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THE INFLUENCE-FACTOR OF CYCLING AS PHYSICAL ACTIVITY IN ELDERLY POST COVID-19

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Abstract

As the age increases, the number of deaths caused by Covid-19 becomes prominent. In China, 3,6% of people aged 60-69 years died, followed by 8% of those aged 70-79 years because older people commonly experienced various comorbidities such as cardiovascular, diabetes, chronic respiratory disease, and hypertension. Therefore, if older people perform cycling consistently as an exercise, it would increase their immunity and derive long-term benefits. This study was a descriptive-quantitative study aimed to describe the factors that influence physical activity, specifically cycling, in aged-people post-Covid-19. The International Physical Activity Questionnaire (IPAQ) has been used to collect the information. The results showed that 88,6% of elderly people cycle because they know about the importance of exercise in health. In terms of age, the people aged between 55 and 60 years old were dominated by cycling with 29% of them being female.

Keywords: *physical activity; cycling; patient post-covid-19; elderly*

1. Introduction

In the current pandemic era, the elderly are the riskiest group of being sick, infected, or dying caused by Covid-19 (Müller, 2020). Data on deaths from Covid-19 in several countries show an increase with age, for example in China, 3.6% of people aged 60-69 died, 8% of those aged 70-79, and 3.6% of the population aged more than 80 years old died (Damiot et al., 2020). This phenomenon happened because the elderly commonly experienced various comorbidities such as cardiovascular, diabetes, chronic respiratory disease, and hypertension (Rydyznski Moderbacher et al., 2020).

In Indonesia, according to the Ministry of Health 2020, deaths due to the Covid-19 increase with age, which is 8% in the population aged 45-54 years old, 14% in the population aged 55-64 years old, and 22% in those who are more than 65 years (Yurianto, 2020). Thus, promotive and preventive actions should be done in these populations to prevent the transmission of the virus, whether at the family level, community, or health care facilities (Yousfi et al., 2020).

Weekly exercise can enhance and strengthen the immune system which will be the best choice to improve the long-term health status by performing regularly (Sulaeman & Supriadi, 2020). The result shows that 60% of Covid-19 patients were those who had lower physical activity levels, body mass index of overweight and obesity levels, and a history of metabolic syndrome (Jakobsson et al., 2020). The concept of exercise in the health aspect is movement-intensive, free from stress, and done adequately, easily, inexpensively, and physiologically (Andriana et al., 2021).

A sport that was popular during the Covid-19 pandemic is cycling which is environmentally

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friendly, safe, and can maintain a distance between cyclists. This trend was the result of the implementation of the PSBB in Indonesia. At that time, people were bored at home and decided to go cycling to tackle the boredom, and seek fresh and clean air (Mulyadi et al., 2020). Cycling is a low-impact sports activity that can maintain body fitness. Cycling activities can bring many benefits to the body, including improving the health of the heart, lungs, and circulatory system, preventing obesity, burning fat, and increasing energy or body strength (Sulaeman & Supriadi, 2020).

According to the above mentioned, in this pandemic Covid-19 era, motivating the elderly to regularly perform physical activity to increase body health, and reduce stress and anxiety is paramount (Al Mubarroh et al., 2021). One of the efforts to prevent the spread of Covid-19 among the elderly is to carry out promotional and preventive efforts, including education for the elderly (Sari et al., 2021).

2. Method

This study was a descriptive-quantitative study aimed to describe the factors that influence physical activity, specifically cycling, in aged-people post-Covid-19. The methodology used in this research is a survey method that collects information from behavior, knowledge, willingness, opinion, and values. One way to collect surveys is by distributing questionnaires using google forms or through direct interviews.

The setting of this research was in Surakarta city which was conducted around March 2022. The targeted population was posted Covid-19 patients with clustered random sampling as the method to get the sample. The inclusion criteria were posted Covid-19 patients female and male, aged above 55 years old, and have been declared cured of Covid-19. The exclusion criteria were those who refused to be respondents and had difficulty communicating.

Data collection in this study used a questionnaire that was divided into three parts. The first is the explanation of the research subject, and the Second is the informed consent as consent to being a research subject. And the third part is the IPAQ (International Physical Activity Questioner) questionnaire.

The primary data were obtained by questionnaire from the International Physical Activity Questionnaire (IPAQ) which includes the characteristics of the participants as well as the documented interview.

Univariate, and bivariate were used in this study. Univariate analysis was used to explain and describe the characteristics of the variables resulting in the frequency distribution and percentage for each variable(Notoatmodjo, 2012). While the bivariate analysis was used to determine the correlation of cycling physical activity scores on elderly post-covid-19 patients in Surakarta City. Pearson correlation test is used if the data is normally distributed. Spearman correlation is used if the distribution is not normal. The correlation is said to be meaningful if the p-value <0.05. The correlation coefficient is expressed in r, the closer the value of r is to 1, the stronger the correlation strength.

3. Result and Discussion

This study aimed to describe the factors that influence physical activity, specifically cycling, in aged-people post-Covid-19 in Surakarta city. The total participants were 100 elderly from two districts in Surakarta city which are Laweyan and Serengan. The International Physical Activity Questionnaire (IPAQ) has been used to collect information related to physical activity, especially cycling. The distribution of the basic characteristics based on IPAQ was shown in Table 1.

