



Hippocratica: Journal of Modern Medicine and Healthcare Practice

Vol 1 No 2 June 2026, Hal 279-290

ISSN: 3125-1501 (Print) ISSN: 3125-1498 (Electronic)

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The Effect of Finger-Gripping Relaxation on Anxiety Levels in Preoperative Patients

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Article Info :

Received:

07-06-2026

Revised:

22-06-2026

Accepted:

29-06-2026

Abstract

Preoperative anxiety is a common psychological response to concerns about surgery, anesthesia, and possible complications. Finger-gripping relaxation is a simple non-pharmacological technique that may help reduce anxiety and promote psychological readiness before surgery. This study aimed to determine the effect of finger-gripping relaxation on anxiety levels among preoperative patients at RSUD Limpung. A descriptive case study with a one-group pretest-posttest design was conducted involving five preoperative patients. Anxiety was assessed using the Amsterdam Preoperative Anxiety and Information Scale (APAIS) before and after finger-gripping relaxation, administered once daily for approximately 15 minutes over two consecutive days. Data were collected through interviews, observations, physical assessments, questionnaires, and documentation. Before the intervention, one respondent (20%) experienced severe anxiety and four (80%) experienced moderate anxiety, with a mean APAIS score of 17.2. After the intervention, four respondents (80%) experienced mild anxiety and one (20%) experienced moderate anxiety, with the mean score decreasing to 14.2. All respondents showed decreased APAIS scores, with a mean reduction of 3.0 points. These findings indicate that finger-gripping relaxation was associated with reduced preoperative anxiety and may serve as a practical complementary nursing intervention. Further studies with larger samples and control groups are needed.

Keywords: Anxiety, Finger-Gripping Relaxation, Nursing Intervention, Preoperative Patients, Relaxation Therapy.



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INTRODUCTION

Surgical procedures constitute major medical interventions that expose patients to physical and psychological stress because they involve invasive manipulation of body tissues, disruption of bodily integrity, and uncertainty regarding treatment outcomes. The number of patients undergoing surgical procedures has continued to increase across healthcare settings, with data cited from the World Health Organization indicating approximately 140 million surgical patients worldwide in 2021 and an increase to approximately 148 million in 2022 (Setiani et al., 2020). Preoperative anxiety is consequently a common psychological response among patients awaiting surgery, with fear of anesthesia, surgical procedures, pain, complications, death, and uncertainty about treatment outcomes representing important sources of distress (Elpiyanti & Simatupang, 2024). The level of anxiety may also be influenced by patients' knowledge and understanding of the planned procedure, indicating that psychological responses before surgery emerge from an interaction between perceived threat and individual preparedness (Almar et al., 2024). Patients experiencing preoperative anxiety may present psychological manifestations such as fear, restlessness, withdrawal, crying, and difficulty concentrating, accompanied by physiological changes involving pulse rate, respiration, blood pressure, and muscular tension (Musyaffa et al., 2023). This condition places preoperative anxiety within an important area of modern perioperative care because adequate psychological preparation is required alongside physical preparation to support a safer and more comfortable surgical experience.

The clinical significance of preoperative anxiety extends beyond temporary emotional discomfort because excessive anxiety can influence physiological responses and potentially interfere with the perioperative process. Anxiety before surgery has been associated with increased pain, greater analgesic requirements, delayed recovery, prolonged hospitalization, and reduced satisfaction with the

perioperative experience (Nanda & Rosyid, 2024). The psychological condition of patients before anesthesia is also relevant because physiological instability associated with anxiety may affect the preparation and recovery process surrounding anesthesia (Sommeng, 2019). Previous research has therefore explored various approaches for controlling preoperative anxiety, including pharmacological therapy, psychological preparation, information provision, spiritual intervention, guided imagery, and relaxation techniques. Spiritual Emotional Freedom Technique, for example, has demonstrated significant potential for reducing anxiety among preoperative patients, although its implementation involves a therapeutic approach that differs from simple physical relaxation (Rejeki et al., 2022). Guided imagery has similarly been reported to reduce anxiety in preoperative patients, but its effectiveness depends on patients' ability to engage with imagery-based instructions and may therefore vary according to individual cognitive and psychological characteristics (Wahyuningsih & Agustin, 2020). Non-pharmacological relaxation techniques remain particularly relevant to nursing practice because they can provide patients with an accessible means of regulating anxiety without adding substantial pharmacological burden.

