CHAPTER IV
RESEARCH METHODS

A. Types of Research and Research Design

This type of research is a quantitative research with a quasi-experiment design using pre-test and post-test. This study used two groups, namely the intervention group and the control group. Initial measurements (pre-tests) were carried out in the intervention group and the control group. After that, a second measurement (post-test) was carried out. The results of the observation of the measurements were compared between the intervention group and the control group.

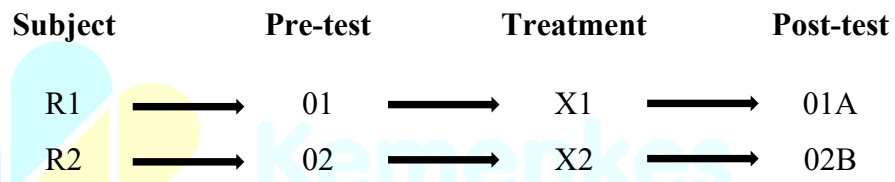

Chart 4. 1 Research Model

Description:

R1 : Respondents in the intervention group

R2 : Respondents in the control group

01 : Measurement of hallucination scores before treatment in the intervention group

02 : Measurement of hallucination scores before treatment in the control group

X1 : Intervention group treatment is given Music Therapy and Expressive Writing Therapy

X2 : The control group treatment was given generalist therapy and drawing therapy

01A : Measurement of hallucination scores after treatment in the intervention group

02A : Hallucinogenic score measurement after treatment in the control group

B. Research Variables

1. Independent Variables

   The independent variables in this study were music therapy and expressive writing therapy.

2. Dependent Variable

   The dependent variable in this study was the auditory hallucination score.

C. Research Location and Time

1. Location

   The place where this research was conducted was at the Soeprapto Special Psychiatric Hospital, Bengkulu Province.

2. Time

   The research time will be in 2026.

D. Population and Sample

1. Population

   Population is a total object or subject of research that has certain characteristics or characteristics so that it is worthy of being researched and used as a basis for drawing conclusions (Suriani et al., 2023). The population in this study is all patients diagnosed with auditory hallucinations totaling 64 people at the Bengkulu Provincial Hospital.

2. Sample

   Samples are part of the population that the researcher deliberately chooses to be used as an object of observation. It is smaller in size than the population and is used as a representative of that population (Mushofa et al., 2024).

   The calculation of the number of samples in this study uses the formula for two mean differences as follows:

$$n = \frac{\sigma^2(Z_{1-\alpha} + Z_{1-\beta})^2}{(\mu^{\alpha} - \mu^{o})^2}$$

Description:

n : Number of samples

$Z_{1-\alpha}$: Standard normal deviation for α (1.96)

$Z_{1-\beta}$: Standard normal deviation for β (1.28)

μ^{o} : Mean value before intervention obtained from the literature

μ^{α} : Mean value after intervention obtained from the literature

σ : Standard deviation/standard deviation

Based on research conducted by El Ahsry et al (2021) on schizophrenic patients, the mean value before intervention ($\mu^{o} = 32{,}54$), the mean value after intervention (), and the standard deviation difference (σ=1.43) were obtained. $\mu^{\alpha} = 31{,}44$

$$n = \frac{\sigma^2(Z_{1-\alpha} + Z_{1-\beta})^2}{(\mu^{\alpha} - \mu^{o})^2}$$

$$n = \frac{1{,}43^2(1{,}96 + 1{,}28)^2}{(32{,}54 - 31{,}44)^2}$$

$$n = \frac{2{,}0449\ (3{,}24)^2}{(1{,}1)^2}$$

$$n = \frac{2{,}0449\ (10{,}4976)}{1{,}21}$$

$$n = \frac{21{,}4665}{1{,}21}$$

$n = 17{,}7 \approx 18$

Drop out = 18 x 10% = 1.8

Sample per group = 18 + 1.8 = 19.8≈ 20 respondents

Total sample = 40 respondents

3. Sampling Techniques

The sampling technique in this study uses simple random sampling. According to Sugiyono (2019), simple random sampling is a sampling technique that provides an equal opportunity for each member of the population to be selected as a sample. Before sampling, all members of the population were selected based on the inclusion and exclusion criteria that had been set by the researcher. The inclusion and exclusion criteria in this study are as follows:

a. Inclusion Criteria
   1) Patients who are willing to be respondents
   2) Schizophrenic patients with a nursing diagnosis of sensory perception disorders: auditory hallucinations
   3) Patients with an AHRS score of ≤22
   4) Patient cooperative
   5) Can read and write
   6) Good hearing function

b. Exclusion Criteria
   1) Patients who experience a noisy (arag) phase during the research process
   2) Patients who did not participate in the study until it was completed.

E. Data Collection

1. Data Source

a. Primary Data

Primary data is data obtained by researchers directly from the source during the implementation of the research (Sulung & Muspawi, 2024). In this study, data related to auditory hallucinations in schizophrenia patients were obtained through observation and interview techniques using the Auditory Hallucination Rating Scale (AHRS) instrument.

b. Secondary Data

Secondary data is data obtained from the research site regarding the number of schizophrenic patients who suffer from hallucinations through data collection at the Soeprapto Hospital, Bengkulu Province.

2. Data Collection Tools

Research instruments are tools or facilities used by researchers in collecting data.

a. The instrument used to collect characteristic data is a questionnaire.
b. The instrument used to measure hallucination scores is the Auditory Halutination Rating Scale (AHRS) instrument sheet.

3. Test Data Collection Tools

Hallucination scores were measured using the Indonesian version of the Auditory Hallucination Rating Scale questionnaire. The AHRS instrument has gone through a validity and reliability test with a Cronbach's alpha value of > 0.60 which shows that this instrument is valid and (Febrita Puteri Utomo *et al*., 2021).

4. Data Collection Procedure

a. Data was taken directly from respondents who had met the inclusion criteria.
b. Characteristic data was obtained by means of interviews and filling out questionnaires.
c. The data that has been obtained is recorded on a questionnaire sheet that has been made by the researcher.

F. Data Processing

According to Kamaruddin and Yanis (2023), data processing is a series of activities to collect and organize data from each research variable so that the data is in a form that is ready to be analyzed and evaluated. Here is how data is processed in quantitative research:

1. Editing

The data that has been collected through questionnaires and observation sheets is then edited, which involves re-checking the completeness,

suitability, and clarity of the respondents' answers to ensure that the data obtained is ready to be used in the analysis stage

2. Coding

   The coding process is carried out by converting data that was initially in the form of words or letters into numbers, so that it is easier to analyze, speed up the data entry process, and help group according to predetermined categories.

   In the coding stage, the researcher encodes each letter data into numbers. Coding is done as follows:

   a. Interventions:

      1= music therapy and expressive writing therapy

      2= generalist therapy and drawing therapy

   b. Hallucination score:

      Expressed in numbers 0-44

   c. Marital Status:

      1= Married

      2= Unmarried

      3=Divorce

      4=Divorce Dead

   d. Long maintained

      Expressed in days

   e. Hospital admission history

      Stated in the number of hospital admissions

3. Data Classification

   All the data obtained are then classified according to the source, method of acquisition, collection time, nature, and type. Data obtained directly through measurement, observation, and surveys is referred to as primary data. Judging from the time of collection, independent and dependent variable data were collected simultaneously. The data used in this study is in the form of quantitative data, both discrete and continuous, expressed in numbers or numbers.

4. Saving

   Saving or storage, researchers store research data in the form of soft files on laptops, flash disks, and google drives.

5. Tabulating/Processing

   Processing is a processing stage where all research data is entered and stored on a computer using a special program to manage the data.

