

CHAPTER III

RESEARCH METHODS

3.1 Research Design

The research used in data collection by the researcher uses correlational methods, with the aim of identifying correlations between independent and dependent variables, using a cross-sectional approach. Researchers conduct observations and review variables simultaneously. In this study, the level of family support provided to the elderly will be measured, as well as assessing their ability to perform daily activities.

3.2 Population and Sample

3.2.1 Population

The population is the entire object/person who will be the focus of the research. The population of this study was all elderly people suffering from osteoarthritis in the neighborhood of RW 04, Samaan Village, totaling 30 elderly people, obtained from data from the Jeruk Manis elderly health post (Posyandu) cadres in January 2025.

3.2.2 Sample

A sample is a segment of the entire research object selected and deemed representative to describe the characteristics of the population as a whole. The sample in this study was elderly people with osteoarthritis. In this study, the researcher took the sample using total sampling, a sampling technique in which all members of the population are included in the sample. This is often done when

the population is relatively small, less than 30 people, or when the research aims to make generalizations with very small errors (Sugiyono, 2020). Therefore, the sample taken in this study was all 30 elderly people with osteoarthritis.

3.2.3 Sample Criteria

3.2.3.1 Inclusion

Inclusion criteria are criteria where the research subjects represent a sample that meets the requirements as a sample (Yulianto & Alhamdi, 2022). In this study, the inclusion criteria include:

1. Seniors aged 60 - 89 years
2. Elderly with a diagnosis of osteoarthritis
3. Elderly people may or may not experience problems fulfilling ADL
4. Lives with his family (husband/wife/children, or who lives in the same house as the respondent)

3.2.3.2 Exclusion

Exclusion criteria are terms or conditions under which research subjects cannot be used as samples because they do not meet the established requirements, for example refusing to be respondents or conditions that make it impossible to carry out research (Yulianto & Alhamdi, 2022). The exclusion criteria in this study are:

1. Elderly people who are unwilling to be respondents
2. Elderly people experience cognitive impairment
3. Elderly people diagnosed with osteoarthritis accompanied by other diseases such as stroke, heart disease and paralysis

3.2.4 Sampling Techniques

The sampling technique used in the thesis data collection process is non-probability sampling, a sampling method in which not all members of the population have an equal chance of being selected. The method used is total sampling, where the researcher uses all members of the population as a sample.

3.3 Location and Time of Research

1. Research location

The research location is the area where the researcher collects research data using predetermined methods. The research location was in RW 04, Samaan Village, Klojen, Malang City, East Java, and was conducted door-to-door to facilitate completion of the family support questionnaire and provide a direct picture of ADL fulfillment capabilities.

2. Research Time

Data collection will begin in June 2025.

3.4 Research Variables and Operational Definitions

3.4.1 Research Variables

This study consists of two variables: an independent variable and a dependent variable. The independent variable in this study is family support, while the dependent variable is the fulfillment of ADLs in elderly people with osteoarthritis.

3.4.2 Operational Definition

Table 3.1 Operational Definition

No	Variable	Operational Definition	Parameter	Measuring instrument	Scale	Assessment Scoring
1	Family support	<p>The support provided by the family to elderly people with osteoarthritis problems is divided into 4 aspects, including:</p> <ol style="list-style-type: none"> 1. Emotional support 2. Award support 3. Instrumental support 4. Informational support 	<ol style="list-style-type: none"> 1. Emotional support includes expressions of empathy, care and attention to elderly people with osteoarthritis in fulfilling ADL. 2. Appreciation support includes positive expressions of appreciation for individuals in fulfilling ADLs. 3. Instrumental support includes direct assistance in the form of services, time and money. 4. Informational support includes providing advice, guidance, suggestions and information regarding 	Family Support Questionnaire	Ordinal	<p>Likert scale 1-5: Never score (1) Ever score (2) Rare score (3) Frequent score (4) Always score (5)</p> <p>- Score < 48 : Lack of family support - Score > 48 : Good family support - Score = 48 : Good family support</p>

