

BAB I INTRODUCTION

A. Background

Cancer is one of the global health problems that puts a huge burden on the number of illnesses and deaths, with a trend that continues to increase every year. Epidemiological reports recorded more than 20 million new cases with nearly 10 million deaths, making it the second leading cause of death after cardiovascular disease. It was found that 1 in 5 people will experience cancer Throughout its lifetime, while about 1 in 9 men and 1 in 12 women die from this disease. The most common cancers include lung, breast, colorectal, prostate, and gastric, with variations in distribution by sex and region (WHO, 2025).

Cancer Facts & Figures report that cancer cases are experiencing consistent improvement from year to year. In 2022, around 1,918,030 cases were recorded; then in 2023 it increased to 1,958,310 cases, and in 2024 it will increase to 2,001,140 cases. This data shows an increasing trend in cancer incidents in the last three years (B. Him, 2025)

Data Global Cancer Observatory (2022), Indonesia reported around 408,661 cases cancer new, with the largest number coming from cancer breast around 115,240 cases, followed by Cancer Serviks 66,610 cases, colorectal 57,210 cases, lung 28,200 cases, ovarian 24,120 cases, and prostate 17,980 cases. In 2023, the Indonesian Health Survey recorded a national prevalence of approximately 877,531 cases, with the highest rates in DI Yogyakarta (3.6%), DKI Jakarta (2.4%), West Sumatra (2.0%), and Bengkulu (0.7%) (Ferlay et al., 2022).

Data on cancer patients at M. Yunus Bengkulu Hospital, in 2023 there will be 411 cases of cancer patients, then in 2024 there will be 387 new cases and in 2025 there will be 327 cases of cancer in the period from January to July, this data describes the number of cancer patients who squitrn services at the main referral hospital in Bengkulu province (M YUNUS HOSPITAL, 2025).

Causes cancer Rooted in gene mutations that disrupt the control of the cell cycle, these changes can be ignited by cigarette carcinogens, alcohol, radiation, chemicals as well as viral infections such as HPV and hepatitis as well as chronic inflammation, while hormonal factors, immune disorders, and genetic predispositions increase susceptibility. The impact is real in daily life, namely pain, fatigue that never subsides, weight loss to cachexia, anemia, infections, and organ dysfunction due to invasion or metastasis, accompanied by the psychological and social burdens (Pandey et al., 2024).

Therapy for patients with cancer includes surgery, radiotherapy, chemotherapy, hormonal therapy, and immunotherapy. Chemotherapy is usually applied during illness cancer has spread systemically or is at the metastatic stage and involves administering chemical drugs in the form of pills or infusions with the aim of slowing the spread of cells cancer As well as preventing recurrence, but this treatment can also cause side effects such as nausea-vomiting, severe fatigue, decreased appetite (anorexia), hair loss (alopecia), canker sores (mucositis), indigestion (diarrhea or constipation), bone and muscle pain, skin and nail changes, decreased immunity to easy infection, and sleep disorders, anxiety, sadness, or emotional stress (National Cancer Institute, 2025).

Physical conditions that continue to weaken due to the side effects of chemotherapy often worsen the patient's psychological condition. Pain, reduced stamina, and thoughts of death can trigger the onset of deep. Anxiety This arises not only from physical discomfort, but also from the emotional and social burden that the patient feels during therapy (Subsection et al., 2023).

Anxiety in patients with cancer who are undergoing chemotherapy can be understood as a complex emotional response. Anxiety usually appears in the form of excessive fear, feelings of insecurity, and a perception of helplessness. This condition often begins with concerns about the side effects of therapy, such as pain, fatigue, and hair loss. Furthermore, patients often imagine the impact of the disease and treatment on their future quality of life. Response anxiety It can be adaptive as well as maladaptive (Shalata et al., 2024).

The level of anxiety experienced by patients varies, ranging from anxiety light, medium, to anxiety weight that can lead to panic attacks. Anxiety, excessive not only affects the psychological aspect, but also affects comfort, stamina, up to the patient's overall quality of life. This condition can ultimately affect the patient's adherence to the treatment plan undertaken. Therefore, it is important to have non-pharmacological interventions that can help patients manage anxiety during therapy (Forbes et al., 2023).

One approach that can be used is nonpharmacological therapy. Various methods have been developed to support patients with cancer in reducing taste anxiety, among which are music therapy, deep breathing relaxation therapy, mindfulness, as well as progressive relaxation therapy or Jacobson's Progressive Muscle Relaxation (JPMR). This method aims to help patients achieve emotional calm, improve mental balance, and create a more relaxed physical condition, so that patients can undergo better medical therapy (Ratnawati & Rosiana, 2020).

Jacobson's Progressive Muscle Relaxation (JPMR) is a relaxation technique developed by Edmund Jacobson in 1938 with the basic principle of systematically tightening and relaxing certain muscle groups. This technique aims to lower muscle tension and increase physical relaxation so as to have an effect on the nervous system (Fadillah & Yudiarso, 2021). JPMR has been shown to be effective in reducing anxiety, stress, pain, and lowering blood pressure in various groups of patients, including patients cancer. This is due to the ability of JPMR to activate the sympathetic nervous system, increase parasympathetic activity, and cause a feeling of relaxation that can reduce the physiological response to stress (Tapeh, Darvishpour, Besharati, & Gholami-Chaboki, 2024).

