



The Impact of Progressive Muscle Therapy on Anxiety Levels Among Pre-Anaesthesia Patients at RSI Banjarnegara

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Abstract

Background: Preoperative anxiety, which heightens sympathetic activation, increases anesthetic requirements, and worsens recovery, can be mitigated by Progressive Muscle Relaxation (PMR), a simple, safe, and low-cost nonpharmacologic intervention; however, evidence from Indonesian district hospitals, including RSI Banjarnegara, remains limited. **Purpose:** Determine the effect of progressive muscle therapy on the anxiety level of pre-anesthesia patients at RSI Banjarnegara. **Methods:** This type of research is a pre-experiment, pre-test, and post-test with a group design. The sample technique in this study used purposive sampling of 37 pre-anesthesia patients. Data were taken using measurements of anxiety before and after progressive muscle therapy. This research instrument used questionnaires and SOP for progressive muscle therapy. **Result:** The anxiety level of respondents before being given progressive muscle therapy was the majority of 26 respondents (70.3%) experienced moderate anxiety. The anxiety level of respondents after being given progressive muscle therapy was that the majority of 20 respondents (54.1%) experienced mild anxiety. The results of data analysis in this study with a paired t-test showed a value of $(p) 0.000 < 0.05$. **Conclusion:** This shows that there is a significant influence on the provision of progressive muscle therapy at RSI Banjarnegara. Based on the results of the study, it is expected that the Banjarnegara RSI service will use progressive muscle therapy to reduce pre-anesthesia anxiety levels.

Keywords: progressive muscle therapy, anxiety, pre-anesthesia

Introduction:

According to Utama (2013) in Agustina et al. (2018), it is a threat and potential and actual effects on a person's integrity that can then cause a physical or psychological stress response. Based on 2018 World Health Organization (WHO) data, that for more than a century. Surgical care has become an important component and health care worldwide. It is estimated that per year, there are 230 million surgical procedures performed worldwide. National

Tabulation Data of the Ministry of Health of the Republic of Indonesia in 2018 describes that surgery ranks 11th and 50th disease patterns in Indonesia, with a percentage of 12.8% (Ministry of Health, 2018).

Surgery is a worrying situation for patients who will undergo it. According to Utama (2013), in Agustina et al. (2018) Surgery and anesthesia can result in anxiety in patients characterized by mental tension as a bodily response. Anxiety and fatigue

are indicators of physical and psychological stress. The psychological stress of patients before surgery is less considered, compared to the physical stress of the national (Yuliana *et al.*, 2020).

Pre-anesthesia anxiety, can affect hearing, heart frequency, and blood pressure (Wavanuarita *et al.*, 2018). According to Manurung (2016) in Agustina *et al.* (2018) Other symptoms that can be caused by anxiety are shaking, panic, tension. was confused, and couldn't concentrate. Anxiety can affect body functions before surgery (Rihiantoro *et al.*, 2018).

Factors that influence anxiety include such as, gender, age. Type and degree of surgery. history of surgery, and susceptibility to full situations. pressure (Wicaksana *et al.*, 2022). High anxiety can harm the patient. so that surgery can be postponed or even canceled (Liestvaningrum *et al.*, 2019).

Based on data from research conducted by Rismawan *et al.* (2019) on the anxiety level of preoperative patients at Dr. Soekardi Tasikmalaya Hospital, it shows. that respondents of mild anxiety were as many as 9 people (21.4%), moderate anxiety levels were as many as 21 people (50.0%), severe anxiety levels were as many as 12 people (28.6%).

Efforts to reduce anxiety levels are by preparing mentally and patients (Yunita., 2020). At this time many non-pharmacological therapies have been developed to overcome anxiety. Non-pharmacological intervention is needed in patients to overcome anxiety, insecurity, and also anxiety. Non-pharmacological techniques such as music therapy, guided imagery, mindfulness training, virtual reality, and progressive muscle therapy (Hermanto. 2020).

The purpose of this study was to determine the effect of progressive muscle therapy. There is a level of anxiety for pre-anesthesia patients at RSI Baniamegara.

The author hypothesizes that there is an effect of progressive muscle therapy on the anxiety of pre-anesthesia patients at RSI Banjarnegara.