No	Variable	Operational Definition	Parameter	Measuring instrument	Scale	Assessment Scoring
			osteoarthritis and the fulfillment of ADLs.			
2	Ability to fulfill ADL	<p>The ability of elderly people suffering from osteoarthritis to carry out their daily activities, including the ability</p> <ol style="list-style-type: none"> 1. Eat 2. Bathe 3. Self-care 4. Get dressed 5. Defecate 6. Urination 7. Use of the bathroom 8. Moving places 9. Mobility (walking on a flat surface) 10. Climbing or descending stairs 	<ol style="list-style-type: none"> 1. Eating includes requiring assistance such as taking rice, cutting food 2. Bathing can be done independently or with assistance 3. Self-care includes cleanliness, body odor 4. Dressing includes neatness (being able to button up clothes, close zippers) 5. Defecate 6. Urination can be controlled or a catheter can be installed. 7. Independent or assisted bathroom use 8. Moving from bed to seat or vice versa 9. Mobility walking on a flat surface 	Barthel Index Questionnaire	Ordinal	<p>20 : Independent</p> <p>12 – 19 : Mild Dependence</p> <p>9 – 11 : Moderate Dependence</p> <p>5 – 8 : Heavy Dependence</p> <p>0 - 4 : Total Dependence</p>

No	Variable	Operational Definition	Parameter	Measuring instrument	Scale	Assessment Scoring
			10. Climbing or descending stairs independently or with assistance			

3.5 Research Instruments

This research uses two research instruments, including:

1. Questionnaire Regarding Family Support

The family support questionnaire used in this study was a questionnaire sourced from Nursalam (2017) and modified by (Luchmaniar, 2023) on adjusted questions, including emotional support question number 2, appreciation support number 5, instrumental support questions number 9 and 10, and informational support question number 15. The questionnaire was non-standard so that the previous researcher tested the feasibility of the instrument used by testing using the validity test of the family support questionnaire using the SPSS 25 program, the results obtained were between 0.674-0.969 which means that $r_{count} > r_{table}$ then the questionnaire is said to be valid, and the results of the reliability test of the family support questionnaire using the SPSS 25 program showed that the Cronbach's Alpha value was 0.906 which means the questionnaire has high reliability.

Table 3.2 Questionnaire on Family Support

Variables	Sub Variables	Description	Number of Questions	Question Item Number on the Instrument
	Emotional support	includes expressions of empathy, concern	4	1-4

Variables	Sub Variables	Description	Number of Questions	Question Item Number on the Instrument
Family Support		and attention to elderly people with osteoarthritis in fulfilling ADL		
	Award support	includes positive expressions of appreciation for individuals in fulfilling ADLs	4	5-8
	Instrumental support	Includes direct assistance in the form of services, time and money	4	9-12
	Informational support	Includes providing advice, guidance, suggestions, information and feedback regarding osteoarthritis and ADL fulfillment.	4	13-16
	Total			16 pieces

2. Questionnaire regarding ADL fulfillment ability

The ADL fulfillment variable was measured using a questionnaire. Researchers provided questionnaires to the patient's family or respondents if the respondent's condition allowed them to complete the questionnaire. Measurements were made using the Barthel index.(Sihaloho, 2022).

TABLE 3.3 QUESTIONNAIRE REGARDING ADL FULFILLMENT ABILITY

Variables	Indicator	Evaluation	Mark	Number on the instrument
Ability to fulfill ADL (Activity Daily Living)	Eat	0 = unable 1 = requires assistance, such as cutting food, spreading butter or requires a special diet 2 = independent/without assistance		1
	Bathe	0 = dependent/needs help from others 1 = independent		2
	Self-care	0 = need help with personal appearance 1 = able to work independently		3
	Get dressed	0 = dependent/unable 1 = needs help but can do some of it 2 = independent (able to button clothes, close		4