Among non-pharmacological approaches, finger-gripping relaxation has received attention because of its simple procedure, minimal resource requirements, and potential for independent or nurse-assisted application in the preoperative period. Finger-gripping relaxation is based on controlled physical engagement with the fingers that is intended to promote relaxation and reduce emotional tension, making it feasible for patients who are waiting in an inpatient setting before surgery. Evidence from preoperative patients undergoing cesarean section with spinal anesthesia demonstrated that finger-gripping relaxation was associated with a significant reduction in anxiety, with the statistical analysis showing a meaningful difference between anxiety levels before and after intervention (Salsabilla et al., 2023). Similar findings were reported among preoperative patients with appendicitis, supporting the potential applicability of the technique beyond a single surgical diagnosis (Yulianti & Hidayah, 2023). Research among pregnant women preparing for cesarean section has also indicated that finger-gripping therapy can influence preoperative anxiety, suggesting that tactile relaxation may provide a practical approach for patients facing substantial anticipatory stress (Sari & Norhapifah, 2022). Related studies have further demonstrated that finger-holding techniques can be beneficial for pain management, indicating that the intervention may have broader value within perioperative nursing care (Wati & Ernawati, 2020). These findings collectively suggest that finger-gripping relaxation has clinical potential, although the existing evidence requires more focused examination of its specific effect on anxiety in general preoperative populations.

The existing literature, however, presents several limitations that leave an important empirical gap concerning the independent contribution of finger-gripping relaxation to preoperative anxiety reduction. A substantial proportion of previous investigations has focused on specific patient groups, particularly women undergoing cesarean section, patients with appendicitis, or patients undergoing other selected surgical procedures, limiting the generalizability of findings to broader preoperative populations (Salsabilla et al., 2023). Other studies have examined finger-gripping techniques in combination with additional interventions, such as stress balls or spiritual approaches, which makes it difficult to distinguish the specific effect attributable to finger gripping itself (Setyoningsih, 2023). Research involving combinations of finger-gripping relaxation and muromtall therapy has also reported favorable physiological outcomes, but the combined design does not establish whether finger gripping alone would produce comparable effects (Oktafia et al., 2024). The literature on preoperative anxiety further demonstrates that family support and coping mechanisms contribute to patients' psychological responses, indicating that anxiety cannot be understood exclusively as a consequence of the surgical procedure (Katimenta et al., 2022; Simbolon & Simbolon, 2021). Information-based interventions have also been shown to influence anxiety, reinforcing the need to distinguish the effects of cognitive preparation from those of direct relaxation techniques (Nugroho et al., 2024). These methodological and conceptual limitations indicate a need for research that evaluates finger-gripping relaxation as a clearly defined intervention rather than embedding it within multiple therapeutic components.

The need for such research is particularly evident in the clinical context of RSUD Limbung, where the number of patients undergoing surgical procedures increased from 1,125 in 2023 to 1,284 in 2024 and 1,436 in 2025, indicating a progressively greater demand for effective perioperative preparation (RSUD Limbung, 2024). Preliminary observations and interviews conducted among preoperative patients identified recurrent concerns regarding surgical procedures, anesthesia,

postoperative pain, possible complications, and the possibility of disability, while several patients displayed restlessness, muscular tension, difficulty resting, repeated questioning, and physiological changes before surgery. Such findings are consistent with previous evidence that preoperative patients frequently experience clinically meaningful anxiety and require appropriate psychological preparation before entering the operating room (Ananda Putri, 2023). The problem is particularly relevant because anxiety may involve both psychological distress and physiological activation, making interventions that can simultaneously encourage emotional regulation and physical relaxation valuable within nursing practice. Finger-gripping relaxation offers a practical option because it does not require specialized equipment, medication, or extensive preparation, while previous evidence has indicated its potential to reduce anxiety in preoperative patients (Nanda & Rosyid, 2024). Its simplicity also allows the technique to be incorporated into routine nursing activities in inpatient wards without substantially disrupting established preoperative preparation. Evaluating this intervention within the RSUD Limpung setting is therefore scientifically and practically relevant for determining whether a brief, accessible, and focused relaxation technique can provide measurable benefits for patients experiencing anxiety before surgery.

