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Elderly Physical Activity during COVID-19 Pandemic in Nursing Home of Banyuwangi

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ABSTRACT

The elderly experience limitations in carrying out physical activities during the COVID-19 pandemic, which can reduce the welfare of the elderly. Due to the aging process, physiological changes and decreased immune function in the elderly make the elderly group a group with a high risk of exposure to COVID-19. This study aimed to analyze physical activity before and during the pandemic covid of the elderly in the Nursing Home of Banyuwangi. Descriptive quantitative research was performed among 32 elders in May 2021. A self-administered questionnaire was used to identify the characteristics of the elderly and their physical activity with the Physical Activity Scale for the Elderly (PASE). The One-sample Kolmogorov-Smirnov test was used to reach the goal of this study. The result shows that the physical activity of the elderly didn't significantly change during the pandemic t = 0,119; p-value 0,905. It can be concluded that there is no significant change in elders' physical activity during the COVID-19 pandemic.

Keywords: physical activity; the COVID-19 pandemic; elderly

INTRODUCTION

Coronavirus 2 (SARS-CoV-2) is the cause of an infectious disease called Coronavirus Disease (COVID-19). This disease can cause acute respiratory syndrome and was first detected in December 2019 in Wuhan, China (Woods et al., 2020). This virus has spread very quickly until the WHO, on March 11, 2020, declared this virus a global pandemic (Shahid et al., 2020). The COVID-19 pandemic has an impact on almost all age groups. However, the effect on the health of the elderly group is higher than that of other age groups (Pant & Subedi, 2020). The elderly is one of the vulnerable groups with high morbidity and mortality rates due to the COVID-19 pandemic (Kemenkes, 2020). The pandemic scale has created dramatic challenges worldwide in terms of economics, social interactions, and individual lifestyles (Woods et al., 2020). Data from the WHO since January 13, 2021, shows that around the world, more than 90 million people have been confirmed to have COVID-19, and almost 2 million of them have died (WHO, 2021). Meanwhile, in Indonesia, more than 800,000 have been confirmed to have COVID-19, with 24,000 of them dead (Kemenkes, 2021). In Indonesia, in the population aged 45-54 years, the mortality rate is 8%, at the age of 55-64 years by 14% and at the age of more than 65 years by 22%. This shows that in Indonesia, along with increasing age, the mortality rate will also increase (Indarwati, 2020).

Physiological changes due to the aging process decreased immune function, and comorbidities in the elderly make the elderly group a group with a high risk of exposure to COVID-19 (Malone et al., 2020). In the elderly, there is a decrease in the immune system, where there is a decrease in the body's response to infection. The thymus mass will continue to decrease until the serum activity of the thymus hormone is almost undetectable in the elderly (Eliopoulus, 2018). Chronic disease is a major problem in the elderly group. The elderly group will experience chronic diseases more often than the younger age group. In general, the elderly has at least one chronic disease, and some have several chronic diseases, which are called comorbidities. Chronic conditions that occur in the elderly will result in some limitations of the elderly in carrying out activities (Eliopoulus, 2018).

During the pandemic, many countries have implemented precautionary measures, including social isolation, lockdowns, and curfews to contain the spread of the COVID-19 pandemic. Efforts to protect the elderly from being infected and reduce the spread of COVID-19 are by asking the elderly to isolate themselves and stay at home for a long time (Radwan, Radwan, & Radwan, 2020). Older people living in informal settlements will have a higher risk due to overcrowded conditions, limited access to health services, poor water and sanitation facilities (United Nations, 2020). Quarantine policies will have an impact on sedentary lifestyles in children, adults, and even more so in the elderly (Goethals et al., 2020). In addition, there is concern that prolonged stay at home may increase sedentary behaviors,

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such as excessive spending on the amount of time sitting, lying down, or lying down to watch television, read, use mobile devices. This triggers an increased risk or potential for chronic and acute health damage (Cunningham & O' Sullivan, 2020).