Variables	Indicator	Evaluation	Mark	Number on the instrument
		zippers, tidy up, etc.)		
	Defecate	0 = incontinent or dependent on enema 1 = occasional incontinence (once a week) 2 = normal		5
	Urination	0 = incontinence or catheterized or unable to control urination independently 1 = occasional incontinence 2 = normal		6
	Use of the bathroom	0 = dependent/unable 1 = needs help but not completely dependent 2 = independent		7
	Moving places	0 = unable/experiencing balance disorders 1 = requires a lot of help (one or two people to sit) 2 = needs some help (verbally directed only) 3 = independent		8
	Mobility	0 = unable to walk 1 = can only move with a wheelchair		9

Variables	Indicator	Evaluation	Mark	Number on the instrument
		2 = walking with the help of another person 3 = independent (even though using aids such as a cane)		
	Climb or descend stairs	0 = unable 1 = need help 2 = independent		10
Total				10

Information :

20 = Independent

12 – 19 = Mild Dependence

9 – 11 = Moderate Dependence

5 – 8 = Heavy Dependence

0 - 4 = Total Dependence

3.6 Method of collecting data

Data collection methods in this study included interviews and questionnaires.

Interviews were conducted by researchers to obtain general data, namely the elderly's biodata: Name, Age, Gender, Marital Status, Last Education, and type of employment. While for family data included the names of family members and their relationship to the elderly. Specific data regarding family support and the

ability to fulfill ADL used a questionnaire. Researchers asked questions according to the statement sheet on the questionnaire and listed the available answer choices, then the family was asked to choose the answer according to their wishes.

3.7 Data Processing and Analysis

3.7.1 Data processing

After the data is collected, the researcher will process the data by editing, coding, scoring, tabulating and entering data.

1. *Editing*

Activities aimed at re-examining whether the questionnaire is complete as an effort to maintain the quality of elderly data.

- a. Completeness of answers
- b. Author's readability
- c. Relevance of the answer

2. *Coding*

The activity of classifying answers marked with a code in the form of letters or numbers

a. Respondents

Respondent 1 = 1

Respondent 2 = 2

b. Age

60 – 69 = 1

70 – 79 = 2

80 - 89	= 3
c. Gender	
Man	= 1
Woman	= 2
d. Level of education	
Elementary School	= 1
Junior High School	= 2
Senior High School	= 3
D3	= 4
S1	= 5
e. Type of work	
Doesn't work	= 1
Work	= 2
f. Family Support	
Not enough	= 1
Good	= 2
g. Fulfillment of ADL	
Independent	= 5
Mild Dependence	= 4
Moderate Dependence	= 3
Heavy Dependence	= 2

Total Dependence = 1

3. Scoring

The activity of determining the total score on the questionnaire answers.

Scoring is used in the assessment of family support and fulfillment of ADL

using an ordinal scale to obtain the quantitative data required by the researcher.

TABLE 3.4 SCORING

No	Indicator	Score
1	Family Support: 1. Emotional support 2. Award support 3. Instrumental support 4. Informational support	Likert scale 1-5: Never score 1 Ever scored 2 Rarely score 3 Often score 4 Always score 5 - Score < 48 : Lack of family support - Score > 48 : Good family support - Score = 48 : Good family support
2	Fulfillment of ADL: 1. Eat 2. Bathe 3. Self-care 4. Get dressed 5. Defecate 6. Urination 7. Use of the bathroom 8. Moving places	20 : Independent 12 – 19 : Mild Dependence 9 – 11 : Moderate Dependence 5 – 8 : Heavy Dependence

	9. Mobility (walking on a flat surface) 10. Climbing or descending stairs	0 - 4 : Total Dependence
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4. *Tabulating*

The activity of compiling data in the form of tables which aims to facilitate observation and evaluation.(Rachmayani, 2015)

5. *Data Entry*

The data that has been converted into code is then transferred and entered into the SPSS application.