Method:

The research method used in this study is quantitative with a pre-experimental design approach. The form of pre-experimental design used by researchers is the form of one group pre test post test design. The sample technique in this study used purposive sampling of 37 pre-anesthesia patients. This research has been approved by the research ethics review board of Universitas Harapan Bangsa with approval number No. B.LPPM-UHB/1637/03/2023 on June 20, 2023. This research instrument used questionnaires and SOP for progressive muscle therapy.

Study Design

This analysis used primary data from the results of questionnaires conducted on the respondents studied, namely pre-anesthesia patients before and after progressive muscle therapy and data about respondents. With the criteria for inclusion of elective surgery patients, patients aged 17-70 years, and willing to be respondents. The exclusion criteria in this study were patients with mental disorders, patients operated outside the operating room, patients with cito / emergency surgery, and patients with fracture conditions.

This study was conducted by giving a HARS questionnaire to conduct a pre-test anxiety assessment then perform progressive muscle therapy on each pre-anesthesia patient who was a respondent in this study. Progressive muscle therapy is performed for 10 minutes on each respondent including introduction, informed consent, explaining the purpose, contract time, indications and contraindications of progressive muscle therapy. Therapy is carried out according to

Standard Operating Procedures (SOP). After that, anxiety assessment was carried out again as a post-test using the HARS questionnaire.

Data Collection and Outcome Measurement

Researchers process data using a computer program, then do editing, marking samples, entering data, cleaning data, and tabulating.

This study focused on measuring anxiety levels in pre-anesthesia conditions.

Anxiety Levels

Anxiety levels are measured using the Hamilton Anxiety Rating Scale (HARS). HARS '1-14' no anxiety; '14-20' mild anxiety; '21-27' moderate anxiety; '28-41' severe anxiety; '42-56' severe anxiety (Ramdan, 2018).

Statistic analyses

All statistical analyses in this study used SPSS statistics with Version 23.0; IBM. Analysis of anxiety levels before and after progressive muscle therapy in pre-anesthesia. Then a test was carried out on the results of measuring the effect before and after progressive muscle therapy using a paired t test because the data was normally distributed.

Bivariate analysis is used to look at the relationship between two variables. Both variables mean the main variable, namely the influence variable (free) and the affected variable (not free). Bivariate analysis is to determine the effect before and after progressive muscle therapy on the anxiety level of pre-anesthesia patients.

Before analysis, data normality tests were carried out. Data normality test is a test conducted to assess the distribution of data taken, whether the distribution of data is normally distributed or not. In this study, the data normality test used the Shapiro Wilk test because the respondents were

<50. Normality tests for before and after progressive muscle therapy in respondents get results of 0.065 and 0.103 >0.05 which means normal distribution.

Result

As previously reported, 37 respondents underwent general anesthesia and regional anesthesia from June 26 to July 5, 2023.

Table 1. Frequency Distribution of Anxiety Level Before Pre-Anesthesia Progressive Muscle Therapy at RSI Banjarnegara in 2023 (n=37)

No.	Variable	f	%
1.	Mild Anxiety	11	29,7
2.	Moderate Anxiety	26	70,3
Total		37	100,0

The results of data analysis showed that of the 37 respondents before being given progressive muscle therapy, a total of 26 (70.3%) respondents experienced moderate anxiety (Table 1).

Tabel 2. Frequency Distribution of Anxiety Level After Progressive Muscle Therapy at RSI Banjarnegara in 2023 (n=37).

No	Variable	f	%
1.	No Anxiety	17	45,9
2.	Mild Anxiety	20	54,1
Total		37	100,0

The results of data analysis showed that of 37 respondents after the administration of progressive muscle therapy, a total of 20 (54.1%) respondents experienced mild anxiety (Table 2).