The present study is positioned within perioperative nursing research by specifically examining finger-gripping relaxation as an independent non-pharmacological intervention for reducing anxiety among patients preparing for surgery. This position addresses the need for evidence concerning a simple intervention that can be applied directly within routine inpatient nursing care without dependence on specialized equipment or complex therapeutic procedures. The study focuses on preoperative patients at RSUD Limpung, a setting in which increasing surgical activity and preliminary clinical observations indicate the continued presence of anxiety as an important nursing problem. The research aims to determine the effect of finger-gripping relaxation on anxiety levels in preoperative patients. Theoretically, the findings are expected to strengthen the evidence base concerning tactile relaxation as a practical approach to psychological regulation during the preoperative period. Methodologically, the study provides a more focused assessment of finger-gripping relaxation by examining its relationship with changes in anxiety without combining the intervention with unrelated therapeutic modalities. Practically, the findings are expected to support nurses in implementing a simple, accessible, low-resource intervention as part of comprehensive psychological preparation for patients awaiting surgical procedures.

RESEARCH METHODS

This study employed an empirical descriptive design using a case-study approach with a one-group pretest–posttest design to examine changes in anxiety levels following finger-gripping relaxation among preoperative patients. The study was conducted in the inpatient ward of RSUD Limpung and involved five preoperative patients who met the predetermined eligibility criteria, with the small sample selected in accordance with the case-study orientation of the research. Inclusion criteria comprised patients scheduled for surgery, able to communicate effectively, willing to participate, and experiencing preoperative anxiety, whereas patients with communication difficulties, impaired consciousness, or conditions that prevented them from following the relaxation procedure were excluded. Data collection involved an initial assessment of anxiety before intervention, followed by the administration of finger-gripping relaxation once daily for two consecutive days, with each session lasting approximately 15 minutes, and a subsequent anxiety assessment after the intervention. The data were obtained through interviews, direct observation, physical assessment, questionnaire completion, and documentation of relevant patient conditions and intervention procedures, consistent with established approaches to nursing research and clinical assessment (Donsu, 2021). The pretest–posttest structure was selected because it enables the researcher to observe changes in the same participants before and after the intervention while maintaining the clinical focus of the case study (Riyanto & Hatmawan, 2020).

The primary research instrument was the Amsterdam Preoperative Anxiety and Information Scale (APAIS), which was administered before and after the intervention to quantify patients' preoperative anxiety and facilitate direct comparison of anxiety scores across measurement points. The collected data were analyzed descriptively by comparing individual and mean APAIS scores before and after finger-gripping relaxation, without applying inferential statistical testing because the study involved only five participants and was designed as a descriptive case study. The pre-intervention assessment showed one participant (20%) with severe anxiety and four participants (80%) with moderate anxiety, producing a mean APAIS score of 17.2, whereas the post-intervention assessment

showed four participants (80%) with mild anxiety and one participant (20%) with moderate anxiety, with the mean score decreasing to 14.2. The resulting mean reduction of three APAIS points was interpreted as an observed change in anxiety following the intervention rather than as definitive evidence of causal effectiveness, thereby maintaining methodological consistency with the descriptive design. The use of structured anxiety measurement and systematic comparison of pre-intervention and post-intervention conditions is consistent with previous nursing studies evaluating non-pharmacological interventions for preoperative anxiety (Abdurrohman et al., 2023). Ethical principles were maintained through informed consent, voluntary participation, confidentiality of participant information, respect for the participants' right to withdraw, and implementation of the intervention without replacing standard preoperative medical and nursing care, in accordance with ethical standards for nursing research (Donsu, 2021).

RESULTS AND DISCUSSION

Characteristics of Preoperative Patients in the Surgical Ward of RSUD Limbung

The characteristics of the five respondents provide an initial context for interpreting the anxiety levels observed before and after the finger-gripping relaxation intervention. The age distribution shows that two respondents (40%) were 20–25 years old, two respondents (40%) were 26–30 years old, and one respondent (20%) was 31–35 years old. Hence, 80% of respondents were within the 20–30-year age range, indicating that the sample was predominantly composed of relatively young adult patients. Age is relevant in preoperative care because patients at different stages of adulthood may differ in their experience, knowledge, coping resources, and perceptions of surgical procedures. Previous research has demonstrated that preoperative anxiety is influenced by individual characteristics and the patient's understanding of the surgical process, although the direction and magnitude of these relationships may vary across patient groups (Almar et al., 2024). The age composition in this study therefore provides an important descriptive context rather than evidence that younger age directly caused higher anxiety.

