



Flexibility Level of Elderly Community Participating in Gymnastics in Banjarbaru City

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Abstract

The purpose of this study was to determine the level of flexibility of the elderly community who participated in gymnastics in the city of Banjarbaru. This study used a quantitative descriptive method with a chair sit and reach test. The measurement test of the flexibility of the elderly in the city of Banjarbaru. The population was 30 people and the sample was 16 elderly people with a sampling technique using purposive sampling (willingness to be a research sample and age limits). The results of the study showed that the level of flexibility of the elderly community who participated in gymnastics in the city of Banjarbaru was in the very good category (25%), in the good category (12.5%), in the sufficient category (6.25%), in the less category (6.25%), in the very less category (50%). The conclusion of the results of the study showed that the level of flexibility of the elderly community who participated in gymnastics in the city of Banjarbaru was in the very less category.

How to Cite

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INTRODUCTION

Old age is a period of body age that is vulnerable and prone to disease in the course of human life, starting from birth to beyond the age of 60 years (Handayani, 2020). WHO divides the elderly category into 4 groups: Middle age (45-59 years), elderly (60-74 years), elderly old age (75-90 years), and very old age 90 years). As a country in Southeast Asia, Indonesia is now entering an era of a population dominated by the elderly, with around 7.18 percent of the population aged over 60 years (Wahyuni, 2016).

In 2015, WHO predicted that the elderly population would continue to increase. The proportion of the population aged 60 years and over is expected to increase from 12% to 22% in 2050. According to population projection data, in 2017 there was an estimated decrease of 9.03% which is equivalent to 23.55 million elderly people in Indonesia. It is projected that the elderly population in 2020 will reach 27.08 million, in 2025 it will be 33.69 million, in 2030 it will be 40.95 million, and in 2035 it is estimated to reach 48.19 million (Bintang et al., 2025).

In the elderly, there are many declines, including physical abilities such as flexibility. Limited joint movement can reduce flexibility which then limits functional activities. As we age, there is a physical decline, one of which is a decrease in flexibility. Flexibility refers to the range of motion of a joint, as well as the ability of joints, muscles and ligaments to work together to allow free and comfortable movement at the desired maximum range of motion. Flexibility allows body tissues to stretch optimally, so that the body is able to move optimally without pain or obstacles (Gustavina, 2018).

Flexibility according to the Big Indonesian Dictionary, is defined as flexibility, the ability to adapt easily and quickly, suppleness, and not awkward. According to Sajoto, 1995:9 flexibility is a person's ability to adapt to various activities through body movements (Hariyanti, 2019). In terms, various experts and experts in their fields provide various definitions of the word flexibility. In the context of health or medical science, flexibility refers to the range of motion of a joint or several joints as a whole (Hidayat, 2020).

Optimal flexibility contributes to the effectiveness of work and sports activities. To maintain the health of the elderly, it is important to implement a healthy lifestyle. For example, by exercising regularly which can be done by the elderly. We often have difficulty taking something because our flexibility is not good enough,

this also happens to the elderly whose flexibility is decreasing, therefore elderly gymnastics can maintain the flexibility of the elderly. Elderly gymnastics is an activity that can be done by the elderly, namely a series of directed and regular movements. Doing this sports activity is very beneficial for the elderly body to maintain fitness, because it can help reduce pain in the body (Handayani & Sari, n.d.).

Elderly people with poor physical quality will certainly face various obstacles in carrying out daily activities. The physical obstacles experienced will be even greater if not supported by prime physical condition. So it is very important for the elderly to make various efforts to maintain physical fitness regularly and in a structured manner. Arranging physical exercise through sports activities for the elderly will help them stay fit, so that their health can be maintained optimally (Prasetio & Nugraha, 2024).

Sports activities today are no longer just ordinary exercises, but rather a complex and integrated process to achieve the main goal, namely achieving optimal performance. The various factors that influence it require a deep understanding from the trainer in order to adapt and develop innovative and modern training programs (Erliana, 2017). Gymnastics training is very important for the elderly because it provides many benefits for physical health such as increasing and maintaining flexibility so that it is maintained. This is important to prevent body stiffness that often occurs in the elderly. Allows them to remain active in activities.

Regular elderly exercise will have a positive impact on improving the function of body organs and the quality of life of the elderly. Many people can enjoy their old age, but there are also those who have to experience illness. It is important for the elderly to maintain their health by doing activities such as exercise. This activity plays a role in improving health and improving the quality of life of the elderly (Dewi et al., 2021).

Factors associated with Static Flexibility Exercise for Elderly Inferior Extremity Joints were determined by data analysis and discussion. The study's findings demonstrated that static flexibility training significantly and favorably affected the joints of the elderly's inferior extremities, with an average initial test of 0.56 cm and a final test of 4.51 cm, and a significance value (p-value) of 0.000 < 0.05. (Prima et al., 2020).

According to the study's findings and the discussion of using Wiliam Flexion Exercise and Infrared to Increase Trunk Flexibility and Reduce Low Back Pain in the Elderly, patients in the

control group experienced an average increase in trunk flexibility of 8.00 and a decrease in pain of 8.00, while patients in the treatment group experienced an average increase in trunk flexibility of 8.00 and a decrease in pain of 14.00. (Flexion et al., 2024).