The results of a preliminary study conducted by researchers at a nursing home of Banyuwangi show that what the elderly do to fill their free time includes gathering with friends, watching TV, and making skills such as woven bamboo for fish doormats, and dusters. The nursing home of Banyuwangi has a physical activity schedule that is routinely held every Monday to Friday. Social guidance activities are conducted on Mondays, aerobic exercises are carried out on Tuesdays, electronic music is carried out on Wednesdays, spiritual guidance is carried out on Thursdays, and tera gymnastics or elderly exercises are carried out on Fridays. Research conducted by Nisa (2019) before the COVID-19 outbreak, showed that many elderly living in nursing homes of Banyuwangi were classified as independent, this was supported by the elderly who were always active in carrying out activities scheduled by the orphanage (Nisa, Aini, & Rosyidi, 2019). With supporting facilities, it is hoped that physical activity can still be carried out even during the COVID-19 pandemic. As facilitators, nurses need to conduct research related to the physical activity of the elderly during the COVID-19 pandemic, which then makes innovations to fill spare time in the elderly with physical activities that are beneficial for the health of the elderly. Based on this data, it is necessary to conduct a study on the physical activity of the elderly during the COVID-19 pandemic situation, and the researcher aims to research the Description of Physical Activity in the Elderly during the COVID-19 Pandemic at the Nursing Home of Banyuwangi. The results of this study are expected to be a source of information regarding the description of the physical activity of the elderly during the COVID-19 pandemic and be used as input to maintain the physical activity of the elderly despite the COVID-19 pandemic.

METHOD

This research is a quantitative descriptive study with a cross-sectional design. The population in this study were all elderly living in a nursing home of Banyuwangi in the period of May 2021 with a total elderly population of 100 people. The number of samples in this study was 32 elderly who were selected by purposive sampling technique. The stages of data collection carried out by the researcher began with explaining the aims and objectives of the study and submitting an informed consent form signed by the elderly when the elderly was willing to become respondents, screening for COVID-19 symptoms, filling out the characteristics sheet of the elderly, testing the Mini-Mental State Examination. MMSE), measuring the level of independence of the elderly with the Katz Index and filling out the Physical Activity Scale for Elderly (PASE) questionnaire. The data collection process was carried out by implementing health protocols, researchers and the elderly washed their hands using soap and running water/hand sanitizer, used masks, and kept their distance when interacting. Researchers used PPE such as face shields, gloves, and aprons.

This study analyzed the data using univariate analysis. Physical Activity data was tested using the one-sample Kolmogorov-Smirnov test to determine the significance of changes in the physical activity of the elderly and the results of each indicator consisting of indicators of leisure time activity household activity and work-related activity. Significant changes in physical activity with p-value <0.05. This research was conducted an ethical test at the Faculty of Nursing, Universitas Jember, and was declared to have passed ethics through the KEPK of the Faculty of Nursing, the Universitas Jember with No.78/UN25.1.14/KEPK/2021.

RESULT

Characteristics of the Elderly

The elderly according to the age of respondents who are in the elderly category there are 18 elderly (56.3%), old there are 13 elderly (40.6%), and 1 elderly (3.1%) who are in the very old category. The number of respondents in this study between men and women was the same, namely 16 (50%) for male respondents and 16 (50%) for female respondents. In marital status, there is 1 elderly (3.1%) who has married status, and 31 (96.9%) elderly have widow/ widower status.

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Table 1. Characteristics of the elderly during the COVID-19 pandemic based on Age, Gender, Marital Status, Resting, Walking, Low Exercise, Moderate Exercise, High Exercise, and Muscle strength at the nursing home of Banyuwangi, May 2021 (n=32)

Characteristics of the elderly	n (%)
Age	
Age of the elderly 60-74 years (elderly)	18 (56.3)
Age of the elderly 75-90 years (old)	13 (40.6)
Age of the elderly > 90 years (very old)	1 (3.1)
Gender	
Male	16 (50)
Female	16 (50)
Marital Status	
Not Married	0 (0)
Married	1 (3.1)
Widow/widower	31 (96.9)
Sitting Activities	
Never	2 (6.3)
Less than 1 hour	12 (37.4)
1 but less than 2 hours	10 (31.3)
2-4 hours	3 (9.4)
More than 4 hours	5 (15.6)
Walking	
Never	3 (9.4)
Less than 1 hour	27 (84.3)
1 but less than 2 hours	2 (6.3)
Light Sport	
Never	2 (6.3)
Less than 1 hour	1 (3.1)
2-4 hours	29 (90.6)
Moderate Sport	
Never	27 (84.4)
1 but less than 2 hours	2 (6.3)
2-4 hours	3 (9.4)
Strenuous Sport	
Never	30 (93.8)
Less than 1 hour	2 (6.3)
Muscle Strength and Endurance	
Never	2 (6.3)
1 but less than 2 hours	30 (93.8)