The distribution of respondents by education also demonstrates variation in their potential capacity to access and interpret information related to surgery and anesthesia. As presented in Table 1, two respondents (40%) had completed senior high school, while elementary school, junior high school, and higher education were each represented by one respondent (20%). This distribution indicates that the largest educational group was senior high school graduates, although the sample did not show a dominant educational level across all respondents. Education may contribute to how patients understand information concerning surgical procedures, risks, anesthesia, and postoperative expectations, which can subsequently shape their psychological responses before surgery (Almar et al., 2024). The complete distribution of age and education is presented below together with occupational characteristics.

Table 1. Characteristics of Respondents

Characteristics	Frequency (n)	Percentage (%)
Age		
20–25 years	2	40
26–30 years	2	40
31–35 years	1	20
Education		
Elementary School	1	20
Junior High School	1	20
Senior High School	2	40
Higher Education	1	20
Occupation		
Housewife	3	60
Private Employee	1	20
Entrepreneur	1	20
Total	5	100

The educational distribution in Table 1 is relevant because preoperative patients require information that can be understood regardless of their formal educational attainment. Patients with different educational backgrounds may interpret medical explanations differently, making clear communication an important component of preoperative nursing care. Research by Almar et al. (2024) identified a relationship between knowledge and anxiety among preoperative patients, supporting the importance of considering patients' informational conditions when interpreting psychological responses before surgery. Nevertheless, the present study does not provide sufficient evidence to establish an association between education and anxiety because each educational category contains only one or two respondents. The findings are therefore more appropriately interpreted as characteristics of the study participants that may contribute to differences in individual psychological responses. This distinction is important because descriptive characteristics should not be interpreted as causal determinants when the sample size and study design do not support such inference.

Occupational characteristics show that three respondents (60%) were housewives, while one respondent (20%) worked as a private employee and one respondent (20%) was an entrepreneur. The predominance of housewives is consistent with the fact that all respondents were women undergoing Sectio Caesarea, which constituted the clinical context of participant recruitment. This composition may have implications for the social environment surrounding the patients, particularly because family involvement and support can influence psychological responses during the preoperative period. Katimenta et al. (2022) reported an association between family support and anxiety among preoperative patients, while Damita and Logen (2023) similarly examined family support as a factor related to preoperative anxiety. These findings suggest that occupational status should not be considered in isolation because the psychological experience of surgery may also be shaped by interpersonal support, information received, and expectations concerning the procedure. In the present study, however, family support was not measured as an independent variable, so its possible contribution cannot be quantified.

The sex composition of the sample is also important for interpreting the characteristics of the respondents, although sex was not included as a separate category in Table 1. All five respondents were female because the participants were preoperative patients undergoing Sectio Caesarea, making the sample clinically specific to maternal surgical care. Studies involving preoperative Sectio Caesarea patients have similarly documented anxiety as an important psychological concern requiring nursing attention before surgery (Kristanti & Faidah, 2022; Salsabilla et al., 2023). The concentration of female respondents also means that the findings should not be generalized directly to male preoperative patients or to surgical populations with substantially different clinical characteristics. The combination of relatively young age, varied educational attainment, and predominantly housewife occupational status further indicates that the respondents represented a narrowly defined clinical group rather than a heterogeneous surgical population. Such sample characteristics are relevant when interpreting the subsequent changes in APAIS scores because individual differences may affect baseline anxiety and responsiveness to relaxation techniques.

Overall, the respondent characteristics indicate that the study involved five young-to-middle adult women with heterogeneous educational backgrounds and predominantly housewife occupational status. The largest age groups were 20–25 and 26–30 years, each accounting for 40%, while senior high school graduates represented the largest educational category at 40%. Housewives constituted 60% of the respondents, with private employees and entrepreneurs each accounting for 20%. These characteristics correspond with the specific clinical setting of Sectio Caesarea and provide a contextual basis for examining preoperative anxiety in this patient group. Previous studies have documented that anxiety is common among patients awaiting surgery, including women preparing for Sectio Caesarea, and that psychological and informational factors may influence its intensity (Musyaffa et al., 2023; Kristanti & Faidah, 2022). Given the very small sample, these characteristics are best understood as descriptive features of the participants and as contextual factors for interpreting the effectiveness pattern observed after finger-gripping relaxation.

