

Physical Activity and Its Influence on the Quality of Life of the Elderly Population in Tincep Village

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ABSTRACT

Physical activity is any form of body movement that involves the use of energy, including activities performed during leisure time, or as part of one's daily tasks. Quality of life consists of physical health, psychological health, social relationships and the environment. Physical activity is beneficial for the elderly because it can increase endurance so that it is related to quality of life. The purpose of this study aims to determine the relationship between physical activity and quality of life in the elderly in Tincep village. The method used in this study is descriptive correlation with a cross sectional approach. The sampling technique used was quota sampling technique with a sample size of 100 participants. The results showed that most of the elderly were active with a frequency of 79 participants (79%) and the dominant had a good quality of life 95 participants (95%). The results showed a $p\text{-value} = 0.001 \leq 0.05$, indicating that there is a significant relationship between physical activity and the quality of life of the elderly in Tincep village with a value of $r = 0.332$, where there is a weak relationship with a positive direction. Recommendations for the elderly to continue to do physical activity to maintain a good quality of life, where every day they always take medicine to maintain physical activity and do physical exercise to maintain health, for further researchers it is recommended that they can increase the number of samples so that the existing data covers more of an area and add variables such as sleep quality in the elderly.

Keywords: *Physical Activity, Quality of Life, Elderly*

INTRODUCTION

Elderly or elderly is the final stage of the human life cycle that will definitely be experienced by everyone, and at this stage a person will experience many physical, mental, psychological changes, and a decrease in various functions, productivity and difficulty meeting needs that affect quality of life, especially the loss of various functions and abilities that the elderly had before (Subekti & Dewi, 2022).

Quality of life according to the World Health Organization (WHO, n.d.), can be understood as the way individuals see and assess their lives in a social environment that includes existing culture and values, related to the elderly's views on life goals, expectations, living standards, and social attention in society. According to Setiawan (2022), quality of life is a concept that includes various aspects, including the physical and psychological condition of the individual, the level of independence, and the individual's relationship with the environment.

A high quality of life in the elderly will help the elderly achieve better productivity, higher well-being, independence, and better health (Destriande et al., 2021). If the quality of life of the elderly is not properly fulfilled, it can result in a decrease in the life expectancy of the elderly, an increase in the incidence of disease in the elderly, dissatisfaction with the welfare of the elderly, and an increase in mortality (Dewi, 2018). According to Dewi (2023), to improve the quality of life of the elderly, the role of adequate physical activity is very important. Adequate engagement in physical activity provides great benefits for quality of life and health in old age. Physical activity is considered one of the main elements in efforts to improve the quality of life of the elderly, helping the elderly live a more meaningful and healthy life when entering the advanced stages of age.

A research conducted by Mhaka-Mutepfa and Wright (2022) in South Africa found that 25% of the elderly had a poor quality of life. Not only abroad, in Indonesia there is also a similar study conducted by Dian et al. (2021) in the Sitiung health center work area found that 66% of the elderly had a poor quality of life. Research conducted by Samper et al. (2017), at BPLU North Sulawesi, there were 40.6% of elderly people whose quality of life was categorized as sufficient.

Engaging in regular physical activity can be an interesting journey for the elderly to improve quality of life. Participating in light exercise can offer many benefits to the elderly, such as improving the elderly's heart health, increasing the elderly's muscle strength and even achieving better balance in the elderly's life. Physical activity is any action that involves skeletal muscles and requires energy consumption (Ibrahim et al., 2023). Physical activity is the movement of limbs performed by individuals by utilizing the body's internal energy (Amenani & Januarto, 2022).

Physical activity in the elderly is different from other ages because it must be adapted to the abilities and conditions of the elderly, due to differences in the endurance of each elderly person. Elderly people can do physical activities such as farming, gardening, and walking up stairs (Mubarroq et al., 2022). Physical activity of the elderly consists of a wide variety of daily activities, including work, exercise, household tasks (Ariyanto et al., 2020).

