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Effectiveness of Finger Hand Relaxation and Progressive Muscle Relaxation Techniques on Anxiety in Pre-Operative Sectio Caesarea Patients

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ABSTRACT

Background: Anxiety is a common thing that occurs in patients who will undergo surgery. The anxiety that occurs in preoperative patients can be felt from the time they are scheduled for surgery until the time of surgery arrives. Anxiety management can be done using pharmacological and non-pharmacological therapy.
Purpose: The aim of this research is to analyze the effectiveness of finger grip relaxation techniques and progressive muscle relaxation on anxiety in pre-caesarean section surgery patients in the Kediri Regency Regional General Hospital.
Method: This study used a Quasy-experiment With Pretest Posttest to determine the effect of finger grip and progressive muscle relaxation techniques. The sample selection in this study used a purposive sampling technique and a total of 56 patients were obtained who were divided into 2 groups, namely the finger grip intervention group and the progressive muscle intervention group. The pretest and posttest data for each group were then analyzed using the Wilcoxon Test to determine the effect and the Mann-Whitney Test to compare the posttest results of the 2 groups.
Results: The results of the study showed that the Wilcoxon test in both intervention groups obtained a p-value < α (0.05), which means that before and after the intervention, both progressive muscle relaxation and finger grip relaxation had an influence on the anxiety level of pre-caesarean section patients. For the results of the Mann-Whitney test, the p-value was 0.063 or p-value > α (0.05), which means there was no significant difference between changes in anxiety whether those given progressive muscle relaxation intervention or finger grip relaxation.
Conclusion: Finger grip relaxation techniques and progressive muscle relaxation techniques are both effective in reducing anxiety levels in pre-caesarean section surgery patients. So this non-pharmacological therapy can be an option for patients in dealing with anxiety problems before caesarean section surgery.

Keywords: anxiety, preoperative, relaxation and sectio

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BACKGROUND

Surgery is an invasive medical procedure for the diagnosis or treatment of disease, trauma or deformity (PP HIPKABI, 2014). Sectio Caesarea according to Liu (2008), is a surgical procedure for delivering a fetus with an incision through the abdomen and uterus. Sectio Caesarea is performed with the uterine nerves intact and weighing more than 500 grams (Mitayani, 2009). The preoperative phase is the time from when the decision to operate is made until it reaches the surgical table, regardless of surgical history or classification (Muttaqin & Sari, 2013). Pre-operation requires preparation including physical, psychological, spiritual (Talindong & Minarsih, 2020) and emotional (Rejeki et al., 2022) by the patient who will undergo surgery. Surgery or surgery is an experience that can cause anxiety (Agustina & Hasanah, 2018).

Anxiety is a common thing that occurs in patients who will undergo surgery (Rismawan, 2019). Anxiety that occurs in preoperative patients can be felt from the time they are scheduled for surgery until the time of surgery arrives (Nababan, 2023). Factors that can cause anxiety in preoperative patients are fear of pain, death, fear of unknown disease, fear of deformity and other threats to body image (Widyastuti, 2022). In Indonesia, the prevalence of anxiety is estimated at 9% -21% of the general population, while the population of preoperative patients who experience anxiety is 80% (Rihiantoro et al, 2019). In the research journal Pawatte, Pali, & Opod (2013), the results of research regarding the description of anxiety levels in pre-cesarean section mothers in two hospitals showed differences, namely in RSUP. Prof. Dr. R. D. Kandaou of 15 respondents only had mild anxiety as much as 40%, moderate category as much as 26.7% and did not feel anxious as much as 33.3%. Meanwhile, at RSIA Kasih Ibu, 15 respondents had mild anxiety, namely 6.7% and the remaining 93.3% did not feel anxious.

Rothrock stated that anxiety can cause physical and psychological changes (Oteri et al., 2021) which ultimately activate the sympathetic autonomic nerves, thereby increasing heart rate, increasing blood pressure, increasing respiratory frequency, and generally reducing energy levels in the patient, and ultimately can be detrimental to the individual himself (Mutaqqin & Sari , 2013). Hughes in (Pefbrianti et al., 2018) stated that the anxiety felt before surgery also influences the success of the surgery and can pose a risk of producing post-operative complications. Preoperative anxiety can increase cortisol which can inhibit surgical wound healing. Apart from that (Abadi et al., 2018) states that by stimulating the sympathetic nervous system, anxiety causes tachycardia (Zamahsari, 2023), increased blood pressure (Pratiwi & Edmaningsih, 2020), arterial blood vessels contract, decreased blood circulation to the wound, and decreased tissue partial pressure. Physiologically, anxiety can cause autonomic dysfunction and can affect inflammatory responses, platelet activity, and immunological function.