Preoperative Anxiety Levels Before Finger-Gripping Relaxation

The baseline measurement showed that all five respondents experienced preoperative anxiety before receiving finger-gripping relaxation. Based on the APAIS assessment, one respondent (20%) experienced severe anxiety with a score of 20, while four respondents (80%) experienced moderate anxiety with scores ranging from 15 to 18. The mean pre-intervention APAIS score was 17.2, indicating

a relatively substantial level of anxiety within the study group. Preoperative anxiety commonly emerges from anticipation of surgery, uncertainty about the procedure, and concerns regarding the expected surgical outcome (Musyaffa et al., 2023). The distribution indicates that none of the respondents were classified as having mild anxiety at the initial assessment. This baseline condition provides an important reference for examining the changes in anxiety following the administration of finger-gripping relaxation.

The individual distribution of anxiety scores is presented in Table 2 to show the initial psychological condition of each respondent before the intervention. Respondent 1 recorded the highest APAIS score of 20 and was classified as having severe anxiety, whereas Respondents 2–5 recorded scores of 18, 17, 16, and 15, respectively, and were categorized as experiencing moderate anxiety. The five-point difference between the highest and lowest scores demonstrates that anxiety intensity varied among respondents despite their relatively similar clinical context. Variation in preoperative anxiety levels has also been observed among patients awaiting surgery, reflecting differences in individual psychological responses to the anticipated surgical experience (Kristanti & Faidah, 2022). The results demonstrate that anxiety was not concentrated in only one respondent because four of the five patients were already within the moderate category. The table therefore establishes the individual baseline that serves as a basis for interpreting the subsequent changes after relaxation.

Table 2. Preoperative Anxiety Levels Before Finger-Gripping Relaxation

Respondent	Pretest APAIS Score	Anxiety Level
R1	20	Severe
R2	18	Moderate
R3	17	Moderate
R4	16	Moderate
R5	15	Moderate
Total	86	1 Severe, 4 Moderate
Mean	17.2	Moderate

The predominance of moderate anxiety indicates that the preoperative period represented a psychologically meaningful phase for most respondents. Four respondents (80%) were classified as moderately anxious, while one respondent (20%) experienced severe anxiety. This distribution suggests that anxiety was a common condition within the observed group rather than an isolated response from a single patient. Previous research involving women undergoing Sectio Caesarea has identified preoperative anxiety as a relevant psychological condition that requires attention during perioperative care (Salsabilla et al., 2023). The presence of severe anxiety in R1 also demonstrates that individual patients may experience substantially greater psychological distress even when facing a similar surgical procedure. Such variation reinforces the importance of assessing anxiety individually rather than assuming that patients undergoing the same type of surgery will demonstrate identical psychological responses.

The baseline anxiety may also be associated with patients' perceptions and understanding of the forthcoming surgical procedure. Concerns about the operation, anesthesia, possible complications, and postoperative conditions can contribute to uncertainty and psychological tension before surgery. Knowledge has been identified as one factor associated with the level of anxiety experienced by preoperative patients (Almar et al., 2024). The respondents in this study also had different educational backgrounds, ranging from elementary school to higher education, which may contribute to differences in how medical information is received and interpreted. However, the present findings cannot establish an association between educational attainment and anxiety because the number of respondents in each category was very limited. The educational variation is therefore treated as contextual information rather than as evidence of a determinant of the observed APAIS scores.

Family and interpersonal conditions may represent another contextual factor relevant to preoperative anxiety. Patients who receive adequate emotional and practical support may have greater psychological resources for managing concerns associated with surgery. Family support has been reported to have a significant relationship with anxiety levels among preoperative patients (Katimenta et al., 2022). This factor is particularly relevant in the context of Sectio Caesarea because the patient

may simultaneously face concerns related to the surgical procedure, maternal condition, and expected recovery. Nevertheless, family support was not measured as an independent variable in the present study, so its specific contribution to the respondents' APAIS scores cannot be quantified. The baseline findings should therefore be interpreted as the result of an overall preoperative psychological condition rather than being attributed to a single demographic or contextual characteristic.