3.7.2 **Data analysis**

1. **Univariate Analysis**

This analysis aims to explain or describe the characteristics of each research variable, this analysis produces a general distribution and percentage (generalization)(Endarto, 2020)In this study, univariate analysis uses distribution/percentage for general data (elderly biodata: age, gender, education level, type of work) and for specific data, namely family support and fulfillment of ADL. Univariate analysis was conducted using the following formula Notoatmodjo (2010) in(Hendrawan, 2020).

$$p = f/n \times 100\%$$

Information :

p = Percentage

f = Results of the object being studied

n = Total number of objects

After calculating the value of each item in the frequency table and the percentage of respondents' answers, then determine the category according to

Arikunto (2006) in (Luchmaniar, 2023) in the interpretation guidelines as follows:

100% = Total of respondents

76% - 99% = Approaching all respondents

51-75% = Most of the respondents

50% = Half of the total number of respondents

26% - 49% = Less than half or a small part of the total respondents

1%-25% = Very few of the respondents

2. Bivariate Analysis

This analysis was conducted on two variables that were suspected to be related or correlated.(Endarto, 2020). The bivariate analysis in this study aims to analyze the relationship between family support and the fulfillment of ADL in elderly people with osteoarthritis. The data analysis method used is the Spearman Rank statistical test, which is a type of statistical test used to test associative hypotheses or relationships between variables when the data is ordinal and one or both data are not normally distributed (Sugiyono, 2011).

- 1) Analyzing the relationship between family support variables and ADL fulfillment variables

To analyze the relationship using the Spearman rank test. In the Spearman rank test the value that will be seen is the significance value (sig-2 tailed), If the 2-tailed sig. value obtained $< \alpha$ (0.05) then H1 is accepted H0 is rejected meaning

there is a significant relationship. However, if the 2-tailed sig. value obtained $> \alpha$ (0.05) then H1 is rejected H0 is accepted meaning there is no relationship.

Next, look at the r value or correlation coefficient, namely to calculate the strength of the correlation in the Spearman rank test, the correlation coefficient value can be seen with the following provisions:

- a. The correlation coefficient value is $0.00 - 0.25 =$ the correlation relationship is very weak.
- b. The correlation coefficient value is $0.26 - 0.50 =$ the correlation relationship is sufficient
- c. The correlation coefficient value is $0.51 - 0.75 =$ strong correlation relationship
- d. The correlation coefficient value is $0.76 - 0.99 =$ very strong correlation relationship
- e. A correlation coefficient value of $1.00 =$ perfect correlation relationship

3.8 Data Presentation

Data presentation is an activity carried out when a set of information is arranged, thus providing the possibility of drawing conclusions and taking action (Rijali, 2019). Through data presentation, the data will be structured and organized, making it easier for readers to understand the intent of the research report. In this study, the researcher presented the data in the form of a frequency distribution table accompanied by an interpretation of the results. The data in the table contains sentence descriptions to explain and facilitate understanding of the tabulated data