In contrast to earlier research, this study looks at elderly people's flexibility. The results of the study of the flexibility of the elderly community who participated in gymnastics in the city of Banjarbaru showed that flexibility in the elderly aged 60 years and over was in the very poor category.

Relevant research belongs to Lita Parama Artha in an article entitled "Chair Sit and Reach Test to Determine Muscle Flexibility Disorders in the Elderly at the Mulyorejo Health Center, Malang City" the purpose of this study was to determine flexibility disorders in the elderly. After conducting a chair sit and reach test on the elderly at the Mulyorejo Health Center, the results showed that >50% of the elderly experienced decreased flexibility (Artha, 2025).

Based on the data obtained from the results of this study in the city of Banjarbaru there is an elderly community aged 60 years and over who participate in gymnastics activities. This activity is carried out once a week in this case there has been no research on the level of flexibility of the elderly community who participate in gymnastics in the city of Banjarbaru.

The purpose of this study was to determine the level of flexibility of the elderly community who participate in gymnastics in the city of Banjarbaru. Research needs to be done because flexibility plays a very important role in the activities carried out by the elderly.

Based on the background of this study, the researcher wants to know the level of flexibility and has never been conducted a flexibility measurement test for elderly gymnastics in Banjarbaru city using the chair sit and reach test, the aim of which is to assess flexibility in the lower body.

METHODS

The type of research used in this study is quantitative descriptive. The quantitative descriptive research method is an approach used to describe, analyze, and explain the phenomena being studied objectively, and draw conclusions according to data that can be measured through numbers according to (Sulistyawati, 2022). The population in this study was the elderly in Banjarbaru city, totaling 30 elderly people. According to Martono (2015), population refers to the area

that is the basis for generalization, which consists of objects or subjects through certain qualities and characteristics that have been determined by researchers to be studied and analyzed in order to draw conclusions. Meanwhile, the sample is part of the population (Suriani, 2023). The sample of this study was 16 elderly people, the determination of the sample used a purposive sampling technique, namely a method of selection and sampling determined by the researcher according to certain considerations (Maharani & Bernard, 2018). The considerations taken in determining this sample were the willingness of the elderly to be samples and the age of 60 years and over.

This study uses one independent variable (X) and one dependent variable (Y). The independent variable is a variable that influences (Simarmata, 2018). The independent variable in this study is the level of flexibility (X). The dependent variable is a variable that is influenced by its relationship. The dependent variable in this study is the elderly in Banjarbaru City (Y). Flexibility level data were collected through a chair sit and reach measurement test, namely the elderly were asked to sit on the edge of a chair with one leg straightened, then tried to reach the tip of their toes with one hand touching the tip of their feet (Artha, 2025).

The chair sit and reach test flexibility test was used to collect data for this study. The test procedures are as follows : Place one hand on the tip of the foot, instruct the sample to inhale, bend the hips to reach forward towards the toes, keep the head up and the back straight, avoid bouncing or fast movements, keep the knees straight and hold the reach for two seconds, and keep the sample sitting on a chair with one leg flat on the floor, the other leg extended forward with the knee straight, the heel on the floor, and the ankle bent at a 90-degree angle, Put one hand on the tip of the foot, tell the sample to inhale, bend the hips to reach forward towards the toes, keep the head up and the back straight, avoid bouncing or fast movements, don't stretch until it hurts, and keep the knees straight while holding the reach for two seconds. The distance between the fingertips and the reach is measured; if the fingertips touch the toes, the score is zero; if they don't, the score is negative.

The chair sit and reach test measurement test is used to measure body flexibility by utilizing both hands. This measurement is very important for body flexibility, which plays an important role in various sports and physical activities (Artha, 2025). Categorization uses category norms according to the classification contained in (Physiope-

dia, 2023). There are 5 categories, namely very good, good, sufficient, lacking, and very lacking.

PERCENTILE	CATEGORY	AGE											
		18-25		26-35		36-45		46-55		56-65		>65	
		M	W	M	W	M	W	M	W	M	W	M	W
90%	WELL ABOVE AVERAGE	22	24	21	23	21	22	19	21	17	20	17	20
80%	ABOVE AVERAGE	20	22	19	21	19	21	17	20	15	19	15	18
70%	AVERAGE	19	21	17	20	17	19	15	18	13	17	13	17
60%	AVERAGE	18	20	17	20	16	18	14	17	13	16	12	17
50%	AVERAGE	17	19	15	19	15	17	13	16	11	15	10	15
40%	BELOW AVERAGE	15	18	14	17	13	16	11	14	9	14	9	14
30%	AVERAGE	14	17	13	16	13	15	10	14	9	13	8	13
20%	WILL BELOW AVERAGE	13	16	11	15	11	14	9	12	7	11	7	11
10%	BELOW AVERAGE	11	14	9	13	7	12	6	10	5	9	4	9