Based on research conducted by (Remón et al., 2020) Elderly people in the European Union 55.5% are sufficient in doing physical activity. Research conducted in Malang by Salsabilla et al. (2023), as many as 48% of the elderly who only do light physical activity. In North Sulawesi, Palit et al. (2021), conducted research on the physical activity of the elderly, especially in the Sangihe islands where 28.8% of the elderly do light physical exercise, household tasks (Ariyanto et al., 2020).

The results of a preliminary study on the elderly in Tincep Village were obtained, five out of 10 elderly with less active physical activity had a mediocre quality of life, three out of 10 with active physical activity had a mediocre quality of life and two out of 10 with active physical activity had a good quality of life. Based on the background of the above problems, the researcher wants to conduct research on “Physical activity and its influence on the quality of life of the elderly population in Tincep Village”.

The formulation of the problem in this study is to find out how is the description of physical activity and quality of life in the elderly in Tincep village and whether there is a significant relationship between physical activity and quality of life in the elderly in Tincep village.

The purpose of this study was to determine the relationship between physical activity and the quality of life of the elderly in Tincep village.

LITERATURE REVIEW

According to Teoli and Bhardwaj (2023), quality of life is a term used to describe a person's well-being, both individual and population, which consists of both positive and negative aspects of the elderly's overall existence. Examples of quality of life include personal health (physical, mental, and spiritual), relationships, educational status, work environment, social status, wealth, sense of security and safety, freedom, autonomy in decision-making, and sense of happiness.

(WHO, n.d.) describes quality of life as a personal assessment of how a person sees the reality of the elderly in relation to the goals of the elderly, based on the cultural perspective and value system of the elderly. Through the quality of life measurement instrument issued by the World Health Organization WHOQOL-BREF there are 26 questions which are divided into four dimensions, namely, physical health, psychological health, social relationships and the environment. Good and poor quality of life can be measured by the dimensions of quality of life, namely physical health, psychological health, social relationships and the environment. Quality of life is said to be good when individuals feel balanced and happy in various dimensions of quality of life, and it is said to be unfavorable if the quality of life there is no imbalance or dissatisfaction in several dimensions of quality of life.

Based on the results of research conducted by Ardiani (2019) that Quality of Life in the elderly can be influenced by several factors, where these factors are gender, marital status, occupation, and income.

WHO defines physical activity as any body movement produced by skeletal muscles that requires the use of energy. Physical activity includes all forms of movement, including during leisure time, for transportation to and from places, or as part of one's job. Both moderate and high-intensity physical activity can improve health. Physical activity refers to body movements that are performed by skeletal muscles and require the use of energy. It involves a variety of activities such as working, playing, doing household chores, traveling, and recreational activities (Kusumo, 2020).

Based on the Indonesian Ministry of Health (2013) through one of its programs GERMAS (Healthy Living Community Movement) divides physical activity into three types, namely daily physical activity, physical exercise, and sports. Daily physical activities such as Doing daily chores around the house can help you burn calories gained from food consumed. For example, doing laundry, mopping, walking, cleaning windows, gardening, ironing, playing with children, and so on. Each of these activities can burn between 50 to 200 kalori; physical exercise is an activity that is carried out in a structured and planned manner, such as walking, jogging, push-ups, stretching, aerobic exercise, cycling, and the like and sport is defined as

physical activity carried out in a structured and planned manner, following applicable rules, with the aim not only to improve body fitness but also to achieve achievement. Examples of sports include soccer, badminton, basketball, swimming, and so on.