6. Cleaning

   The process of re-examination by the researcher of the data that has been entered into the computer, with the aim of detecting the presence of missing data and ensuring the correctness of the code or variations of the data that has been entered.

G. Data Analysis

1. Univariate Analysis

   Univariate analysis was used to describe the characteristics of respondents based on age, length of time treated, frequency of treatment, and marital status. Numerical data such as age, length of time treated, and frequency of treatment are presented in the form of mean, median, standard deviation, minimum–maximum value, and 95% Confidence Interval (CI). Categorical data in the form of marital status is presented in the form of frequency and percentage.

2. Bivariate Analysis

   Bivariate analysis was performed to see the difference between the two variables, the results of which were then interpreted based on the statistical tests performed. The first step that the researcher will take is to test the normality of the data. Normality tests were performed on the value of the difference in auditory hallucination scores between pre-test and post-test in each group using the Shapiro–Wilk test. If the difference value is normally distributed, the analysis of the difference in scores before and after treatment in the group is carried out using a paired t-test. If the difference value is not normally distributed, the Wilcoxon signed-rank test is used. To compare the difference in pre-test and post-test scores between the intervention group and

the control group, if the difference data is normally distributed, an independent t-test is used, while if it is not normally distributed, the Mann–Whitney is used.

Table 4. 1 Bivariate Test

Yes	Variable	Test Parametric	Non-Parametric Test
1	Value of differences in pre-post hallucination scores in groups	Paired T-Test	Wilcoxon Rank Test
2	Value of differences in pre-post hallucination scores between groups	Independent T-Test	Mann Whitney