3.9 Operational Framework

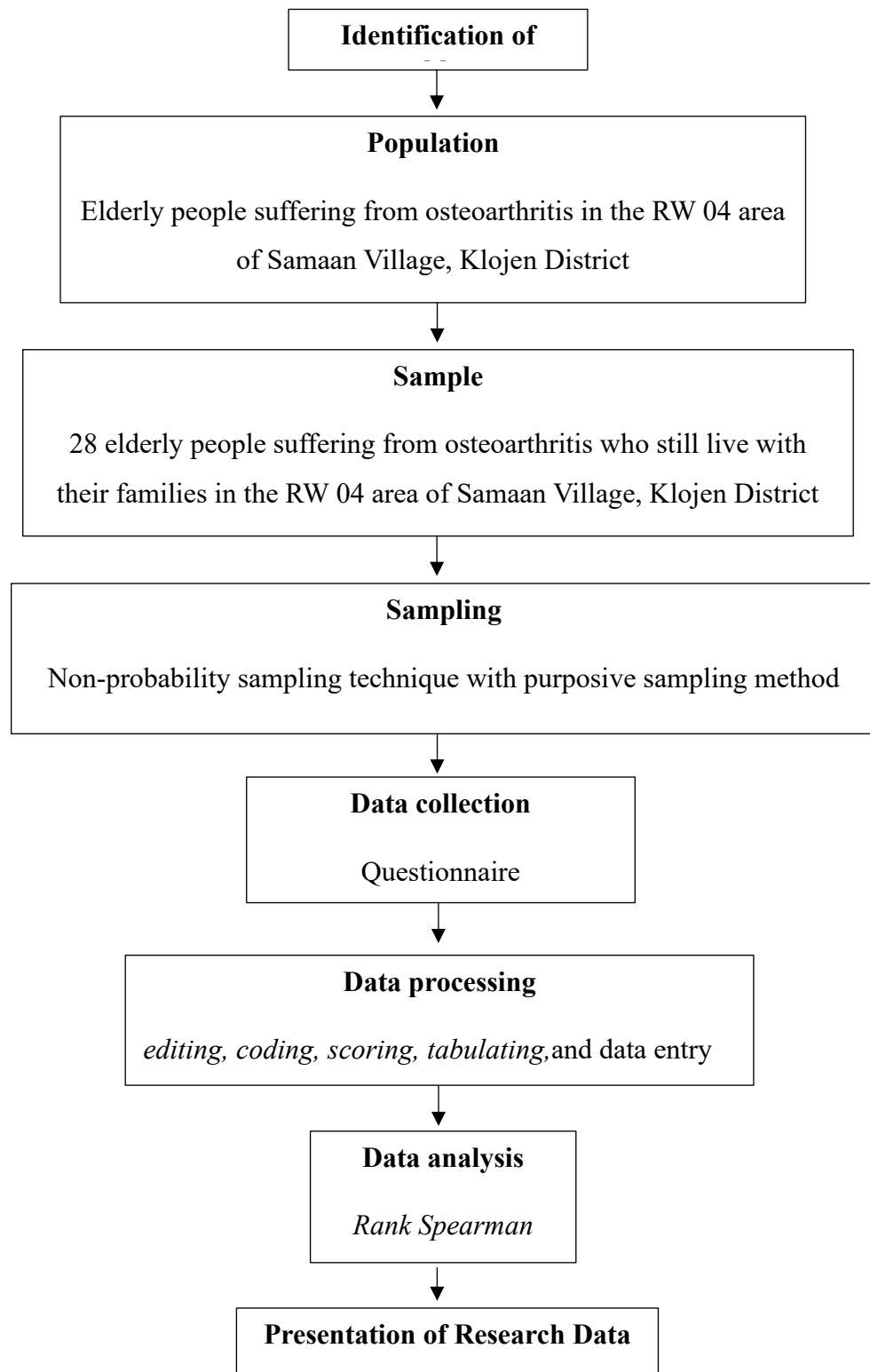


Figure 3.1 Operational Framework

3.10 Research Ethics

Research ethics is a set of moral principles and rules that researchers must follow when conducting research. Applying research ethics is essential to ensure researchers do not violate applicable moral boundaries, norms, customs, habits, and cultural values (Putra et al., 2021). Some ethical principles of research are as follows:

1. Ethical Clearance Submission

Prior to conducting the research, the researcher obtained ethical clearance, a test of ethical feasibility from the Research Ethics Commission (KEPK). The researcher submitted ethical clearance through the Health Research Ethics Commission of the Health Polytechnic of the Ministry of Health, Malang. Based on the ethical test, the research was deemed feasible, as stated in the ethical feasibility statement letter No. DP.04.03/F.XXI.30/00675/2025.

2. *Informed consent* (consent to be a respondent)

Informed consent Informed consent is a form of consent given by respondents to researchers through a consent form. The purpose of informed consent is to ensure that subjects understand the intent and purpose of the research and are aware of its potential impacts. Before respondents provide consent, the researcher first explains the rights they will receive during the research process.

3. *Anonymity*(without a name)

The confidentiality of research subjects is maintained by using initials or numeric codes instead of respondents' names on the research results sheets presented.

4. Confidentiality

All information received by researchers is used for scientific publications and stored in the library while maintaining the confidentiality of research subjects, namely by using initials and codes.