OBJECTIVE

This research was conducted to determine the effectiveness of the finger grip relaxation technique with progressive muscle relaxation on anxiety in pre-caesarean section surgery patients at the Kediri District Hospital.

METHOD

This research is a "Quasy-experiment With Pretest Posttest Design" This design aims to determine the effectiveness of the finger grip relaxation technique with progressive muscle relaxation on anxiety in pre-cesarean section patients at the Kediri District Hospital.

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RESULTS

Respondent Characteristics

According to the planned sample, 56 respondents were obtained from preoperative caesarean section patients who were divided into two groups, each consisting of 28 respondents. Respondents in this study had several characteristics, including age, education and previous surgical history obtained through interviews.

The characteristics of pre-caesarean section respondents based on age were mostly early adulthood or 26 - 35 years old, both in group 1 (71.4%) and group 2 (64.3%), as well as a small percentage (3, 6%) are in late adulthood or 36 – 45 years. In terms of characteristics based on education, the results showed that most (57.1%) had a high school education and almost half (42.9%) had a bachelor's degree. Meanwhile, regarding the characteristics of surgical history, the majority in group 1 (75%) and group 2 (64.3%) said they had never had surgery before, and a small percentage (3.6%) had had 2 previous operations.

Level of Anxiety in the Group 1 (progressive muscle intervention)

The results of the patient's anxiety level before caesarean section surgery were obtained from a questionnaire using the APAIS anxiety assessment which was assessed before and after the intervention in each intervention group.

The results obtained in group 1 before progressive muscle intervention were carried out, almost all (82.1%) experienced severe anxiety and a small portion (17.9%) experienced moderate anxiety. Meanwhile, after progressive muscle intervention was carried out, the results showed that almost all (82.1%) experienced moderate anxiety and a small percentage (3.6%) experienced severe anxiety.

Level of Anxiety in the Group 2 (Finger Grip Relaxation Intervention)

Frequency Distribution of Anxiety Levels of Preoperative Sectio Caesarea Patients in Group 2 Before and After Finger Holding Relaxation Intervention in the Teratai Room at Kediri District Hospital on 1 December 2023 - 31 December 2023

The preoperative anxiety level of patients in group 2 before the finger grip relaxation intervention was carried out, it was found that most (64.3%) experienced severe anxiety and almost half (35.7%) experienced moderate anxiety. Meanwhile, after the finger grip relaxation intervention, the majority (60.7%) experienced moderate anxiety and almost half (39.3%) experienced mild anxiety.

Effectiveness of Finger Grip Relaxation Techniques and Progressive Muscle Relaxation on Anxiety in Preoperative Sectio Caesarea Patients at Kediri District Hospital

Based on the Wilcoxon test, in both intervention groups, the p-value was $< \alpha$ 0.05, which means that the anxiety of pre-Caesarean section surgery patients before and after the intervention was carried out was different, so that both interventions had an influence on the anxiety level of pre-Caesarean section surgery patients.

For the results of the Mann-Whitney test, the p-value was 0.063 or $> \alpha$ 0.05, which means there was no significant difference between changes in anxiety whether given progressive muscle relaxation intervention or finger grip relaxation

DISCUSSION

Identifying the Effect of Progressive Muscle Relaxation Intervention on Anxiety in Preoperative Sectio Caesarea Patients at Kediri District Hospital

Based on table 4.2, the results obtained before progressive muscle intervention were carried out, almost all (82.1%) experienced severe anxiety and a small percentage (17.9%) experienced moderate anxiety. Meanwhile, after progressive muscle intervention was carried out, the results showed that almost all (82.1%) experienced moderate anxiety and a small

percentage experienced severe anxiety (3.6%) and mild anxiety (14.3%). Then in table 4.5 it is known that in the Wilcoxon test the progressive muscle relaxation intervention group got a Z value of -4.663b. The Z value obtained from the Wilcoxon test is negative, which means that anxiety before and after intervention in pre-cesarean section patients has decreased. Meanwhile, from the Wilcoxon test, the results obtained were p-value = 0.00 or p-value < α 0.05, which means that H1 was accepted, namely that progressive muscle relaxation intervention had an influence on anxiety in pre-caesarean section patients.

