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Research Article

The Effectiveness of Mind-Body Therapy on Reducing Anxiety Levels of Pre-Operative Patients: A Literature Study

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Abstract.
Many patients experience anxiety before surgery. Complementary therapy with a mind-body therapy approach can be used to reduce this anxiety. This study aimed to provide an overview of the effectiveness of complementary therapy with a mind-body therapy approach in reducing anxiety in pre-operative patients. The study was a literature study of 3,324 articles. Following the selection process, 2 articles were found: Pubmed (n=9) and Portal Garuda (n=3). The articles were discovered using the keywords, mind-body therapy AND anxiety AND preoperative OR preoperation for international articles. Assessment of article quality was carried out using the Joanna Briggs Institute (JBI) for Randomized Controlled Trials and Quasi-experimental. The study used a thematic method of analysis. Complementary therapy with the mind-body therapy approach had the advantage of being easy to apply and inexpensive compared to other therapies. Guided imagery, visual imagery, music and art therapy are alternative therapies that can be given to reduce anxiety levels in pre-operative patients.

Keywords: alternative therapies, anxiety levels, complementary therapy, pre-operative patients

1. INTRODUCTION

The incidence of anxiety in the world is still considered quite high. Based on data reports by the (1) it is estimated that around 264 million people in the world live side by side with anxiety. The data increased by 14.9% from 2005. Data from WHO also states that women are the population with the highest anxiety level (2). The prevalence of anxiety in Indonesia is also quite high. The Riskesdas (3) report shows that anxiety is the second most common mental illness case in Indonesia after depression (4). The estimated percentage of people with anxiety in Indonesia is 2 to 5 percent of the total population or 7 to 16% of the population with other mental disorders (5).

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1. INTRODUCTION

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Surgery is a form of threat to physical integrity that can cause anxiety. This anxiety arises when the surgical process will take place. Anxiety experienced is usually related to things such as fear of the procedure being performed, fear of death, not ready to face changes in self-image after surgery and relatively expensive operating costs. The effect of this is the delay in the operation process (6,7)

Previous research that has been done shows the level of anxiety in pre-operative patients is at moderate to severe levels. Research conducted by (8) on preoperative patients at the Dr. Regional General Hospital. R. Soeprapto Cepu showed data from 25 respondents studied, there were 10 patients (40%) reported feeling anxious at a moderate level and 15 patients (60%) feeling anxious at a severe level. This is supported by another study conducted by (9) in patients with pre-senile cataract surgery at the South Sumatra Eye Hospital which showed data from 56 respondents studied, there were 28 patients (50%) experiencing severe anxiety and 28 patients (50%) experienced very severe anxiety.

Complementary therapy can be given to preoperative patients such as education about the surgical procedures undertaken to various relaxation techniques to reduce anxiety levels in preoperative patients. Complementary therapy also has a much lower risk and does not have any risk compared to pharmacological therapy which is also given to reduce anxiety levels in pre-operative patients (10).

According to (11) several therapies that can be given and become alternatives for patients who have anxiety are progressive muscle relaxation, yoga, and meditation which are part of the mind-body therapy category. Mind-body therapy focuses on the interaction between the brain, body, mind, and attitude with the aim of using these thoughts to influence the physical and lead to improved health (12). This therapy teaches how to stay focused on thoughts and emotions so that it can increase the ability to cope with stressors and can help reduce negative emotions such as stress that can cause anxiety (13). This type of therapy does not require special tools or training and most importantly the patient can be trained easily and can be easily accepted by the patient (14). Based on anxiety problems that can be experienced by preoperative patients and the potential use of mind body therapy to reduce anxiety levels, researchers are interested in conducting a literature review of the effectiveness of using mind body therapy to reduce anxiety in preoperative patients.

2. MATERIALS AND METHODS

Researchers used a literature study design to identify the effectiveness of mind body therapy in reducing anxiety levels, as many as 4092 articles were searched using the keywords *Mind body therapy AND anxiety AND preoperative OR preoperation*.

Researchers searched for articles in the Pubmed, Science Direct, SAGE Journal, and Garuda Portal databases. The researchers then carried out stage 1 and stage 2 screening to select articles according to the inclusion criteria, so that a total of 12 research articles were found. The article search stage can be seen as shown in Figure ??1

3. RESULTS

3.1. Article characteristics

The characteristics of the analyzed articles were categorized according to age, journal demographics, and measuring tools used in research journals. Details of the characteristics of the article are shown in table 3.1

TABLE 1: Article characteristics.