Table 1. The distribution of the basic characteristics based on IPAQ

Age	Category of physical activity							
	Light		Moderate		High		Total	
	n	%	n	%	n	%	n	%
45 – 54	3	3 %	33	33 %	16	16%	50	52%
55 - 64	7	7 %	17	17 %	3	3 %	27	27 %
> 65	17	17 %	3	3 %	1	1 %	21	21 %
Sex								
Male	20	20%	24	24%	12	12%	56	56%
Female	7	7%	29	29%	8	8%	44	44%

According to the Ministry of Health (2014), the elderly are divided into 3 groups, namely: the Vitality Period (45-54 years), the Presenium Period (55-64 years), and the Senium Period (>65 years) (Sianipar, 2020). According to the Table 1, the majority of respondents aged 55-60 years have moderate levels of physical activity

counted 33 people (33%), and among respondents aged 60-65 years majority have moderate levels of physical activity as many as 17 people (17%), the majority of respondents aged over 65 years have a light physical activity level as many as 17 people (17%).

While the description of physical activity according to gender characteristics based on the IPAQ shows that 24 male respondents have a moderate level of physical activity (24%) and 28 female respondents have a moderate level of physical activity (28%). Therefore, it can be concluded that based on age and gender characteristics, the level of physical activity of elderly post-Covid-19 patients was mostly in the moderate category counted for 53 people (53%).

Physical activity, especially cycling in elderly post-covid-19 patients, was measured by the IPAQ which contained questions about the duration and frequency of physical activity in the past week (Ashadi et al., 2020). The following is the distribution of the description of the physical activity by category based on the IPAQ.

Table 2. The distribution of Physical Activity based on IPAQ

Physical activity	N	Percentage (%)
Light	27	27 %
Moderate	53	53 %
High	20	20 %
Total	100	100 %

According to Table 2, IPAQ shows the number of respondents who have a light activity level was 27 people (27%), 53 people have a moderate activity level (53%) and 20 people have a heavy activity level (20%). Therefore, the majority of elderly post-covid-19 patients do moderate physical activity.

While the cycling activity of elderly post-covid-19 patients was measured from the results of a questionnaire consisting of 15 questions on the benefits of exercise, sports activities, the importance of exercise for health, fondness for exercise, and other goals of exercise (Nurmasitoh, 2015). Before conducting a data description, it is necessary to test the validity and reliability of the questionnaire results regarding the motivation for cycling activities.

Table 3. The frequency distribution of cycling activities in post-Covid-19 patients

Interval	Category	Frequency	Percentage
X>52	Very High	2	2%
47<X≤52	High	6	6%
43<X≤47	Moderate	33	33%
38<X≤43	Low	30	30%
X≤38	Very low	29	29%
Total		100	100%

Based on table 3, the results of the cycling activity of elderly post-covid-19 patients are obtained which are included in the very high category of 2% (2 people), high category of 6% (6 people), medium category of 33% (33 people), category low by 30% (30 people) and very low category by 29% (29 people). Thus, it can be concluded that out of the 100 elderly post-covid-19 patients, most of them had moderate cycling activities with scores between 43 and 47.

The factor that influences cycling as physical activity in elderly post-covid-19 patients is reviewed from 5 assessment indicators, namely the benefits of exercise, sports activities, the importance of exercise for health, a passion for exercise, and other goals of exercise.

Based on table 4, the results show that the whole percentage of the factors that influence the elderly to do cycling as physical activity was 72.04% which is in the good category. When reviewed based on the indicators of the assessment of exercise motivation as follows, the indicators regarding the benefits of exercise and sports activity were in the good category with a percentage of 62.09% and 68.75% respectively. While the importance of exercise in health and doing exercise as a passion is in the very good category with a percentage of 86,6% and 82.16% respectively.

Table 4. The calculation of factor that influences cycling activities

Indicator	Total items	Real score	Maximum score	Percentage	Category
Benefit of exercise	7	1987	3200	62.09%	Good
Sport activities	1	275	400	68.75%	Good
The importance of exercise for health	2	709	800	88.6%	Very good
A passion for exercise	2	654	800	81.75%	Very good
Other goals of exercise	3	986	1200	82.16%	Very good
Total	15	4611	6400	72.04%	Good

Based on the table above, the results of the bivariate analysis showed that physical activity data for elderly post-covid-19 patients were not normally distributed using the Kolgomorov Smirnov test, so the data analysis used was the Spearman Correlation method. The results of the Spearman Correlation method obtained a significance value of 0.289 or more than 0.05, which means that there is no correlation of -0.134 which means that there is a very weak relationship. However, in this study, the correlation coefficient can be ignored because the two variables do not have a relationship.

Table 5. Correlation of Cycling Physical Activity with Elderly Post Covid-19 Patients

		Elderly Post Covid-19 Patients	Cycling Physical Activity
Elderly Post Covid-19 Patients	Correlation Coefficient	1.000	-0.134
	Sig. (2-tailed)	.	0.289
	N	100	100
Cycling Physical Activity	Correlation Coefficient	-0.134	1.000
	Sig. (2-tailed)	0.289	.
	N	100	100

This is not in line with research (Deniati & Annisaa, 2021) with a literature review approach from various studies, which states that there is a relationship between cycling exercise and the immunity of the elderly during the pandemic.

4. Conclusion and Suggestions

According to the current study, several conclusions could be taken into account. The factors that influence the elderly to do cycling as a physical activity located in Surakarta were because 88% of them knew about the importance of exercise for health. Regarding the ages as the factor, the most common cyclists were those who were 55-60 years old. Moreover, if put sex is the factor, 29% of elderly female do cycling as their physical activity which was included in the moderate category.

Therefore, the researcher suggests that the elderly is expected to always maintain health, not only doing activities outside the home but also inside the home, maintaining personal hygiene as well as house cleanliness, and consuming nutritious foods because it is very important to maintain body immunity during the Covid-19 pandemic. Moreover, the elderly must always comply with health protocols when carrying out cycling activities and always keep their distance and avoid crowds.

Recommendations for further research, to be more specific about the factors that affect cycling physical activity, in addition, it is necessary to conduct a wider study of the sample currently used.

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