Anxiety can be reduced with pharmacological and non-pharmacological therapy. Non-pharmacological methods are safe and without side effects in most cases. Many of these methods are part of complementary medicine (Harorani et al, 2020). Progressive muscle relaxation is a non-pharmacological and complementary method that is often applied to reduce anxiety (Alvionita et al., 2022). Muscle relaxation exercises involve tension and relaxation regularly and consistently until relaxation occurs throughout the body (Inangil et al, 2020). The purpose of this exercise is to feel the difference between tension and relaxation in the body and to teach someone to be able to relax independently (Ozamiz-Etxebarria et al, 2020).

In this study, progressive muscle relaxation was used to reduce anxiety, because it can suppress the sympathetic nerves which can reciprocally suppress the feeling of tension experienced by the individual, resulting in counter conditioning (elimination). This is in line with research conducted by Rihiantoro et al (2018), the results obtained showed that there were differences before and after progressive muscle relaxation therapy. This means that progressive muscle relaxation therapy has an effect on reducing preoperative patient anxiety. Susanti (2023) in her research also stated that there was a decrease in the anxiety level in patients preoperatively with maxillary bone tumors after progressive muscle relaxation intervention. The results of research conducted by Febristi et al (2022) also support that progressive muscle relaxation therapy can reduce anxiety in preoperative patients under general anesthesia.

Progressive muscle relaxation goes hand in hand with the autonomic response of the parasympathetic nerves. The parasympathetic nervous system controls activities that occur during calming of the body, for example decreasing heart rate after the tension phase and increasing blood flow to the gastrointestinal system (Rihiantoro et al, 2018). Positive perceptions obtained during the intervention are transmitted in the limbic system and cerebral cortex with a complex level of connectivity between the brainstem so that positive perceptions received in the limbic system will cause the amygdala to send information to the LC (locus coeruleus) to activate autonomic nervous reactions (Trisetyaningsih et al, 2018). So this situation will reduce all manifestations of anxiety disorders.

In this study, it was found that other factors such as age, education, and surgical history also influenced the patient's anxiety level. In the progressive muscle relaxation intervention group, those who had had previous surgery had moderate levels of anxiety compared to those who had never had previous surgery. When giving a series of interventions starting from muscle relaxation, breathing relaxation, mind relaxation and planting positive sentences which are carried out regularly and with concentration, it will cause a relaxed condition in the body so that the body responds to releasing endorphins which make the mother relax and reduce feelings of anxiety, especially when the brain reaches alpha waves or at rest. In this condition, the body releases the hormones serotonin and endorphins so that humans are relaxed without tension and anxiety. The interventions provided can also be accepted by patients regardless of age and education factors. So progressive muscle relaxation intervention is the intervention of choice that is very helpful in reducing anxiety.

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The results from table 4.3 show that before the finger grip relaxation intervention was carried out, the majority (64.3%) experienced severe anxiety and almost half (35.7%) experienced moderate anxiety. Then, after the finger grip relaxation intervention was carried out, the results showed that the majority (60.7%) experienced moderate anxiety and almost half (39.3%) experienced mild anxiety. Meanwhile, the results of the Wilcoxon Test in table 4.5 show that the finger grip relaxation intervention group got a Z value of -4.646b. The Z value obtained from the Wilcoxon test is negative, which means that anxiety before and after intervention in pre-caesarean section patients has decreased. Meanwhile, from the Wilcoxon test, the results obtained were p-value = 0.00 or p-value < α 0.05, which means that H1 was accepted, namely that finger-hold relaxation intervention had an influence on anxiety in pre-caesarean section patients.

Apart from progressive muscle relaxation, finger grip relaxation intervention is also a complementary therapy option to reduce anxiety levels in pre-operative patients, especially caesarean section. The finger hold relaxation technique is a relaxation technique that is very easy and simple to do by anyone who is concerned with the fingers and the flow of energy in the body (Shifa et al, 2023). Finger grip therapy aims to reduce pain, fear and anxiety, reduce feelings of panic, worry and threat, provide a comfortable feeling to the body, calm the mind and control emotions and improve blood flow (Salsabilla et al, 2023).