The mean APAIS score of 17.2 confirms that anxiety was present across the study group before finger-gripping relaxation was administered. The initial condition was characterized by one respondent with severe anxiety and four respondents with moderate anxiety, providing a relatively clear baseline for evaluating the intervention. The absence of respondents in the mild category at pretest also indicates that anxiety management was relevant for all participants included in the study. Non-pharmacological approaches such as guided imagery have previously been reported as interventions capable of reducing anxiety among preoperative Sectio Caesarea patients (Wahyuningsih & Agustin, 2020). The baseline results consequently support the clinical rationale for examining finger-gripping relaxation as a simple nursing intervention during the preoperative period. The subsequent measurements are important for determining whether the anxiety scores changed after the intervention and whether the direction of change was consistent across individual respondents.

Changes in Anxiety Levels Following Finger-Gripping Relaxation

The first day of intervention showed a decrease in APAIS scores among all five respondents after finger-gripping relaxation was administered. Respondent 1's score decreased from 20 to 18, Respondent 2 from 18 to 17, Respondent 3 from 17 to 16, Respondent 4 from 16 to 15, and Respondent 5 from 15 to 14. Although the magnitude of reduction was only one to two points for each respondent, the direction of change was consistent across the entire group. This pattern indicates that anxiety decreased immediately after the first relaxation session, although the categorical classification did not change for most respondents. Finger-gripping relaxation has previously been reported as a non-pharmacological technique that can reduce anxiety among preoperative patients undergoing Sectio Caesarea (Nanda & Rosyid, 2024). The first-day findings therefore provide an initial indication of a favorable change in anxiety following the intervention.

The categorical distribution after the first intervention also showed a shift in one respondent's anxiety level. Respondent 1 moved from severe anxiety to moderate anxiety after the score decreased from 20 to 18, while Respondents 2, 3, and 4 remained within the moderate category despite experiencing numerical reductions. Respondent 5 changed from moderate anxiety to mild anxiety after the score declined from 15 to 14. This finding demonstrates that numerical improvement in APAIS scores may occur without an immediate change in anxiety category because categorical thresholds encompass a range of scores. Similar evidence concerning the beneficial role of finger-gripping relaxation in reducing preoperative anxiety has been reported among patients undergoing Sectio Caesarea (Sari & Norhapifah, 2022). The first-day results therefore indicate both individual score reductions and limited categorical transitions after a single intervention session.

The changes observed during the second day are presented in Table 3 to provide a more detailed comparison of anxiety before and after the subsequent relaxation session. On the second day, the pre-intervention scores were 18, 17, 16, 15, and 14, respectively, while the post-intervention scores decreased to 17, 14, 13, 14, and 13. The mean APAIS score decreased from 16.0 before the second session to 14.2 after the session. Four respondents experienced a transition from moderate to mild anxiety, while one respondent remained in the moderate category. The consistent decrease across all five respondents indicates that the direction of change was maintained during the second day of intervention. Repeated application of relaxation techniques may provide patients with an opportunity to regulate psychological tension during the waiting period before surgery (Setyoningsih, 2023).

Table 3. Anxiety Levels Before and After Finger-Gripping Relaxation on Day 2

Respondent	Pretest APAIS Score	Anxiety Level	Posttest APAIS Score	Anxiety Level
R1	18	Moderate	17	Moderate
R2	17	Moderate	14	Mild
R3	16	Moderate	13	Mild

R4	15	Moderate	14	Mild
R5	14	Mild	13	Mild
Total	80	4 Moderate, 1 Mild	71	1 Moderate, 4 Mild

The second-day findings demonstrate a greater categorical improvement than that observed after the first intervention session. Four of the five respondents were classified as having mild anxiety after the second session, compared with only one respondent in the mild category before the session. Respondent 1 remained moderately anxious, although the APAIS score still declined from 18 to 17. The reduction in the mean score from 16.0 to 14.2 also indicates that the improvement was not limited to a single respondent. Previous research has demonstrated that finger-gripping relaxation can be used to reduce anxiety among preoperative patients, supporting its potential application as a simple nursing intervention (Yulianti & Hidayah, 2023). The findings suggest that repeated administration may be associated with a progressive reduction in anxiety intensity, although the present design does not permit a definitive causal conclusion.