Elderly Physical Activity during the COVID-19 Pandemic

According to the results of statistical calculations in Table 2 using one-sample Kolmogorov-Smirnov, it was found that the indicators of elderly leisure activities experienced significant changes during the COVID-19 pandemic (t = 0.369; p-value 0.000). Household activity indicators experienced significant changes during the COVID-19 pandemic (t = 0.165; p-value 0.027). Indicators of volunteer activity experienced significant changes during the COVID-19 pandemic (t = 0.512; p-value 0.000). Meanwhile, the total physical activity score of the elderly did not change significantly during the COVID-19 pandemic (t = 0.121; p-value 0.905). An overview of the index of physical activity indicators in the elderly during the COVID-19 pandemic at the nursing home of Banyuwangi is shown in Table 2.

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Table 2. Distribution of the Index of Physical Activity Indicator in the Elderly during the COVID-19 Pandemic at the Nursing Home of Banyuwangi in Mei 2021 (n=32)

Variable	Mean±SD	t	p-value
Leisure Time Activity	32.350±15.455	0.300	0.000
Take a walk outside home or yard	7.5438±5.531	0.362	0.000
Engage in light sport or recreational activities	12.600±3.305	0.538	0.000
Engage in moderate sport and recreational activities	1.840±4.579	0.500	0.000
Engage in strenuous sport and recreational activities	0.488±1.993	0.534	0.000
Exercises to increase muscle strength and endurance	9.878±5.763	0.488	0.000
Household Activity	64.593±29.089	0.165	0.027
Light housework	25.000±0.000		
Heavy housework	17.968±11.420	0.450	0.000
Home repairs	0.000±0.000		
Lawn work or yard care	2.250±8.853	0.538	0.000
Outdoor gardening	1.875±5.922	0.530	0.000
Caring for another person	17.500±17.780	0.338	0.000
Work-related Activity	5.912±22.139	0.512	0.000
Work for pay or as a volunteer	5.912±22.139	0.512	0.000
Total Score of the PASE	102.878±41.160	0.121	0.905

DISCUSSION

Characteristics of the Elderly

The results showed that most of the elderly respondents in this study were in the elderly category, namely 18 elderly (56.3%) aged 60-74 years. This is because most of the elderly who live in the nursing homes of Banyuwangi are more than 60 years old, which can be referred to as elderly. This is in line with Law Number 13 of 1998 concerning the Welfare of the Elderly that a person can be called elderly if he is more than 60 years old (Kemenkes, 2016). Age is one of the factors that affect physical activity. Physical activity will gradually decrease with age. This is because the elderly begin to lose muscle mass and strength (Suryadinata, Wirjatmadi, Adriani, & Lorensia, 2020). Based on gender, showed the same results between the number of elderly men (50%) and women (50%). Research conducted by Surti et al. (2017) shows that gender influences the physical activity of the elderly. According to Sasaki et al. (2021), elderly women are more active in social participation so they have a higher chance of maintaining physical activity during the COVID-19 pandemic. Based on marital status, it shows that most of the elderly who become respondents have the marital status of widows/widowers, namely 31 elderly (96.9%). This is because there is elderly who live in the nursing homes of Banyuwangi experiencing divorce or being left behind by their husbands or wives. Research conducted by Surti et al (2017) shows that marital status has an influence on the physical activity of the elderly. Marital status can be an encouragement for the elderly to do physical activity. Encouragement from yourself or encouragement from your husband or wife can affect the elderly in carrying out physical activities (Surti et al., 2017). Based on the activities carried out by sitting, it shows that for most of the elderly, namely 12 elderly (37.5%) the average time spent by the elderly for one activity that is done sitting is for less than 1 hour. This is because most of the elderly fill sitting activities by doing activities such as reading newspapers, watching TV, or reading books. The length of time sitting is an important variable that can affect physical fitness (Bruton et al., 2020). The elderly who has good physical fitness will have a higher level of physical activity than the elderly whose physical fitness is not good. The elderly who lack physical fitness will tend to like sleeping and sitting (Wijaya, Ulfiana, & Wahyuni, 2020). Based on the length of walking, it shows that most of the elderly, namely 27 elderly (84.4%), spend time walking for less than 1 hour. This is possible because every morning, the elderly takes a leisurely walk outdoors or in the yard. Walking is the most popular activity in the elderly group (Bruton et al., 2020). Walking is an inexpensive and beneficial way of exercising (Touhy & Jett, 2014). Based on light sports and recreation, it shows that most of the elderly, namely 29 elderly (90.6%), spend time doing light sports and recreation for 2-4 hours. This is possible because one of the routine activities that the nursing home of Banyuwangi holds is holding a joint electronic music, where the electronic music or music program in the PASE questionnaire is one of the activities included in light sports and recreation. Recreational sports as a choice of activities that are freely chosen individually have great meaning for the welfare and improvement of the health of the elderly (Bjelica, 2021). In moderate recreational sports and strenuous recreational sports, it is shown that most of the elderly, namely 27 elderly (84.4%), have never done moderate sports and recreation and most of the 30 elderly (93.8%) have also never done strenuous recreational