No	Article characteristics	N	%
1	Age		
	Total Respondents	895	100 %
	0 – 12 Years	344	30,8 %
	12 – 80 Years	551	69,2 %
2	Country of origin		
	United States of America	1	9.1 %
	Turkey	2	18,2 %
	Korea	2	18,2 %
	Brazil	2	18,2 %
	Iran	1	9.1 %
	Indonesia	3	27,3%
3	Anxiety Measurement Tool		
	STAI (State Trait Anxiety Inventory)	4	40 %
	m-YPAS (modified Yale Preoperative Anxiety Scale)	4	40 %
	APAIS (The Amsterdam Preoperative Anxiety and Inforation Scale)	2	20 %

Table 3.1 shows that preoperative respondents were dominated by the age group of 12 -18 years which included teenagers, adults, and the elderly. The respondents came

from several majority countries such as the United States, Turkey, Korea, Brazil, Iran and Indonesia. In this article, various anxiety measurement tools are used.

3.2. The Type of Mind Body Therapy Used for Pre Operating

Based on the 12 articles that have been analyzed, the types of mind body therapy approaches, types of surgery can be grouped as follows, and the significance value can be seen in table 3.3

4. DISCUSSION

4.1. Mind-Body Therapy Approach Intervention: Guided Imagery

Guide imagery is a non-pharmacological intervention that directs a person's mind to imagine something calming and aims to relax the mind, reduce stress, and increase comfort (27). Guided imagery therapy can also reduce anxiety levels as evidenced by several previous studies, one of which was conducted by (28) with the results of guided imagery therapy being able to reduce anxiety levels in patients undergoing hemodialysis procedures.

In addition, research conducted by (29) on children who are undergoing surgery also proves the results that guided imagery therapy can significantly reduce anxiety levels both at the pre-operative and post-operative stages in children. This is in line with the results of the articles that have been analyzed which show the results of a significant reduction in anxiety levels after complementary guided imagery therapy in pre-operative patients.

4.2. Mind-Body Therapy Approach Intervention: Visual Imagery

Visual imagery therapy directs a person to increase familiarity with a newly recognized environment, helps a person get an overview and information about the desired procedure, and can help a person to have expectations about the possible benefits and disadvantages that will be faced from the procedure to be carried out. This has the potential to reduce the experience of anxiety experienced by a person when going through a health procedure (16).

Various forms of visual imagery therapy that have been analyzed, including the use of VR or (Virtual Reality), audiovisual, to directly showing the operating room to the

TABLE 2: Article Analysis.

