

CHAPTER V

RESEARCH RESULTS

A. The Course of Research

This study was carried out in the Chemotherapy Room of Dr. M. Yunus Hospital, Bengkulu Province, with the aim of determining the effect of Jacobson's Progressive Muscle Relaxation (JPMR) on alterations in anxiety in cancer patients undergoing chemotherapy. The characteristics of the participants observed in this study included age, gender, and occupation, as well as anxiety levels before and after the intervention.

This research has received ethical approval from the Ethics Commission of the Ministry of Health of the Ministry of Health of Bengkulu with the number No.KEPK.BKL/299/04/2026 dated April 03, 2026. Furthermore, the researcher obtained a research permit recommendation letter from the Bengkulu Province Investment and One-Stop Integrated Services Office (DPMPTSP) on April 22, 2026, and then obtained a research permit from the Education and Training Section (Diklat) of Dr. M. Yunus Hospital, Bengkulu Province on May 6, 2026.

Data collection was carried out from May 6 to June 06, 2026, in the Chemotherapy Room of Dr. M. Yunus Hospital, Bengkulu Province. Based on hospital medical record data, in 2025 there were 327 cases of cancer in the period from January to July. The data describe the number of cancer patients who receive chemotherapy services at the referral hospital.

The research process began by screening cancer patients who would undergo chemotherapy before chemotherapy activities took place. Screening was conducted to identify patients who met the inclusion and exclusion criteria of the study. The sampling technique used is consecutive sampling. Based on the criteria that have been set, as many as 90 participants who are qualified and willing to participate in the research were obtained.

Before the implementation of the research, the researcher provided an explanation to the Participant about the objectives, benefits, research procedures, and rights of the Participant while participating in the research. The researcher also explained that all data and the identity of the Participant are kept confidential and the Participant's participation is voluntary. Participants who

were willing to participate in the study were then asked to sign an informed consent sheet as proof of written consent.

After obtaining the consent of the participants, the researcher collected data on the characteristics of the participants, which included age, gender, and occupation. Furthermore, the initial anxiety level measurement (pre-test) was carried out using the State-Trait Anxiety Inventory (STAI-T) instrument. Pre-test measurements were taken before the participant received the intervention and before undergoing chemotherapy.

After the initial measurements were completed, the researcher administered Jacobson's Progressive Muscle Relaxation (JPMR) intervention directly to participants according to the Standard Operating Procedures (SOP). Participants were positioned to sit or lie down as comfortably as possible in a calm and conducive environment. Therapy begins with deep breathing exercises, then continues with gradual relaxation exercises of muscle groups that include the muscles of the hands, arms, face, neck and shoulders, chest and breathing, abdomen, back, thighs and buttocks, as well as calves and legs. Each muscle group is tense for a few seconds, then relaxed again until the participant feels a more relaxed body condition. After all stages are completed, the therapy ends with the final cooling and relaxation phase. The implementation of JPMR lasted for approximately 5-10 minutes.

After the intervention was completed, participants underwent chemotherapy procedures according to the hospital's service schedule. Measurement of final anxiety levels (post-test) was performed immediately after participants completed the chemotherapy procedure using the same State-Trait Anxiety Inventory (STAI-T) instrument. Post-test measurements were carried out to determine changes in anxiety levels after the intervention was given.

During the research process, all participants participated in the series of research until it was completed so that there were no dropouts. After all the data were collected, an editing process was carried out to check the completeness of the data, followed by coding, data entry, tabulation, and data cleaning to ensure there were no errors or duplicate data. The complete data were then analyzed

using the SPSS program, including univariate analysis, normality test, and Wilcoxon Signed-Rank Test to determine the effect of intervention on participants' anxiety levels.

