have a heavier burden of life than women, triggering stress and anxiety. Based on research Prima (2019) with the title "The Relationship between Gender and Education on the Anxiety of Preoperative Fracture Patients in the Surgical Inpatient Room of Achmad Mochtar Bukittinggi Hospital" found that mild anxiety experienced by male patients was 9 people and 3 women, while those who experienced severe anxiety of patients with male sex were 10 people and 9 women. Based on theory A Potter, & Perry (2015), explaining that gender can affect the incidence of preoperative anxiety. Anxiety is usually experienced by men more than women, this is because most women are stronger and more intensive in responding to stimuli or stimuli from the outside than men (Seniwati, 2018).

Based on research Leniwita (2019), with the title "The Relationship of Knowledge and Characteristics of Patients to Anxiety in Facing Surgery at RSU UKI Jakarta in 2017" obtained data on patients with the male gender who experienced anxiety in facing surgery as many as 14 people (82.4%) while women who experienced anxiety in facing surgery as many as 6 people (40%). There were 3 patients with a male gender who were not anxious about facing surgery (17.6%) while women who were not anxious when facing surgery were 9 people (60%) and the result of the OR value = 7,000

meant that men had a chance to experience anxiety 7 times in facing surgery compared to women. This is in line with previous research which said that men have a great responsibility to fulfill the welfare of life where men must work hard for themselves and their families because men are the head of the family (Pefbrianti et al., 2018).

3.2. Bivariate Analysis

Bivariate analysis using *the Wilcoxon Signed Test* to determine the level of anxiety of patients before and after being given IBS visual tour video education is presented in the following table:

Table 2. Differences in Anxiety Levels Before and After IBS Visual Tour Video Education in Preoperative Patients at PKU Muhammadiyah Gamping Hospital (Control Group)

Anxiety Level	Pretest (n=15)		Posttest (n=15)		Sig
	f	%	f	%	
No Anxiety	2	0.13	3	0.20	P = 0.700
Mild Anxiety	4	0.26	5	0.33	
Moderate Anxiety	9	0.60	7	0.46	

Source: Primary Data, 2023

Table 2 shows that there is no significant difference in preoperative anxiety in the control group with a $p > 0.700$ ($p < 0.05$) value. Patients who experienced preoperative anxiety in the control group showed that the majority had moderate anxiety as many as 9 patients, and patients who did not experience anxiety as many as 2 patients. In the control group, only pre-anesthesia educational intervention was given in accordance with the hospital SOP, after being given educational intervention according to the hospital SOP, the majority of patients' anxiety values remained in moderate anxiety, which was as many as 7 patients (0.46%).

Table 3. Differences in Anxiety Levels Before and After IBS Visual Tour Video Education on Preoperative Patients at PKU Muhammadiyah Gamping Hospital (Intervention Group)

Anxiety Level	Pretest (n=15)		Posttest (n=15)		Sig
	f	%	f	%	
No Anxiety	3	0.20	10	0.66	P = 0.700
Mild Anxiety	3	0.20	4	0.26	
Moderate Anxiety	9	0.60	1	0.06	

Source: Primary Data, 2023

Table 3 shows that there is a significant difference in preoperative anxiety in the intervention group before and after being given the *virtual tour educational intervention* with a value of $p = 0.020$ ($p < 0.05$). The majority of preoperative patients who experienced anxiety before education experienced moderate anxiety as many as 9 patients (0.60%), after being given the intervention, patients who experienced moderate anxiety decreased by 1 patient (0.06%) while the majority of patients after being given the intervention felt not anxious as many as 10 patients (0.66%).

Table 4. Comparison of Preoperative Anxiety Levels in the Control Group and the Intervention Group

Preoperative Emergency	Group	P
Pre-test	Intervention Control	0.090
Post-test	Intervention Control	0.020

Source: Primary Data, 2023

Table 4 showed that there was no significant difference in preoperative anxiety between the intervention group and the control group before the virtual video *tour intervention*. Preoperative anxiety in both groups was relatively the same as the *P value of 0.090*.

The results of the *Mann Whitney Test* for preoperative anxiety of patients after the intervention showed a significant difference between the intervention group and the control group with a value of $P = 0.020$ ($P < 0.05$).