No.	Title, Author	Quality Score	Study Design	Instrument measurement tools	Population	Group		Result
						Intervention	Control	
1	<i>Comparing Active and Passive Distraction-Based Music Therapy Interventions on Preoperative Anxiety in Pediatric Patients and Their Caregivers</i> , Christopher R. Millett, Lori F. Gooding (15).	10/13 (76%)	Randomized Two-Group, Pretest, Posttest Design.	STAI (State Trait Anxiety Inventory) dan m-YPAS (modified Yale Preoperative Anxiety Scale)	Participants are pediatric patients (0 – 5 years old) and their caregivers (parents) who are undergoing surgical outpatient services. A total of 40 patients and their partners were divided into two groups, namely group 1 (n = 19) who received active music intervention and group 2 (n = 21) who received passive music intervention.	Group 1 (active music intervention): participants were instructed to choose music provided by the researcher. Researchers provided guitars, storage systems containing music, and small percussion instruments such as thunder tubes, drums, egg beaters, etc), as well as other age-appropriate instruments. Participants are encouraged to choose and play the instrument along with the music being played. This session is given 15 minutes. Group 2 (passive music intervention): participants were instructed to choose music that had been provided by the researcher. Researchers provide guitars as well as a storage system that contains music. This session is given the same time that is 15 minutes.	There is no control group in this study	There was a statistically significant decrease in anxiety levels in both groups (m-YPAS [p = 0.001] and STAI-Y6 [p = 0.000]) with a decrease in the mean value (m-YPAS [M = 46.54 to 37.29] and STAI-Y6 [M = 14.13 to 12.15]). There was no significant difference between the two types of music intervention (m-YPAS [p = 0.654] and STAI-Y6 [p = 0.138]). The results showed that music intervention can reduce preoperative anxiety levels.
2	<i>Effect of an Immersive Preoperative Virtual Reality Experience on Patient Reported Outcomes</i> , Kimon Bekelis, Daniel Cainan, Nathan Simmons, Todd A. MacKenzie, and George Kakoulides (16).	10/13 (76%)	Single Center Randomized Parallel Controlled Trial.	APAIS (The Amsterdam Preoperative Anxiety and Infomration Scale)	Participants were non-child patients who were scheduled to undergo elective craniotomy or spinal surgery. A total of 127 patients were divided into two groups, the intervention group (n = 64) and the control group (n = 63).	Participants in this group were given an intervention in the form of watching a VR video in the form of a show of pre and postoperative conditions accompanied by 5 minutes of audio through VR glasses. Participants can repeat the video as many times as they want and at the end of the session are given time for a question and answer session.	Participants in this group were given standard care as well as an explanation of what the participants would experience during the operation. At the end of the session there will be a question and answer session.	After the intervention was completed, there was a statistically significant decrease in the level of anxiety in the intervention group (APAIS [p = <0.001]). The results showed that the intervention by showing pre and postoperative conditions using VR could reduce preoperative anxiety levels.
3	<i>Effects of preoperative individualized audiovisual education on anxiety and comfort in patients undergoing laparoscopic cholecystectomy: randomised controlled study</i> , Hülya Kızıl Togaç, Emel Yılmaz (17).	8/13 (61%)	Randomized Controlled Trial.	STAI (State Trait Anxiety Inventory)	Participants were patients aged 18 years or older who were scheduled to undergo laparoscopic cholecystectomy under general anesthesia for the first time. A total of 124 patients were divided into two groups, the intervention group (n = 62) and the control group (n = 62).	Participants in the intervention group were given actions in the form of providing educational programs using audiovisual (video demonstrations, leaflets, and booklets) which will be given in 4 stages. Stage 1: providing general information about the operation to be carried out as well as video playback through a notebook. Stage 2: after being discharged participants are invited to the operating room to be given an overview and explanation by the surgeon. Images of the operating room as well as instruments are also displayed on the notebook. Stage 3: this stage displays photos and leaflets regarding postoperative care. Stage 4: question and answer regarding the issue of the operation to be carried out. All stages are carried out within 30-45 minutes.	Participants in the control group were given routine care. However, because it was based on ethical principles, the control group was also given leaflets but shortly after being discharged from the hospital.	The results of data analysis showed that there was a statistically significant decrease in the level of anxiety in the intervention group because (STAI [p = 0.000]) with a comparison of the decrease in the mean preoperative score in the intervention group and the control group (M = 42.79 [intervention], M = 50.98 [control]). The results of this study indicate that the intervention by providing education through audiovisual media can reduce preoperative anxiety levels.

TABLE 2: Article Analysis.