Based on the Ministry of Health of the Republic of Indonesia, (2013), physical activity can be divided into two, namely active where individuals do heavy or moderate physical activity or both and inactive if individuals do not do heavy or moderate physical activity. According to Hapsari (2018), physical activity is divided into three levels where there is light physical activity, moderate physical activity, and heavy physical activity. Light physical activity is defined as 75% of the time spent sitting or standing and 25% moving, for example, sitting, standing, washing dishes, cooking, ironing, playing music, watching TV, driving, and walking slowly; Moderate physical activity is when 40% of the time is spent sitting or standing and 60% is spent on work activities specific to the job, for example, mopping, sweeping, washing cars, planting plants, cycling to and from work, walking fast, and exercising and Strenuous physical activity is 25% of the time spent sitting or standing and 75% of the time spent on work activities specific to the job, for example, carrying heavy objects, gardening, cycling (16-22km/h) and exercising.

The elderly have different body strengths from people who are still easy so that the elderly must adjust their physical activity properly not to cause excessive fatigue, therefore WHO (2020) recommends physical activity for the elderly, namely, first, doing aerobic physical activity or a mixture of moderate and heavy physical activity for 75-100 minutes a week, second, do physical activities that strengthen muscles involving all major muscle groups two or more days a week, third, replace sitting time with light physical activity, and fourth, do varied multicomponent physical activities that emphasize functional balance and strength training with moderate or greater intensity, three or more days a week, so as to increase functional capacity and prevent falls.

METHODS

This study used a descriptive correlational research method with a cross sectional research design. Researchers used several formulas in an effort to describe the relationship between the x variable and the y variable. To analyze the first and second problem statements, how is the description of physical activity of the elderly in Tincep Village and how is the description of the quality of life of the elderly in Tincep Village, researchers used the frequency and percentage formulas. Responding to the third problem statement, namely whether there is a significant relationship between physical activity and the quality of life of the elderly in Tincep Village, researchers used the Spearman Rank formula. Based on the results of the analysis by considering the significance value (p-value), if the significance value ≤ 0.05 , then H_0 is rejected and vice versa, if the significance of $H_0 > 0.05$, then H_0 fails to be rejected (Handayani & Ariyani, 2018).

Researchers utilize the correlation coefficient r, which has a range of values from 0 to 1, to reflect the strength of the relationship between two variables. The direction of the correlation relationship is determined based on the r value, whether it is positive or negative. When the value of $r = +1$ or close to +1, it indicates that the correlation between the two variables is very strong and positive. Conversely, if $r = -1$ or close to -1, it indicates that the

correlation between the two variables is very strong and negative, showing the tendency of the relationship in the opposite direction. The indication for the case of $r = 0$ or close to 0, indicates that the correlation between the two variables is very low or even no relationship. Moreover, in a positive correlation, the two variables have a unidirectional relationship, where a high value of X is directly proportional to a high value of Y on the contrary, in a negative correlation the relationship between the two variables is inverse, where a high value of X is inversely proportional to a low value of Y.

The population in this study is the elderly in Tincep Village with a total of 264. To determine the number of samples in this study, the quota sampling technique was used, determining the sample from a population that has certain characteristics until the desired quota, with the limited time owned by the researcher so that the researcher only took 100 (38%) participants used in this study.

Inclusion criteria in this study, elderly people who live in Tincep Village aged 60 to 74 years and still live in Tincep Village, elderly people who can still communicate well and are willing to be participants in this study. Exclusion criteria in this study, elderly who live in Tincep Village but not domiciled in Tincep Village who have passed the age of 74 years and can no longer communicate well and are not willing to be participants in this research.

The questionnaire to measure physical activity was adopted from (Gawitri, 2023) which consists of 12 questions related to physical activity in the elderly. The scale used in this study is a Likert scale with four answer options each score is never = zero, rarely = one, sometimes = two, often = three, with a Cronbach's α value of 0.844. Test-retest reliability was moderate with an ICC value of 0.728 (95% CI 0.590-0.825). Each question has its own weight and each frequency has a different duration value which will be multiplied by the weight of each question, specifically for question number 12 the number of hours worked a week is divided by seven and then multiplied by its weight. After getting the value of each question, the value is summed up and then interpreted into two categories, namely less active if the score is <125 and active if ≥ 125 .