B. Overview of Univariate Analysis

Univariate analysis was used to describe the characteristics of the participants and the variables of the study. Participant characteristics, including age, gender, and occupation, were analyzed using frequency and percentage distributions. Meanwhile, age variables and anxiety levels before (pretest) and after (posttest) intervention administration were analyzed using central tendency measures, which included mean, median, standard deviation, minimum value, and maximum value at a confidence level of 95% (confidence interval). The results of the analysis are presented in the form of a table as follows:

1. Overview of Participant Characteristics by Age, Gender, and Occupation

Table 5. 1 Characteristics of Participants by Age

Variabel	Value					
Age	n	Red	Median	Min	Max	SD
	90	46.17	44.00	34	67	10.095

*Descriptive statistical analysis Mean, Median, Min, Max, SD

Table 5.1 shows that the average age of participants undergoing chemotherapy at Dr. M. Yunus Bengkulu Hospital was 46.17 years with a median of 44 years. Participants ranged in age from 34 to 67 years, with a standard deviation of 10.095. This shows that the participants in this study have a fairly diverse age range, but in general they are in the adult to elderly age group.

Table 5. 2 Characteristics of Participants by Gender and Occupation(n=90)

Variabel	Frequency (Percentage)
Gender	
Male	5 (5.6%)
Women	85 (94.4%)
Jobs	
Work	17 (18.9%)
Not Working	73 (81.1%)

*Descriptive statistical analysis of frequency (n) and percentage (%)

Table 5.2 shows that out of a total of 90 Participants, the majority of Participants were female as many as 85 people. Based on work, the majority

of non-working participants are 73 people, while 17 working participants are employed.

2. Average Overview of Anxiety in Cancer Patients Undergoing Chemotherapy Before and After Intervention

Table 5. 3 Gambaran Anxiety Before and After Done Jacobson Progressive Muscle Relaxation (JPMR) In Patients Cancer Who Undergoes Chemotherapy

Variabel	n	Mean	SD	Min	Max
Before Treatment (pre)					
	90	42.58	6.230	34	59
After the Treatment (post)					
	90	29.12	6.515	20	48

***Descriptive statistical analysis of sample count(s), Mean, SD, Min, Max**

Table 5.3 shows that the mean anxiety value in cancer patients who underwent chemotherapy before being given Jacobson's Progressive Muscle Relaxation (JPMR) intervention was 42.58 with a standard deviation of 6.230, a minimum score of 34 and a maximum score of 59. After being given Jacobson's Progressive Muscle Relaxation (JPMR) intervention, the mean anxiety decreased to 29.12 with a standard deviation of 6.515, a minimum score of 20 and a maximum score of 48. The results showed that there was a decrease in the average anxiety score by 13.46 points from before the intervention of 42.58 to 29.12 after the intervention. In addition, there was a decrease in the minimum score from 34 to 20 and the maximum score from 59 to 48, indicating that anxiety levels in cancer patients undergoing chemotherapy tended to decrease after being given the Jacobson's Progressive Muscle Relaxation (JPMR) intervention.

C. Bivariate Analysis Overview

Bivariate analysis was conducted to determine the effect of Jacobson's Progressive Muscle Relaxation (JPMR) on anxiety in cancer patients undergoing chemotherapy. Based on the results of the normality test, the significance value of the pre-test data was 0.000, and the post-test was 0.000, so the significance value was less than 0.05. Thus, the data are not distributed normally. Therefore,

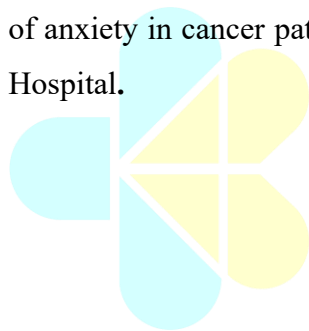
to determine the influence between pre-test and post-test values, the Wilcoxon Signed-Rank Test with a significance level of 5% ($p\text{-value} < 0.05$) was used.

Table 5. 4 Influence of Jacobson's Progressive Muscle Relaxation (JPMR) Against Alterations in Anxiety in Patients with Cancer who underwent chemotherapy at Dr. M. Yunus Bengkulu Hospital

Variabel	Median	Min	Max	Z	p-value
Anxiety Pretest	39.00	34	59	- 8.241	0,000
Anxiety Posttest	28.00	20	48		

*****Uji Wilcoxon Signed Rank Test**

Table 5.4 The results of the statistical test of the Wilcoxon table show a p-value of 0.000. Because the value ($p < 0.05$), there was a significant difference between the level of anxiety before and after the intervention. Thus, it can be concluded that Jacobson's Progressive Muscle Relaxation (JPMR) affects the level of anxiety in cancer patients undergoing chemotherapy at Dr. M. Yunus Bengkulu Hospital.



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