No.	Title, Author	Quality Score	Study Design	Instrument measurement tools	Population	Group	Result	
4	Effects of Preoperative Virtual Reality Magnetic Resonance Imaging on Preoperative Anxiety in Patients Undergoing Arthroscopic Knee Surgery: A Randomized Controlled Study, Jae-Hyuk Yang, Jae Joon Ryu, Eunwoo Nam, Hee-Suk Lee, and Jin Kyu Lee (8).	10/13 (76%)	Randomized Controlled Study.	APAIS (The Amsterdam Preoperative Anxiety and Infarction Scale)	Participants are patients who will undergo elective arthroscopic knee surgery under general anesthesia. A total of 48 patients were divided into two groups, the intervention group (n = 24) and the control group (n = 24).	Participants in the intervention group received treatment in the form of receiving preoperative information via VR which showed the participants' own MRI visualization in 3D. The screening was carried out 1 day before the operation was carried out.	Participants in the control group received only standard preoperative information.	This study showed that there was a statistically significant decrease in the level of anxiety, especially surgery-related anxiety and the components of combined anxiety in the intervention group (APAIS, Sum S [0.005] and Sum C [0.14]. The results of this study indicate that an intervention using VR that shows a 3D MRI replica can reduce preoperative anxiety levels.
5	Effects showing the operating room on preoperative anxiety and hemodynamics among patients with hypertension: A randomized controlled trial, Nureddin Yuzkat, Celaleddin Soyalt, Omer Turk, Siddik Keskin, and Nurcin Gulhas (19).	9/13 (69%)	Randomized Controlled Trial.	STAI (State Trait Anxiety Inventory)	Participants were patients aged between 35-80 years who had been diagnosed with hypertension. A total of 90 patients were divided into two groups, the intervention group (n = 45) and the control group (n = 45).	Participants in this group were given an intervention by visually displaying the operating room the day before the operation. Patients are also given information about the anesthetic procedure. After the procedure was completed, the patient was allowed to ask questions.	Participants in the control group were only provided with detailed information about the anesthetic procedure.	It was found that there was a statistically significant decrease in anxiety levels in the intervention group (STAI [p = 0.001] with a comparison of the decrease in mean scores in the intervention group and the control group (M = 43.2 [intervention], M = 49.8 [control]). The results of this study indicate that the intervention by showing the operating room before the operation is carried out can reduce the level of preoperative anxiety.
6	Guided imagery relaxation therapy on preoperative anxiety: a randomized clinical trial, Mária Marques dos Santos Felix, Maria Beatriz Guimarães Ferreira, Lucas Felix de Oliveira, Elizabeth Barichello, Patricia da Silva Pires, Maria Helena Barbosa (20).	11/13 (84%)	Triple-blind, Parallel, Randomized Clinical Trial.	STAI (State Trait Anxiety Inventory)	Participants are patients aged 18 years or older who will undergo bariatric surgery with videolaparoscopy. A total of 24 patients were divided into two groups, the intervention group (n = 12) and the control group (n = 12).	Participants in this group were given intervention or treatment in the form of guided imagery therapy using a headset and an MP3 player for 20 minutes.	Participants in the control group were only given standard care in the form of bed rest and using earphones connected to an MP3 player for 20 minutes.	The results of this study showed a statistically significant reduction in anxiety levels in the intervention group (STAI [p = 0.005]) with a mean decrease in the intervention group (M = 47.50 to 43.00). The results of this study indicate that intervention using guided imagery therapy for 20 minutes can reduce preoperative anxiety levels.
7	Music listening for anxiety relief in children in the preoperative period: a randomized clinical trial, Mariana André Honorato Franzoi, Cristina Bretas Goulart, Elizabete Oliveira Lara, Gisele Martins (21).	11/13 (84%)	Experimental, Double-blind, Parallel Group, Randomized Controlled Clinical Trial.	m-YPAS (modified Yale Preoperative Anxiety Scale)	Participants are pre-school children (3 - 12 years) who will undergo surgery. A total of 52 patients were divided into two groups, the intervention group (n = 26) and the control group (n = 26).	Participants in this group were given an intervention in the form of listening to music that had been previously provided by the researcher. The researcher provided 4 songs that the participants could choose from. Music is played using MP3 which has been cleaned using 70% alcohol for 15 minutes.	Participants in the control group were only given conventional care in the form of providing some toys and television as well as the presence of their family and other children who were waiting for surgery.	After study and analysis, this study showed a statistically significant reduction in anxiety levels in the intervention group (m-YPAS [p = 0.0132]) with a decrease in the mean in the intervention group (M = 40.77 to 28.26). The results of this study indicate that the intervention using music therapy for 15 minutes can reduce preoperative anxiety levels.

TABLE 2: Article Analysis.