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sports. This is possible because of the limited mobility of the elderly. On the strength of muscle endurance, it shows that most of the elderly, namely 30 elderly (93.8%) spend 1-2 hours doing strength and muscle endurance exercises. This is possible because one of the routine activities carried out by the nursing home of Banyuwangi is holding joint gymnastics, where the exercise in the PASE questionnaire is one of the activities included in strength and muscle endurance training. According to Saftarina & Rabbaniyah (2016) in the results of their research, it is stated that the elderly who do exercise regularly have a very good quality of life.

Elderly Physical Activity during the COVID-19 Pandemic

Leisure Time Activity Indicator

The results of this study on the elderly leisure activity indicator showed a p-value of 0.000 so it can be said that there was a significant change in the elderly leisure activity at a nursing home of Banyuwangi. This is possible because all the activities in the indicator, namely activities outside the home, light/recreational exercise, strenuous exercise/recreation, and strength/endurance training show significant changes. According to research conducted by Stockwell et al (2021) states that the existence of a locking policy from one country to another, region to region, and a prohibition on outdoor physical activity, so will affect work, travel, recreation and ultimately will also affect the level of physical activity and lifestyle. In line with Kim et al. (2021), their research results show that certain leisure activities provide more benefits on psychological and mental health among the elderly in Korea than other types of recreation. Encouraging the elderly to participate in physical activity in their spare time is important for their health and well-being.

Household Indicator

The household activity indicator shows a significant change (p-value=0.000). It is possible that these indicators, namely heavy housework, yard maintenance, gardening, and caring for others also showed significant changes and in light housework and house repair activities, the t and p values did not appear because in these two activities all the elderly had answers. the same so that the data obtained is constant. In line with research conducted by Kim et al (2021) which showed that the elderly in Korea also experienced significant changes in home-based activities. Another study that is also in line is research by Corley et al (2021), which states that during the lockdown due to COVID-19, the elderly spend more time in parks. Visiting the park can reduce negative psychological worries and problems and can increase positive feelings or emotions. Activities spent in the park for gardening or relaxing can provide well-being and increase physical endurance in the elderly. In particular, participation in outdoor activities and home-based activities serves as a predictor of happiness, life satisfaction, and perceived health among the elderly in Korea (Kim et al., 2021).

Work-related Activity Indicator

The volunteer activity indicator showed a significant change (p-value=0.000). This is possible because the activity of working for paid or volunteering shows a significant change. This is in line with the research conducted by Kim et al (2021) which showed that the elderly in Korea also experienced significant changes in volunteer activities. According to Kobayashi et al (2019), healthy elderly are encouraged to volunteer because this productive activity is considered to provide additional benefits to improve the psychological and physical well-being of the elderly. This is in line with research by Jain & Kumar (2017) which states that doing work for pay or voluntarily has a positive impact on the psychological well-being of the elderly and both are types of activities that can provide more confidence for the elderly. In addition, Catsouphes et al (2017) stated that by working as volunteers the elderly are motivated to develop themselves by getting learning opportunities and being able to return to their communities to teach what they have learned and learned The activity is also influenced by factors in the aging process, there are physical, psychological, and social, causing functional consequences in the elderly. This is a factor that makes the age group vulnerable to Covid-19 and suffers the most severe impact due to the spread of the virus.

CONCLUSION

Based on the characteristics data, most of the elderly (56,3%) are in the elderly group (60-74 years), the gender of the elderly has the same number of male and female elderly, most of the elderly have widow/widower status 31 elderly (96.9%), most of the elderly are 12 elderly (37.5%). Total Score PASE has (p-value=0.905) which can be concluded that the elderly at a nursing home in Banyuwangi did not experience significant changes in physical activity. However, the elderly experienced significant changes in all indicators of physical activity, namely leisure time activities (p-value 0.00), household activities (p-value 0.029), and volunteer activities (p-value 0.000).

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