H. Research Flow

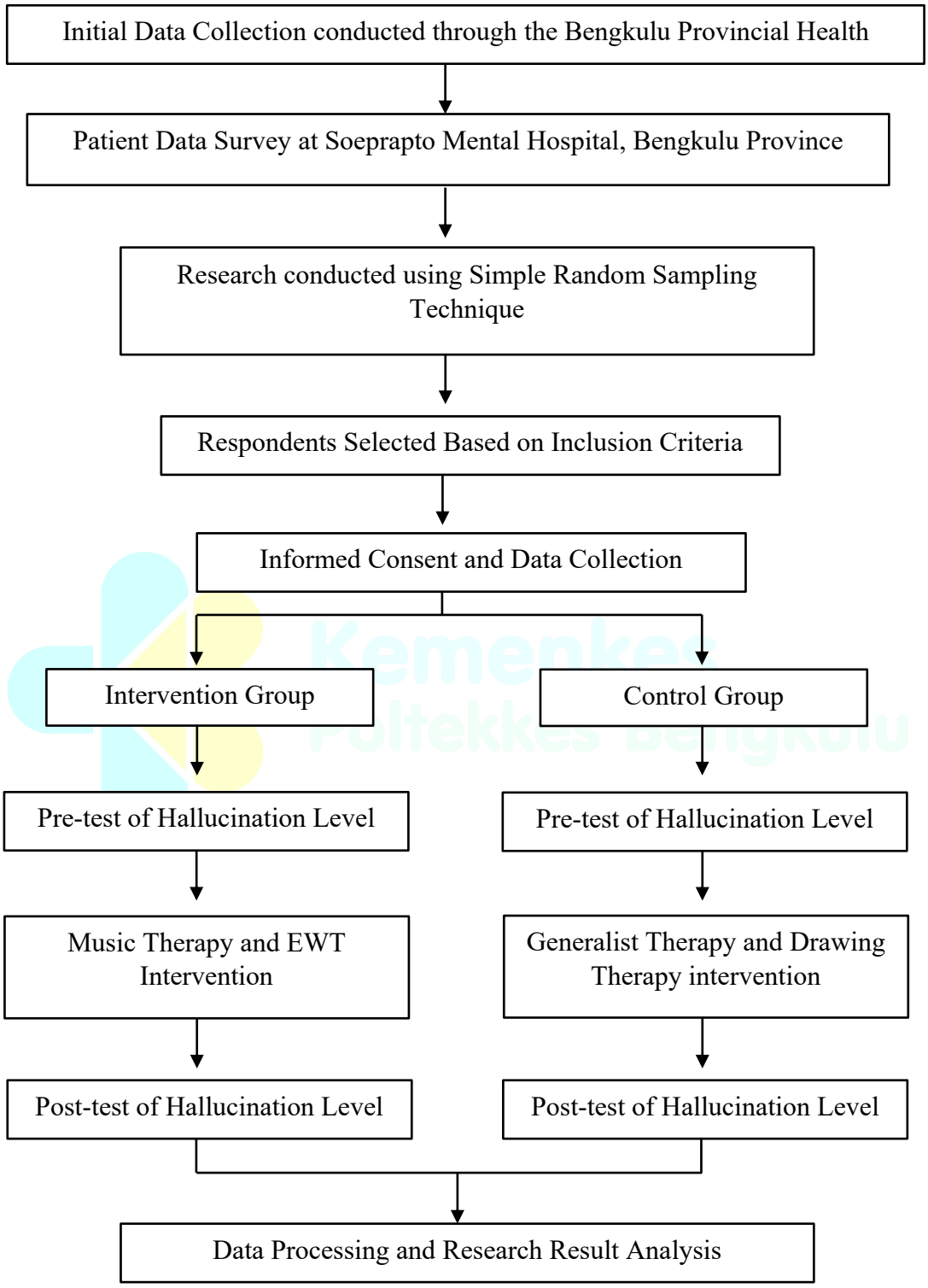

Chart 4. 2 Research Flow

I. Research Ethics

According to Hansen, et al. (2023), researchers will consider ethical and legal compliance aspects to protect respondents from all forms of physical and psychological harm and discomfort. Ethical Clearence considers the following:

1. Right to participate/not be a respondent (Self determinant)

   In this study, respondents were given full freedom to choose their participation or not, without any coercion or pressure from any party.

2. Anonymity

   The respondent's identity is not written directly in the results of the study, the respondent's name is written with initials and a number code, and the signature is listed on the written consent sheet.

3. Confidentiality

   All information from respondents is kept confidential and will not be disseminated. The data is stored in soft file form on the researchers' laptops and personal drives.

4. Justice

   The principles of justice include honesty, openness, and prudence. The researcher is obliged to guarantee the rights of the respondents fairly according to the agreement before the research begins.

5. The Principle of Beneficiation

   Respondents who participated in this study found it useful to improve the balance that could be done independently/independently.

6. Non-malaficience

   The researcher guarantees that this study will not cause discomfort, pain, or harm to the respondents physically or psychologically.

J. Activity Plan

Research activities will be carried out with the following schedule:

Table 4. 2 Thesis Research Schedule

Yes	Activities	Moon											
		9	10	11	12	1	2	3	4	5	6	7	8
1	Completion of Research Proposals	■	■										
2	Research Proposal Seminar Exam			■									
3	Revision of Thesis Proposal and Endorsement			■	■								
4	Collection of Thesis Proposals to Study Programs				■								
5	Ethical Clearance *Management*					■							
6	Management of Permit Introduction and Data Collection					■							
7	Initial Survey						■						
8	Implementation of research and data collection						■	■					
9	Entry, Analysis and Interpretation of Research Results Data								■				
10	Preparation for Writing Results Report								■				
11	Thesis Exam									■			
12	Thesis Revision									■			
13	Thesis Validation with Examiners and Head of Study Program									■			
14	Collection of Thesis to Study Program										■		
15	Drafting Manuscripts										■		
16	Submit Manuscripts to Scientific Journals											■	
17	Submitting LOA for the publication of journal articles to the study program												■
18	Collection of articles that have been published to study programs												■