No.	Title, Author	Quality Score	Study Design	Instrument measurement tools	Population	Group	Result	
8	<i>The effect of interactive games compared to painting on preoperative anxiety in Iranian children: A randomized clinical trial.</i> Nasrin Forouzandeh, Fatemeh Drees, Marzieh Forouzandeh, Somayeh Darakhshandeh (22).	9/13 (69%)	Randomized Clinical Trial.	m-YPAS (modified Yale Preoperative Anxiety Scale)	Participants are children aged 3 to 12 years who will undergo elective surgery procedures. A total of 172 patients were divided into three groups, the interactive game group (n = 64), the painting group (n = 55), and the control group (n = 53).	Interactive game group: participants in this group were given intervention in the form of games using Play Dough and using blocks and puzzles. The game is carried out in the playroom and participants are made into groups of 3-4 people. In this intervention also accompanied by one parent in each group. This intervention is performed 20-30 minutes before the operation begins. Painting group: this group is given an action in the form of painting and coloring according to what the participants want. Participants were given painting tools (A4 paper, pencils, erasers, and colored pencils). The time given is 20-30 minutes before the operation starts.	Participants in this group only underwent routine health care	The results of statistical analysis in this study showed a statistically significant decrease in the level of anxiety in the intervention group (interactive games [mYPAS p = 0.001], painting [mYPAS p = 0.001]). Although both interventions showed specific results in reducing anxiety levels in preoperative patients, the painting group had a significantly lower mean anxiety score when compared to the interactive group (mean total = 8.56 ± 16.69). The results of this study indicate that intervention using interactive game therapy and especially art therapy in the form of painting can reduce preoperative anxiety levels.
9	<i>Effect of mirroring display of virtual reality tour of the operating theatre on preoperative anxiety: A randomized controlled trial.</i> Jin-Woo Park, Francis Sahngun Nahm, Jin-Hee Kim, Young-Tae Jeon, Jung-Hee Ryu, and Sung-Hee Han (23).	11/13 (84%)	Prospective, Randomized and Controlled Clinical Trial.	m-YPAS (modified Yale Preoperative Anxiety Scale)	Participants in this study were pediatric patients with an age range of 4 to 10 years who would undergo elective surgery and general anesthesia. A total of 80 patients were divided into two groups, the intervention group (n = 40) and the control group (n = 40).	Participants in this group in the journal is called the mirroring group. This is in line with the intervention provided that the patient is given a virtual video tour using a smartphone and VR device that is connected to HDMI and then displayed on a monitor. This is done so that parents can see the same thing as what children see on VR devices. The video duration is 4 minutes and is given 1 hour before the operation starts.	The control group only received a virtual video tour using a smartphone as well as a VR device.	After the intervention was completed, there was a statistically significant decrease in the level of anxiety in the intervention group (m-YPAS [p = 0.025], with a decrease in the mean in the intervention group (M = 32.5 to 28.3]). The results of this study indicate that intervention using virtual therapy using VR which shows a tour of the operating room and preoperative anesthesia education using cartoon characters can reduce preoperative anxiety levels.
10	<i>The Effect of Giving Murotal Al-Quran Therapy to Reducing Anxiety Levels for Preoperative Sectio Caesaria Mothers at Grand Medistra Hospital Lubuk Pakam.</i> (24).	5/9 (55%)	Quasi-experimental, one group pre and post test.	-	Participants in this study amounted to 22 patients who were mothers of preoperative sectio caesarea at Grand Medistra Lubuk Pakam Hospital.	Participants were given therapy in the form of murotal Al-Qur'an.	There is no control group in this study.	The results of this study indicate that there is a statistically significant decrease in the level of anxiety after the intervention (p = 0.000) with an average decrease of (M = 42.59 to 15.23). The results of this study indicate that intervention using murattal Al-Qur'an therapy can reduce preoperative anxiety levels.
11	<i>Guide Imagery Therapy for Anxiety Reduction in Preoperative Sectio Caesarea.</i> (25).	7/9 (77%)	Quasi-experimental, one group pre and post test.	-	Participants in this study were 26 patients who were preoperative sectio caesarea patients at PKU Muhammadiyah Hospital Karanganyar.	Participants were given therapy in the form of guided imagery therapy. Participants were asked to close their eyes, inhale slowly, imagine beautiful things, and exhale slowly at the end of the session.	There was no control group in this study.	The results of the data processing showed that there was a statistically significant decrease in the level of anxiety after the intervention (p = 0.000) with an average decrease of (M = 20.22 to 14.55). The results of this study indicate that intervention using guided imagery therapy can reduce preoperative anxiety levels.

TABLE 2: Article Analysis.

No.	Title, Author	Quality Score	Study Design	Instrument measurement tools	Population	Group	Result
12	Music Therapy and Anxiety Levels Preoperative Patients (26)	8/9 (88%)	Quasi-experimental, pre and post test with control group.	-	The participants of this study were 50 patients who were patients in the Surgical Ward, Panembahan Senopati Room, Bantul Yogyakarta. Patients were divided into 2 groups, intervention group (n=25) and control group (n=25).	Participants were given therapy in the form of music therapy. Music that can be chosen includes classical, new age, and chilled pop.	The control group was only given routine care. The results of statistical analysis in this study showed a statistically significant decrease in the level of anxiety in the intervention group (p = 0.002) with an average decrease in the intervention group (M = 21.44 to 15.92). The results of this study indicate that intervention using music therapy can reduce preoperative anxiety levels.

patient have shown a significant reduction in anxiety levels after visual imagery therapy in pre-operative patients.