Measurement of quality of life variables using the WHOQOL BREF questionnaire. This questionnaire consists of 26 questions with scoring using the Likert Scale (WHO, 1996). The structure of the questionnaire includes generally positive questions related to quality of life. There is a combination of positive and negative questions on one specific question. The questionnaire describes four domains with different measurement tools, including an evaluation scale that includes responses from “very poor” to “very good” and “very unsatisfactory” to “very satisfactory”. In addition, there is an intensity scale that involves responses from “not at all” to “in excessive amounts”, capacity scale with responses from “not at all” to “fully experienced”, and frequency scale with responses from “never” to “always”. Evaluation was done by giving a score from 1 to 5 for positive questions with 1 indicating the lowest scoring answer and 5 indicating the highest scoring answer for negative questions, numbers 3, 4, and 26 being 1=5, 2=4, 3=3, 4=2, 5=1. Each domain has its own score which is then converted to a score of 0-100 and all the converted scores in each domain are added and then divided by four. A scale of 0-50 indicates poor quality of life, and a scale of 51-100 indicates good quality of life (Najoan, 2021).

In conducting this study, the researcher paid attention to a number of nursing ethical principles that are closely related to the focus of the study. There are eight principles of nursing ethics integrated in this study, namely the principles of autonomy, beneficence, justice, nonmaleficence, veracity, confidentiality, and fidelity.

RESULTS AND DISCUSSION

The description of physical activity in the elderly in Tincep village can be seen in

Table 1.

Physical Activity Overview

Categori	Frekuensi	Presentase (%)
Active	79	79,0
Less active	21	21,0
Total	100	100,0

Based on table1, it can be seen that the description of physical activity in the elderly in Tincep Village is the highest, namely the active category with 79 participants (79.0%) and 21 participants (21.0%) in the less active category. Based on the physical activity description table, it is found that the dominant elderly in Tincep Village have physical activity in the active category with a total of 79 participants (79.0%) out of a total of 100 participants.

According to the Ministry of Health of the Republic of Indonesia (2013), active physical activity is where individuals do heavy or moderate physical activity or both. Moderate physical activity involves 40% sitting or standing time and 60% for specialized work activities such as mopping sweeping, washing cars, planting plants, cycling to and from work, walking fast, and exercising, while heavy physical activity involves 25% sitting or standing time and 75% for specialized work activities such as carrying heavy goods, gardening, cycling (16-22km/h), and exercising.

Physical activity refers to body movements that are performed by skeletal muscles and require the use of energy. It involves a variety of activities such as working, playing, doing household chores, traveling, and recreational activities (Kusumo, 2020). The results of a research conducted by Yusrini et al. (2023) found that there are several factors that influence the physical activity of the elderly, including the elderly doing gymnastics carried out by the government in each village and also some of the elderly utilizing existing public facilities, namely the field as a place to exercise.

Research conducted by Gawitri, (2023) revealed that there was physical activity with an active category of 61.2% in the elderly in Bali. The same research was conducted by Yusrini et al. (2023) on the elderly in Baiturrahman District, Banda Aceh City, found that 67.8% of the elderly had physical activity in the active category.

Based on the results of data from the questionnaire, the lowest answer is about special exercises for lifting weights and push-ups and the most answers are physical activities such as walking outside the house, sweeping, taking care of the yard. There are also some elderly people who spend most of their time doing physical activities for gardening and carrying heavy goods such as firewood and crops from the garden.

The picture of quality of life in the elderly in Tincep village can be seen in table 2.

Table 2

The picture of quality of life in the elderly

Categori	Frekuensi	Persen
Good	95	95,0%
Less	5	5,0%
Total	100	100

Based on table 2, it can be seen that the picture of quality of life in the elderly in Tincep village is good, totaling 95 participants (95.0%) and less, totaling 5 participants (5.0%). Based on the quality of life description table, it is found that the domain of the quality of life description in the elderly in Tincep village is in the good category with a total of 95 participants (95.0%) out of a total of 100 participants.