Comparison between the first and second intervention days further shows that the anxiety reduction pattern was sustained throughout the observation period. On the first day, all respondents experienced a numerical reduction after relaxation, while on the second day the same pattern was again observed across all respondents. The repeated decrease suggests that the intervention was feasible to administer consistently during the preoperative period. A relaxation-based approach may help patients redirect attention from anticipatory concerns toward controlled physical and psychological responses, thereby supporting anxiety regulation. Evidence from preoperative patients has also shown beneficial effects of other relaxation-based interventions, including guided imagery, on anxiety levels (Elpiyanti & Simatupang, 2024). The present findings are compatible with this broader evidence concerning the use of non-pharmacological relaxation techniques in perioperative nursing care.

The individual changes also reveal that the magnitude of improvement was not identical among respondents. Some respondents demonstrated a one-point reduction during a session, whereas others experienced reductions of two or three points, indicating individual variation in response to finger-gripping relaxation. Differences in baseline anxiety, personal coping mechanisms, understanding of the procedure, and surrounding support may contribute to variation in psychological responses to preoperative interventions. Previous research has identified coping mechanisms as an important consideration in understanding differences in anxiety responses among individuals facing stressful situations (Simbolon & Simbolon, 2021). Despite these variations, every respondent showed a lower APAIS score after each intervention session. The consistent direction of change strengthens the descriptive evidence that anxiety tended to decline following finger-gripping relaxation within the observed group. The overall magnitude of this change is examined further through the aggregate pretest and posttest scores in the next section.

Effect of Finger-Gripping Relaxation on Preoperative Anxiety

The overall comparison demonstrates a reduction in preoperative anxiety after the implementation of finger-gripping relaxation. The total APAIS score decreased from 86 before the intervention to 71 after the intervention, representing an overall reduction of 15 points. At the individual level, all five respondents experienced a decrease in anxiety scores, although the magnitude of reduction varied between two and four points. Respondent 1 showed a reduction from 20 to 17, Respondent 2 from 18 to 14, Respondent 3 from 17 to 13, Respondent 4 from 16 to 14, and Respondent 5 from 15 to 13. Similar reductions in anxiety have been reported following the implementation of finger-gripping relaxation among preoperative patients (Nanda & Rosyid, 2024). These findings indicate a consistent downward pattern in APAIS scores across the five respondents following the intervention.

The mean APAIS score provides a clearer representation of the change observed at the group level. Before the intervention, the mean score was 17.2, whereas the mean score after the intervention decreased to 14.2, resulting in a mean reduction of 3.0 points. The categorical distribution also changed from one respondent with severe anxiety and four with moderate anxiety to one respondent with moderate anxiety and four with mild anxiety. This shift indicates that the reduction was not merely numerical but was also accompanied by an improvement in the anxiety classification of most respondents. Previous research involving preoperative patients undergoing Sectio Caesarea has

demonstrated that finger-gripping relaxation can contribute to reductions in anxiety levels (Salsabilla et al., 2023). The overall changes are summarized in Table 4.

Table 4. Overall Changes in Preoperative Anxiety Before and After Finger-Gripping Relaxation

Respondent	Pretest APAIS Score	Pretest Anxiety Level	Posttest APAIS Score	Posttest Anxiety Level	Reduction
R1	20	Severe	17	Moderate	3
R2	18	Moderate	14	Mild	4
R3	17	Moderate	13	Mild	4
R4	16	Moderate	14	Mild	2
R5	15	Moderate	13	Mild	2
Total	86		71		15
Mean	17.2		14.2		3.0

Table 4 shows that the greatest reductions occurred in Respondents 2 and 3, with each experiencing a four-point decrease in APAIS score. Respondent 1, who had the highest baseline score and was classified as severely anxious, experienced a three-point reduction and moved into the moderate category. Respondents 4 and 5 each experienced a two-point reduction, with Respondent 5 moving from moderate to mild anxiety. The consistency of reductions across all respondents suggests that the observed change was not restricted to patients with a particular baseline anxiety level. A previous study also found that finger-gripping relaxation was associated with decreased anxiety among preoperative Sectio Caesarea patients, providing empirical support for the observed pattern (Sari & Norhapifah, 2022). The individual results therefore demonstrate that the intervention was followed by improvements of different magnitudes while maintaining the same direction of change.