4.3. Mind-Body Therapy Approach Intervention: Music Therapy

Music therapy produces a distraction to a person's aversive condition so that it can change the person's focus from something that has a negative connotation and tends to be unpleasant to something positive and pleasant. This situation reduces unpleasant emotional states such as fear and anxiety (30). Interventions with music have also been shown to improve affective states, reduce depressed behavior, increase cost effectiveness, and reduce a person's level of anxiety (15).

Articles that have been analyzed show the results of a significant reduction in anxiety levels after music therapy in pre-operative patients. This is in line with several previous studies that have shown the effectiveness of music therapy in reducing anxiety levels (30,31).

4.4. Mind-Body Therapy Approach Intervention: Art Therapy

Art therapy is designed to express one's feelings, especially children, which cannot be expressed directly through behavior and words such as worries and fears about health procedures because the vocabulary that children have is not too much (32,33). The expression is channeled freely through the lines and colors contained in the art.

Art therapy provides a path between the world of line and color and reality that allows individuals to express their feelings without external pressure and threats. This allows an individual to overcome behavioral problems, reduce stress to anxiety experienced (22). Previous research conducted by (32) and (33), as well as the articles analyzed

TABLE 3: types of mind body therapy, types of surgery, and significance value.

Mind-Body Therapy Approach Intervention: Guided Imagery				
Article number	Media	Duration	Participant	P-Value
6	MP3	20 minute	Bariatric preoperative patient with videolaparoscopy	$p = 0.005$
11	Researcher guides	-	Pre-operative cesarean section patient	$p = 0.000$
Mind-Body Therapy Approach Intervention: Visual Imagery				
Article number	Media	Duration	Participant	P-Value
2	VR (<i>virtual reality</i>)	5 minute	Patients preoperative elective craniotomy or spine surgery	$p = <0.001$
3	The researcher shows the operating room	30 – 45 minute	Laparoscopic cholecystectomy preoperative patient under general anesthesia	$p = 0.000$
4	VR (<i>virtual reality</i>)	1 day before surgery	Elective arthroscopic knee preoperative patient under general anesthesia	$p = \text{Sum S dan Sum C} [0.005] [0.014]$
5	The researcher shows the operating room before the procedure	1 day before surgery	Pre-operative patient with a diagnosis of hypertension	$p = 0.001$
9	VR (<i>virtual reality</i>)	4 minutes to 1 hour before surgery	Pre-operative patients with elective surgery and general anesthesia	$p = 0.025$
Mind-Body Therapy Approach Intervention: Music Therapy				
Article number	Media	Duration	Participant	P-Value
1	Participants choose the music they like	15 minute	Pre-operative patient in surgical outpatient	$p = 0,001$
7	2 Brazilian children's songs and 2 American folk songs	15 minute	Pre-operative elective surgery patients	$p = 0.0132$
10	Al-Qur'an	not explained	Pre-operative cesarean section patient	$p = 0.000$
12	Classical, new age and chilled pop music	not explained	Pre-operative cesarean section patient	$p = 0.002$
Mind-Body Therapy Approach Intervention: Art Therapy				
Article number	Media	Duration	Participant	P-Value
8	Draw	20 – 30 menit	Pre-operative elective surgery patients	$p = 0.001$

showed the effectiveness of art therapy in reducing anxiety levels, especially in the pediatric population.

5. CONCLUSION

Based on data analysis that has been carried out on 12 articles that discuss the effectiveness of complementary therapy with a ²mind-body therapy approach to reducing anxiety levels in pre-operative patients, it can be concluded that complementary therapy with a mind-body therapy approach, especially guided imagery, visual imagery therapy, music, and art can effectively reduce anxiety levels in pre-operative patients.

Guided imagery therapy is considered effective if it is carried out using direct guidance from nurses or using audio for a duration of 20 minutes. Visual imagery therapy using Virtual Reality (VR) media or showing the operating room directly with a duration of 5 to 45 minutes before surgery is considered effective in reducing the anxiety level of pre-operative patients.

The provision of music therapy for 15 minutes is effectively given according to the type of music that has been adjusted previously. Art therapy effectively reduces anxiety levels in pre-operative patients, especially in children with a duration of 20 to 30 minutes. Besides being effective, these therapies can also be applied by nurses to all age ranges and do not require expensive operational costs.

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