Table 3. The Effect of Progressive Muscle Therapy on Anxiety Level in Pre-Anesthesia Patients at RSI Banjarnegara (n = 37)

	Pre test	Post test	Paired Samples Test		
			Mean	Std. Deviatio	Sig.
No Anxiety	17		9.162	2.764	0.000
Mild anxiety	11	20			
Moderate anxiety	26				
N	37	37			

Paired t test results with a value of (p) value 0.000 < 0.05. This shows that there is a

significant difference between the level of anxiety before and after progressive muscle therapy in pre-anesthesia patients at RSI Banjarnegara. After progressive muscle therapy, there was a change in anxiety levels, as evidenced by previous results, most experienced moderate anxiety, namely as many as 26 people (70.3%), mild anxiety 11 people (29.7%), and no respondents who were not anxious, severe anxiety, and severe anxiety (0%). After progressive muscle therapy, mild anxiety 20 people (54%), not anxious 17 people (45.9%). And none of the respondents were moderately anxious, severely anxious, to severely anxious (0%). This shows that there is an effect of progressive muscle therapy on the anxiety of pre-anesthesia patients at RSI Banjarnegara (Table 3).

Discussion

The Effect of Progressive Muscle Therapy On The Anxiety Level Of Pre-Anesthesia Patients At RSI Banjarnegara

1. Anxiety level of pre-anesthesia patients before progressive muscle relaxation therapy

Based on the results of the study, it is known that the majority of anxiety levels in respondents at the pre-test stage or before progressive muscle relaxation therapy were moderate anxiety as many as 26 respondents (70.3%). This can be because according to the SOP at RSI Banjarnegara that all pre-anesthesia patients are given informed consent first. Informed consent is everything the patient learns before receiving anesthesia, including the purpose of the procedure, the anesthesia process, potential risks and complications, a backup plan in case of complications. The provision of informed consent is considered to affect the patient's anxiety level so that the anxiety of pre-anesthesia patients is mostly moderate anxiety (Murdiman *et al.*, 2019).

In this study, before the intervention was given, the majority of patients experienced moderate anxiety. According to Videback (2009) in Kartikasari & Nurizka (2019), the patient's state at a moderate level of anxiety allows a person to focus on important things and put aside those that are not important or not a priority characterized by decreased attention, decreased problem solving, impatience, irritability, muscle tension, increased vital signs, starting to sweat, frequent pacing, frequent urination and headaches.

According to Kaplan & Sadock (1997) in Yuliana (2020), pre-anesthesia patients experience anxiety because they are influenced by two factors, namely intellectual factors such as age, experience or history of undergoing surgery, and self-concept and role. Then it is also influenced by extrinsic factors such as, medical disease state, education level, access to information, adaptation process, socioeconomic status, type of anesthesia action, and therapeutic communication.

In this study, before intervention was given, there were also patients who experienced mild anxiety. This can be due to the patient's level of education so that patients can easily receive information quickly and well at the time of informed consent. Then it can also be due to surgical experience, because some patients are not the first time to undergo surgery (Yuliana *et al.*, 2020).

In line with this study, before the intervention the majority of patients experienced moderate anxiety. Research conducted by Rismawan *et al.* (2019) on the anxiety level of preoperative patients at RSUD dr. Soekardjo Tasikmalaya City. The results showed that respondents with mild anxiety levels were 9 people (21.4%), moderate anxiety levels were 21 people (50.0%), severe anxiety levels were 12 people, 12 people (28.6%).

2. Anxiety level of pre-anesthesia patients after progressive muscle relaxation therapy

Based on the results of the study, it is known that the majority of anxiety levels in post-test stage respondents or after being given progressive muscle relaxation therapy were mild anxiety as many as 20 respondents (54.1%). This can be because when giving progressive muscle therapy the patient does really feel each stage of muscle contraction tension then the patient releases relaxed. According to Kozier (2011) in Rihiantoro (2019) So that patients are better prepared to undergo surgery.

According to Comer (1992) in Rihiantoro (2019), untreated patient anxiety can affect preoperative body functions. Excessive anxiety, affecting the body's work system such as blood pressure, breathing, increased heart rate, and shaking. The procedure may be canceled or postponed as these conditions pose a serious risk to the patient's health. Efforts to reduce anxiety levels by mentally preparing pre-anesthesia patients in advance.

In pre-anesthesia conditions there are several preparations for the patient's psychological condition such as, providing explanations this is intended so that patients and families feel comfortable with providing explanations about the anesthesia and surgical strategies applied. It can also be with pharmacological and non-pharmacological therapies (Ismoyowati *et al.*, 2020).