3.3. Discussion

In this study, there were significant differences in the samples before and after the intervention. Some respondents experienced anxiety before pre-surgery due to the lack of information received by patients about the procedure they would undergo, causing anxiety as a form of concern about a threat. This is in line with previous research Agustina (2019) entitled "The Relationship between Patient Knowledge of Preoperative Information and Preoperative Patient Anxiety in the Inpatient Room" said that the psychological response that occurs in patients who will undergo surgical procedures is an anxious reaction felt by patients. Surgical procedures can cause anxiety and fear in patients even though each individual has a different response. Among them are fear and refusal to perform surgery, some clearly state or do not understand the cause of their fear Hatimah et al., (2022). Anxiety symptoms can arise as a result of internal factors both psychologically and biologically, while external factors come from the environment (Nugroho et al., 2020). Mental support for patients can be provided in the pre-operative stage by helping patients to know about the action to be experienced, providing information about the time of surgery, the surgery process, and showing the location of the operating room (Kurniawan et al., 2018). Several interventions can be carried out in managing preoperative anxiety including pharmacological interventions with the provision of premeditation, presence from the family during the induction process, various distraction techniques during the preparation of anesthesia, and provision of pre-procedural education including operating room visits (Yulianti et al., 2021). This anxious reaction will continue when the patient has never or lacked information related to the action to be taken against him.

Providing information has an effective influence in reducing the anxiety of preoperative patients, because the provision of preoperative information aims to increase knowledge about the procedure to be undertaken, eliminate fear and answer doubts. New information obtained about something can provide a new cognitive foundation for the recipient of information so that knowledge can be formed about it (Hasanah, 2017). Some of the things that cause preoperative anxiety are fear of the effects of pain, death, fear of ignorance, fear of disability, and other threats that have an impact on the body (Hatimah et al., 2022). Providing information to preoperative patients in the form of audiovisual videos will be more interesting and more accessible to patients compared to providing education/information orally without using educational media. Audiovisual video educational media in the IBS room is one of the audio-visual videos that can be used to provide information to patients about the course of the

surgery to be performed. Audiovisual media is a type of media that has elements of sound and images that can be seen, such as video recordings, slides, sounds, and so on. This type of media has better capabilities, because it includes two types of media, namely sound and image, and will activate verbal and nonverbal cognitive channels so that it can help understand information better.

Backed by research Fatmawati et al., (2019), about the Audiovisual Effect of Watching Cartoon Movies on the Level of Anxiety During the Injection Procedure in Preschool Children showed that the results of the study after audiovisuals of watching cartoon movies during the injection procedure in preschool children, almost all of them did not experience anxiety, which was 23 (82.1%). Likewise, research from Wahyuningrum (2015), about the effect of audiovisual stories on the anxiety level of preschool-aged children who are hospitalized at PKU Muhammadiyah Bantul Hospital which explains that the effect of audiovisual storytelling on the reduction of anxiety in children who are hospitalized is 32%. Research Budianto et al., (2018), showing that in the treatment group with the provision of information through multimedia video, there was a decrease in anxiety levels after being given the intervention so that it can be concluded that the provision of this intervention succeeded in preventing an increase in anxiety when the patient was transferred to the operating room reception room.

Providing education with audio visuals is one of the non-pharmacological actions that can reduce patient anxiety before pre-surgery. The results of the research that has been carried out by Pefbrianti et al. (2018) that non-pharmacological therapy with the provision of preoperative education can reduce patient anxiety. Providing education or information before surgery is not only the obligation of health workers but also the patient's right to receive information related to the treatment/surgery to be performed. As an educator, of course, you can carry out your role as a service provider by providing interventions to reduce anxiety through *Pre op teaching* in the hope that the patient will obtain clear information about the action to be faced (Fadli et al., 2017). The use of audio-visual media as a media tool in providing education to patients can increase attention to the information presented because this method can also stimulate the eyes and ears (Dermawan et al., 2021), audio-visual media serves to expand knowledge so that patients can be facilitated about the actions they will experience in the surgical process.

4. Conclusion

Based on the results of the study and discussion, it can be concluded that there are significant differences in the intervention group before and after being given audiovisual video education, and there are significant differences between the intervention group and the control group after being given audiovisual education intervention. Education using audiovisual videos has an effect on reducing anxiety in preoperative patients.

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