Figure 1. Table of Normative values sit and reach test categories

The analysis of the data selected in this study involves calculating percentages. The data analysis process is carried out descriptively to present the research results in a simpler and easier to understand form. This process involves data tabulation analysis using Microsoft Excel (Lusiana, 2021). A single tabulation is made by applying the following formula:

$$P = \frac{f}{n} \times 100\%$$

P : Percentage

f : Frequency sought

n : Total frequency

RESULTS AND DISCUSSION

participate in gymnastics in the city of Banjarbaru. The results of the data analysis are presented as **Table 1. Table 2.**

Table 1. Distribution of classification characteristics

Classification	Frequency	Percentage
Male	3	18,75%
Female	13	81,25%
Total	16	100%

Table 2. Results of the flexibility level test of the elderly community who participated in gymnastics in the city of Banjarbaru.

Category	Frequency	Percentage
Very Good	4	25%
Good	2	12,5%
Enough	1	6,25%
Less	1	6,25%
Very Less	8	50%
Total	16	100%

Table 1. It is known that the distribution of respondents consists of a male classification with a frequency of 3 people with a percentage of 18.75% and a female classification with a frequency of 13 people with a percentage of 81.25% with a total of 16 people.

Table 2. It is known that the category of flexibility level of the elderly community who participate in gymnastics in the city of Banjarbaru, the category is very good frequency of 4 people with a percentage of 25%, in the good category the frequency of 2 people with a percentage of 12.5%, the category is sufficient frequency of 1 person with a percentage of 6.25%, less frequency of 1 person with a percentage of 6.25%, the category is very lacking percentage of 50% with a total of 16 people with a percentage of 100%.

The results of the level of flexibility of the elderly community who participate in gymnastics in the city of Banjarbaru. 4 elderly people with a very good category, are expected to continue to maintain sports activities so that their bodies remain healthy and maintained. 2 elderly people with a good category, are expected to continue to maintain sports activities so that flexibility is maintained and does not decrease. 1 elderly person with a sufficient category, is expected to increase his sports activities. 1 elderly person from the less category, is also expected to increase his sports activities so that his flexibility increases. While 8 elderly people with a very lacking category, are expected to need to increase sports activities such as gymnastics and maintain a diet to increase good flexibility and do activities more often.

The results of this study provide a very in-depth picture of the level of flexibility of the elderly community who participate in gymnastics in the city of Banjarbaru. Based on the data above, this study emphasizes the importance of a joint gymnastics program carried out once a week at vocational School Telkom to increase flexibility in the elderly. This activity is very helpful for the elderly to continue doing sports activities in old age. This gymnastics sports activity is also carried out in the morning which can help maintain body health and can make the body more energetic all the time and improve body flexibility.

At the age of 60 years and over, they have entered old age, namely the age of the body that is vulnerable and prone to disease in the course of human life (Setiyorini & Kep, 2018). There are many cases of the elderly who often have difficulty taking an object that is difficult to reach because the elderly experience decreased flexibil-

ity. One of the factors that causes decreased flexibility is the lack of doing sports activities such as gymnastics. Elderly gymnastics can be one of the sports that can be done by the elderly to keep the body healthy and maintained.

The results of the flexibility test are expected to be used as a reference for the elderly to actively move and do sports activities. From the results of the flexibility test which is in the very poor category, they must do activities more often and pay attention to their body and maintain their diet. By doing gymnastics regularly, the elderly can maintain body flexibility, and reduce pain or stiffness in the joints.

Exercise is an activity that can provide health and increase flexibility. Many facts show that many changes that occur after the aging process can be inhibited directly or indirectly through an active sports program, including exercises to increase flexibility (Siti Rumliah, 2022). Good flexibility or flexibility is caused by various things, namely a healthy body condition due to maintaining sports activities, diet, and adequate rest.

Decreased flexibility can be prevented, even improved or increased through exercise. As stated by (Prima et al., 2020), exercise has a positive impact on bone health, postural stability, flexibility, and various body movements. In addition, exercise also plays a role in reducing symptoms and stress behavior, increasing self-control and self-efficacy, and maintaining cognitive function.

This study shows that although most elderly people have good flexibility, they must still maintain a healthy lifestyle. Meanwhile, elderly people who have flexibility in the less category are expected to continue to increase their exercise training so that flexibility increases. With the right actions, it is hoped that the quality of life of the elderly community in the city of Banjarbaru who participate in gymnastics activities at Vocational School Telkom can improve by maintaining a healthy lifestyle and maintaining sports activities.

CONCLUSION

From the results of this study, it is concluded that the level of flexibility of the elderly community who participate in gymnastics in the city of Banjarbaru is in the very low category.

Suggestions from this study for the elderly community in the city of Banjarbaru who participate in gymnastics activities at Vocational School Telkom are to maintain their weekly gymnastics sports activities which are carried out once a

week. Morning gymnastics activities are an effective way to start the day with a healthy and fit body. The government in the city of Banjarbaru is expected to be able to provide the sports facilities needed for gymnastics as well as comfortable facilities. With this, it is hoped that the elderly will continue to maintain sports activities, diet, and adequate rest.

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