The reduction in anxiety may be interpreted in relation to the nature of finger-gripping relaxation as a simple relaxation technique that can be performed by patients during the preoperative period. The intervention provides patients with a structured activity requiring attention to controlled physical relaxation rather than continuous focus on anticipated surgical concerns. Relaxation interventions have been used in preoperative nursing care to help reduce psychological tension and promote a calmer state before surgery (Wahyuningsih & Agustin, 2020). The present results are also consistent with evidence showing that non-pharmacological interventions can be incorporated into preoperative care without replacing routine medical management. The mean reduction of three APAIS points suggests a measurable descriptive improvement within the observed group. Nevertheless, the magnitude of this reduction should be interpreted within the context of the study's small sample and one-group design rather than as definitive evidence of treatment efficacy.

The categorical improvement from predominantly moderate anxiety to predominantly mild anxiety further indicates that the intervention was accompanied by clinically observable changes in the respondents' psychological condition. Before the intervention, 80% of respondents were classified as moderately anxious and 20% as severely anxious, whereas after the intervention 80% were classified as mildly anxious and 20% as moderately anxious. This pattern represents a shift toward lower anxiety categories across the group. Research on SEFT and other non-pharmacological approaches has similarly demonstrated reductions in preoperative anxiety, indicating that psychological interventions can have an important complementary role in perioperative nursing practice (Rejeki et al., 2022). Finger-gripping relaxation may therefore be considered a practical option because it does not require specialized equipment and can be administered within a relatively short period. Its simplicity may facilitate integration into routine nursing interventions for patients awaiting surgery.

The findings should nevertheless be interpreted cautiously because the study involved only five respondents and did not include a control group or inferential statistical testing. The observed decrease from a mean APAIS score of 17.2 to 14.2 establishes a descriptive change but cannot independently distinguish the effect of finger-gripping relaxation from other influences occurring during the preoperative period. Factors such as information received from healthcare professionals, family support, adaptation to the hospital environment, and increasing familiarity with the surgical process may also influence anxiety. Family support, for example, has been associated with preoperative anxiety and may contribute to patients' psychological adaptation during hospitalization (Damita & Logen, 2023). The

consistency of the decrease across respondents nevertheless provides a meaningful clinical indication that finger-gripping relaxation may have potential as a complementary approach to preoperative anxiety management. Further studies involving larger samples, control groups, and inferential analysis are needed to establish the magnitude and statistical significance of its effect.

CONCLUSION

The findings demonstrate that finger-gripping relaxation was followed by a reduction in preoperative anxiety among patients at RSUD Limpung. All five respondents experienced a decrease in APAIS scores after receiving the intervention for two consecutive days. The mean APAIS score decreased from 17.2 before the intervention to 14.2 after the intervention, representing an average reduction of 3.0 points. The distribution of anxiety categories also changed from one respondent with severe anxiety and four respondents with moderate anxiety to one respondent with moderate anxiety and four respondents with mild anxiety. This pattern indicates a consistent shift toward lower anxiety levels across the observed respondents during the intervention period. Finger-gripping relaxation can be considered a simple non-pharmacological nursing intervention that may complement standard preoperative care in supporting patients' psychological readiness for surgery. However, the findings should be interpreted as descriptive evidence because the study involved only five respondents and did not use a control group or inferential statistical analysis.

In practical nursing care, finger-gripping relaxation offers several advantages because it is simple, does not require specialized equipment, can be performed within a relatively short period, and can be administered alongside routine preoperative management. The reduction in APAIS scores among every respondent indicates that the intervention was accompanied by an improvement in the psychological condition of the observed patients. The transition from moderate and severe anxiety toward mild anxiety in most respondents further indicates that the improvement was reflected not only in numerical scores but also in the classification of anxiety levels. Implementation of the intervention should remain responsive to individual patient conditions, ability to follow instructions, and the need for appropriate psychological support throughout the preoperative period. The findings provide an initial basis for nurses to consider finger-gripping relaxation as a complementary non-pharmacological approach for supporting psychological preparedness before surgery. Future research should involve larger samples and more diverse patient characteristics to improve the generalizability of the findings. Experimental designs incorporating control groups and inferential statistical analysis are also recommended to establish the effectiveness of finger-gripping relaxation more rigorously and to distinguish its contribution from other factors that may influence preoperative anxiety.

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