Several studies have proven that finger grip relaxation is an effective intervention in reducing anxiety. Research conducted by Sari and Norhapifah (2022) showed that after administering finger grip relaxation, most respondents experienced mild anxiety and the Wilcoxon test results showed that there was an influence of finger grip relaxation on preoperative patient anxiety. This is also supported by Yulianti & Hidayah (2023) that there is an influence of the finger grip relaxation technique on the anxiety level of preoperative appendicitis patients at the Sekarwangi Sukabumi Regional Hospital with a p-value of 0.001, therefore < 0.05, which means H0 is rejected.

According to Shifa et al (2023), holding your fingers by taking a deep breath can reduce physical and emotional tension, because holding your fingers can warm the entry points of energy pathways/meridians with organs in the body located on the fingers. Reflection points on the hands give impulses spontaneously when gripping, these impulses or stimuli will channel shock waves to the brain which are then processed and transmitted to the nerves in the body organs that are experiencing problems so that obstacles in the energy path become smooth. Sari & Norhapifah (2022) when pressure is applied while relaxing the finger grip, then the descending nerve receptors send the stimulus to the hypothalamus and it is transmitted to the pons, then continues to the gray part of the midbrain (periaqueductus), the stimulation received by the periaqueductus is conveyed to the hypothalamus, then the hypothalamus stimulates the pituitary gland to release endorphin hormones. Endorphin hormones restore emotions which will make the body relax. When the body is relaxed, muscle tension is reduced which will then reduce anxiety.

In intervention group 2, it was also found that 9 respondents had previously undergone surgery once and 1 respondent had a history of 2 operations. This number was greater than in intervention group 1, so that many patients experienced a reduction in anxiety to a mild level. Patients also feel that holding fingers is a fairly effective method and can be practiced at any time with the help of people close to them such as their husbands, which of course also has a big influence in reducing the patient's anxiety before caesarean section surgery.

Effectiveness of Finger Grip Relaxation Techniques and Progressive Muscle Relaxation on Anxiety in Preoperative Sectio Caesarea Patients at Kediri District Hospital

The results of the study showed that providing progressive muscle relaxation intervention and finger grip relaxation had an effect on anxiety in pre-caesarean section patients. To find out which interventions are more effective in reducing anxiety, researchers tested the data obtained after the respondents underwent the intervention using the Mann-Whitney test. The Mann-Whitney test results in table 4.5 show that the p-value = 0.063 or equal to > α 0.05, which means H0 is accepted and H1 is rejected. This shows that there is no significant difference between the two interventions that have been carried out, so that both interventions are equally effective for anxiety in pre-cesarean section patients.

Anxiety is a common thing that occurs in patients who will undergo surgery. Anxiety that occurs in preoperative patients can be felt from the time they are scheduled for surgery until the time of surgery arrives (Poorolajal et al., 2018). Factors that can cause anxiety in preoperative patients are fear of pain, death, fear of unknown disease, fear of deformity and other threats to body image (Muttaqin & Sari, 2013). Preoperative anxiety is often described as an uncomfortable, tense and unpleasant mood before surgery, an emotional response to a potential challenge or threat to reality and has major complications by stimulating the sympathetic nervous system, causing tachycardia, increased blood pressure, and contraction of arteries, decreased blood circulation to wounds, decreased tissue partial pressure, chronic pain, and depression (Ferede, et al., 2022).

The level of anxiety in this study showed that almost all respondents experienced severe anxiety and the majority experienced moderate anxiety. Some of the respondents who experienced severe anxiety had never previously undergone surgery and were aged between 26 - 35 years. This is in line with research conducted by (Abiyoga & Safitri, 2021) that the history of surgery influences the patient's anxiety level before surgery. Patients who have never had surgery or have had a bad experience with previous surgery tend to have higher levels of anxiety. The factors of age and education also have quite an influence on the level of anxiety because they are related to experience and how the patient accepts the information obtained regarding the operation that will be carried out so that action is needed to overcome the problem of anxiety.