Research Paolis et al, (2019) Indicates that after the administration of the intervention Progressive Muscle Relaxation (PMR) combined with interactive guided imagery in patients cancer In the advanced stage, there is a significant decrease in pain intensity and distress. Average pain score based on Numerical Rating Scale (NRS) in the intervention group decreased from 4.11 before the intervention to 2.28 after the intervention, with a mean difference of 1.83 and the outcome was statistically significant ($p < 0.0001$). In addition, the Total score

Symptom Distress Score (TSDS) also decreased from 39.04 to 30.22, indicating a 23% decrease in distress after the intervention. These findings show that PMR combined with guided imagery is effective in reducing pain and emotional distress such as anxiety and depression in patients Cancer (Paolis et al., 2019).

Research Tapeh et al, (2024) Indicates that after the administration of the intervention Jacobson's Progressive Muscle Relaxation (JPMR) for 8 weeks, there was a statistically significant decrease in anxiety levels. The average anxiety score decreased from 10.41 before the intervention to 4.91 after the intervention, and the difference showed significant results ($p < 0.001$). In addition, the Participants' happiness levels also experienced a significant increase after the JPMR intervention, with the average score increasing from 26.59 to 37.18, and the difference was statistically significant ($p < 0.001$) (Tapeh, Darvishpour, Besharati, & Gholami-Chaboki, 2024).

Research Ahmadinia et al, (2025) It showed that after administering the Jacobson relaxation technique intervention for 12 minutes (given 1 hour before the CAA action), there was a statistically significant reduction in state anxiety. The mean anxiety score decreased from 40.69 before the intervention to 29.63 after the intervention, and the difference showed significant results ($p < 0.001$) (Ahmadinia et al., 2025).

Toqan's research, (2023) shows that the giving of progressive muscle relaxation exercise for 2 weeks had a significant effect on reducing anxiety levels in nursing students before undergoing clinical practice in the intensive care unit. In the intervention group, the average anxiety score decreased from 2.86 before the intervention to 1.15 after the intervention, and the difference was statistically significant ($p < 0.01$). In addition, after the intervention, anxiety levels in the intervention group were shown to be lower compared to the control group that did not receive relaxation exercises, with a statistically significant difference ($p < 0.01$) (Toqan & Ayed, 2023).

This study developed Jacobson's Progressive Muscle Relaxation (JPMR) intervention as a structured nonpharmacological nursing action in cancer patients undergoing chemotherapy to assess alterations in anxiety. This

approach not only assesses general anxiety levels, but also evaluates changes in cognitive, emotional, and physiological responses before and after chemotherapy.

An initial survey conducted by researchers in the chemotherapy room of Dr. M. Yunus Hospital in 2025 on 23 participants showed that as many as 6 people were in the normal category, 6 people experienced mild anxiety, 6 people were in moderate anxiety, and 5 people were included in the category of severe anxiety, which was characterized by psychological complaints such as excessive worry and anxiety as well as physical complaints such as tension, heart palpitations, cold sweats, tremors, sleep disturbances, decreased appetite, and digestive complaints in the form of abdominal discomfort or nausea, indicating that the level of anxiety in patients before undergoing chemotherapy varies from normal to severe anxiety.

Based on the background of the above problem, the researcher is interested in conducting a study on "The Effect of Jacobson's Progressive Muscle Relaxation (JPMR) on Alterations in Anxiety in Cancer Patients Undergoing Chemotherapy at Dr. M. Yunus Bengkulu Hospital in 2026".

B. Problem Formulation

Based on the background of high anxiety levels in cancer patients undergoing chemotherapy, the formulation of the problem in this study is:

"Is there an effect of Jacobson's Progressive Muscle Relaxation (JPMR) on alterations in anxiety in cancer patients undergoing chemotherapy at Dr. M. Yunus Hospital, Bengkulu City in 2026?".

C. Research Objectives

1. General Purpose

It is known that the effect of Jacobson's Progressive Muscle Relaxation (JPMR) on alterations in anxiety in cancer patients undergoing chemotherapy is known.

2. Special Purpose

- a. It is known that the characteristics of the participants include age, gender and occupation.
- b. It is known that anxiety scores in cancer patients undergoing chemotherapy before Jacobson's Progressive Muscle Relaxation intervention was given to patients
- c. It is known that anxiety scores in cancer patients undergoing chemotherapy after being given Jacobson's Progressive Muscle Relaxation intervention in patients
- d. It is known that the effect of Jacobson's Progressive Muscle Relaxation (JPMR) on alterations in anxiety in cancer patients undergoing chemotherapy at Dr. M. Yunus Hospital, Bengkulu City.

D. Research Benefits

1. For Participants

The results of this study are expected to be a reference for participants in applying Jacobson's Progressive Muscle Relaxation (JPMR) therapy as a non-pharmacological intervention to reduce anxiety levels in cancer patients, thereby helping to increase a sense of relaxation and comfort during treatment.

2. Share Hospital Installation

This research is expected to be an input for hospitals in the application of Jacobson Progressive Muscle Relaxation as a non-pharmacological intervention to help reduce anxiety and improve the comfort of cancer chemotherapy patients.

3. For Educational Institutions

The results of this study are expected to be an additional reference in the development of nursing science, especially in the field of oncology nursing and palliative nursing, and can be used as study material for students and researchers in developing non-pharmacological interventions to reduce anxiety in cancer patients.

4. Share Research

This research is expected to add insight into the influence of JPMR in reducing anxiety in cancer patients undergoing chemotherapy. The results are expected to be a reference for future research with a wider scope, different methods, and other psychological variables related to the quality of life of cancer patients.