Based on WHO, good and poor quality of life can be measured by the dimensions of quality of life, namely physical health, psychological health, social relationships and the environment. Quality of life is said to be good when individuals feel balanced and happy in various dimensions of quality of life. The quality of life of the elderly is how well they feel satisfied with the circumstances or situations experienced, which can be influenced by illness or disease treatment. The quality of life of the elderly can be reflected in general well-being, emotions, physical condition, daily activities, cognitive function, and social interaction (Destiwati, 2016).

Research conducted by Salsabilla et al. (2023) in Tlogosari Pati Village, Central Java, investigated the quality of life in the elderly. The results of the study showed that 68.3% of the participants experienced a good quality of life. The findings in the study conducted by Salsabilla et al. (2023) provide an overview of the conditions of well-being and life satisfaction in the elderly population in the region.

Based on the data results from the questionnaire answers, the lowest answer is regarding the medical needs that the elderly must consume every day, however, the elderly in Tincep Village have a good quality of life because the elderly have the ability to walk well, have full activities, can interact with others well, also manage stress, and establish positive interactions around them in the environment, so it can be said that the quality of life of the elderly in Tincep Village is predominantly good.

The relationship between physical activity and quality of life in the elderly in Tincep village, researchers used the Spearman Rank formula, can be seen in table 3.

Table 3

Relationship between Physical Activity and Quality of Life

Variabel	Koefisien Korelasi	<i>p-value</i>	Interpretasi
Physical Activity	0.332	0,001	Signifikan
Quality of Life			

Based on the results in table 8, it can be seen that the p value obtained is $0.001 \leq 0.05$, indicating that there is a significant relationship between physical activity and quality of life in the elderly in Tincep Village so that the null hypothesis (H0) is rejected. It can be interpreted that there is a significant relationship between physical activity and quality of life in the elderly in Tincep Village. The value of $r = 0.332$ where there is a weak relationship with a positive direction which means that if the physical activity of the elderly is good, then the quality of life will be good or vice versa.

Physical activity is beneficial for the elderly because it can increase endurance so that it affects the quality of life of the elderly who can move and socialize well. The elderly have different body strengths from younger people, so it is important for the elderly to adjust physical activity properly to avoid excessive fatigue. WHO recommends several physical activities for the elderly, including doing aerobic physical activity or a mixture of moderate and vigorous physical activity for 75-100 minutes a week, as well as exercising major muscles two or more days a week. Good physical activity prevents the elderly from various kinds of chronic diseases that occur in the elderly such as hypertension, stroke, and heart disease which can cause poor quality of life (Ariyanto et al., 2020).

This research is also in line with research conducted by Ariyanto et al. (2020), who found that elderly people who are physically active tend to have a better quality of life, showing a significant relationship between physical activity and quality of life in the elderly population. In line with research conducted by Palit et al. (2021), that there is a significant relationship between physical activity and quality of life.

CONCLUSION, IMPLICATION, SUGGESTION, AND LIMITATIONS

Based on the results of research that has been conducted on 100 willing participants, the researchers draw the following conclusions: The description of physical activity in the elderly in Tincep Village is in the active category; the description of quality of life in the elderly in Tincep Village is in the good category; there is a significant relationship between physical activity and quality of life in the elderly in Tincep Village.

The results of this study are expected to provide motivation for the elderly to continue to do physical activity to maintain a good quality of life, and for the elderly who have a poor

quality of life where every day they always take medicine to maintain physical activity and continue to do physical exercise to maintain health; for educational institutions, this research is expected to be a reference in the Klabat University literature as a reference on the relationship between physical activity and quality of life and for further researchers it is recommended to assess what physical activities are most done by the elderly and it is also recommended that they can increase the number of samples so that the existing data covers more of an area and add variables such as sleep quality in the elderly.

Constraints and limitations in the conduct of this study include potential participants who were not available when visited at the site.

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