Anxiety management can be done using pharmacological and non-pharmacological therapy. Nursing action is needed to overcome the anxiety experienced by patient pre-caesarean section surgery so that they can and are able to manage their stress, one of which is in the form of non-pharmacological therapy. Overcoming anxiety can be done in various ways in the form of therapeutic communication, relaxation techniques, distraction, hypnotherapy and spiritual activities (Maisa et al, 2022). Relaxation techniques are one of the non-pharmacological methods that are widely used to treat psychological disorders such as anxiety (Rihiantoro et al., 2018). There are several relaxation techniques that can be used to overcome anxiety, such as progressive muscle relaxation technique, autogenic relaxation, five finger relaxation technique, music therapy, aroma therapy and finger hold relaxation technique (Yulianti & Hidayah, 2023).

In this study, the relaxation techniques used were progressive muscle relaxation and finger grip relaxation. The results showed there was no significant difference between the two interventions. Previous research has not discussed the comparison or effectiveness of progressive muscle relaxation and finger grip relaxation in reducing preoperative patient anxiety. Research conducted by Fauziah (2020) shows that there is no significant difference between progressive muscle relaxation interventions and finger grip relaxation, so there is no reference for which intervention is more effective. This is also in line with research

conducted by Nurlatifah (2019) which compared finger grip relaxation with deep breathing relaxation, that there was an influence of finger grip relaxation and deep breath relaxation on reducing the anxiety level of pre-orthopedic surgery patients at Dr. Soedarso Pontianak and there was no difference between finger grip relaxation and deep breathing relaxation in reducing the anxiety level of pre-orthopedic surgery patients at Dr. Soedarso Pontianak.

The absence of differences in the two interventions carried out proves that both interventions are equally effective in reducing the anxiety level of preoperative caesarean section patients. According to researchers, there are no significant factors that can influence the intervention process with relaxation techniques other than comfort and calm. Respondents can easily follow instructions and are cooperative during the action. It's just that intervention can be optimally successful in cases of mild to severe anxiety, but in cases of very severe anxiety or panic, pharmacological therapy is more helpful than non-pharmacological because the patient will find it difficult to cooperate. Therapeutic communication is also needed to optimize the results of progressive muscle relaxation and finger grip relaxation interventions. With therapeutic communication, the patient will feel calmer and more comfortable so that the tension within the patient will be reduced.

Even though there was no significant difference between the two interventions, it was seen that during the research process, the decrease in anxiety was experienced more by patients who were given the finger grasp intervention. Some patients say that finger grip relaxation is morecomfortable and easy to do anytime and anywhere. Finger grip relaxation can also be done with the help of someone close to you, such as the husband, which of course can increase the patient's comfort before caesarean section surgery, because the husband's support during the birth process and the operative procedure has influenced the patient's anxiety level. Therefore, the researchers concluded that progressive muscle relaxation interventions and finger grip relaxation interventions are both effective in reducing anxiety, but it also depends on each patient which relaxation action is most comfortable to carry out, so that the interventions carried out can more optimally reduce pre-existing anxiety. surgery, especially caesarean section.

CONCLUSION

The results show that before the progressive muscle intervention, almost all (82.1%) experienced severe anxiety and a small portion (17.9%) experienced moderate anxiety, whereas after the progressive muscle intervention, almost all (82.1%) experienced results. experienced moderate anxiety and a small portion experienced severe anxiety (3.6%) and mild anxiety (14.3%). The results of the study showed that before the finger-hold relaxation intervention was carried out, the majority (64.3%) experienced severe anxiety and almost half (35.7%) experienced moderate anxiety, then after the finger-hold relaxation intervention was carried out the results were mostly (60.7%) %) experienced moderate anxiety and almost half (39.3%) experienced mild anxiety. Statistical tests using the Wilcoxon test in both intervention groups obtained a p-value < α (0.05), which means anxiety in pre-cesarean section patients before and after the intervention, both progressive muscle relaxation and finger grip relaxation has no difference, so both interventions have an influence on the anxiety level of patient pre-caesarean section surgery. For the results of the Mann-Whitney test, a p-value of 0.063 or p-value > α (0.05) was obtained, which means that there was no significant difference between changes in anxiety whether those given progressive muscle relaxation intervention or finger grip relaxation.

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