According to Isaacs. (2005) in Pambudi. (2017) Pharmacological therapy is a treatment for anti-anxiety, especially benzodiazepines, this drug is used for the short term, and is not recommended for the long term because this treatment causes tolerance and dependence. Nonbenzodiazepine anti-anxiety medications, such as buspirone (Buspar) and various antidepressants may also be used. Pharmacological therapy may be given to patients who show extreme anxiety

or who are uncooperative, such as in pediatric patients.

According to Huda. (2016) in Novianti. (2021) Pre-anesthesia anxiety can also be treated with non-pharmacological therapy. Now many non-pharmacological therapies have been developed. Non-pharmacological interventions are needed for patients to cope with pain, anxiety, discomfort and anxiety, so that it will help avoid or reduce drug therapy needed for anxiety experienced.

According to Jacobson (1938) in Rihiantoro *et al.* (2019). Non-pharmacological therapy is a simpler, cheaper, and more enjoyable technique. Types of non-pharmacological techniques to reduce anxiety in the form of music therapy, guided imagery, virtual reality, and progressive muscle therapy, one therapy that includes non-pharmacology is progressive muscle relaxation therapy. Progressive muscle relaxation therapy is a therapeutic technique that involves the patient sequentially tensing and relaxing the patient's muscles while concentrating on the sensations that arise between when the muscles relax and when they are tense.

Some patients do not experience anxiety because the patient has undergone the same surgery, in addition to providing informed consent the patient has also obtained complete information about the benefits, objectives, risks and picture of the final results of the operation. The patient will assume that the surgery will bring healing, can reduce difficult symptoms, or can improve his appearance (Rohmawati *et al.*, 2012).

3. The Effect of Progressive Muscle Relaxation Techniques on the Anxiety Level of Pre-Anesthesia Patients at RSI Banjarnegara

From the research above, it can be described the paired t test results with a value of (p) 0.000 0.05. The results showed that there was an influence before and after the administration of

progressive muscle therapy on the anxiety level of pre-anesthesia patients at RSI Banjarnegara. Preoperative patients can experience anxiety, this is a natural psychological response. Anxiety experienced can be at risk of mild, moderate, severe and panic responses. One action to reduce anxiety is using progressive relaxation techniques. This can be because progressive muscle therapy techniques can compress sympathetic nerves so as to reduce the tension experienced by individuals reciprocally, resulting in counter conditioning (removal). The sympathetic nervous system is more active when the body needs energy, for example in anxiety (Handayani & Rahmayati, 2018).

According to Utami. (2018) in Fadillah & Yudianto (2021), progressive muscle relaxation therapy is a procedure to get muscle relaxation through two steps. The first step is to apply tension to a muscle group, and the second is to stop the tension and then focus on how the muscle relaxes, and feel the sensation of physically relaxing when the tension disappears. Basically, progressive muscle relaxation involves concentration and relaxation between various muscle groups starting from the legs up or from the head down. This can provide a relaxing sensation, provide calm, and relieve anxiety.

Progressive muscle therapy also stimulates the production of endorphins and serotonin hormones that increase feelings of calm to a person. The progressive muscle relaxation can stimulate brain signals in increasing blood flow to the brain so that oxygen intake in the brain can be fulfilled. With this situation, blood circulation throughout the body can run normally again, marked by some tense muscles will relax again (Astuti & Ruhyana, 2015).

A series of relaxation therapies ranging from muscle relaxation and concentration will cause a relaxed condition in the body so that the body responds to releasing endorphins that make patients relax and reduce pain, especially when the brain reaches alpha waves or at rest. In this condition when the body releases serotonin and endorphins so that humans are in a relaxed state without tension and anxiety (Ambarita et al., 2019).

Limitations and Future Research

The results of this study only examined the effect of progressive muscle therapy, so further researchers in data collection can add factors that influence anxiety to characterize response.

Conclusion

1. Respondents' anxiety level before progressive muscle therapy as many as 26 respondents (70.3%) experienced moderate anxiety.
2. The level of anxiety of respondents after being given progressive muscle therapy as many as 20 respondents (54.1%) experienced mild anxiety.
3. There was a statistically significant difference in anxiety levels before and after progressive muscle therapy with a value of $(p) 0.000 < 0.05$. There is an effect of progressive muscle therapy on the anxiety level of pre-anesthesia patients at RSI Banjarnegara.

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