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Physiotherapy Management To Prevention of Covid-19 by Improved Physical Activity in Elderly

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Abstract. Coronavirus 2019 (COVID-19), is an acute respiratory syndrome caused by the corona-2 virus (SARS-CoV-2). Elderly is a condition where the tissue's ability to repair itself or replace itself slowly disappears and maintains its normal structure and function so that it cannot survive. Problems that may arise, it is necessary to improve or improve the physical condition of the elderly, which can help them to maintain their health in their retirement. This study aims to reduce the impact of the Covid 19 pandemic on the elderly, provide an overview of the physical problems of Covid 19 in the elderly and prevention of Covid 19 in the elderly. This type of research is a type of experimental research that uses a pre- experimental research design in the form of a one-group pretest-posttest design. **Results** showed a probability value with a value of p <0.05. These results indicate that physiotherapy management in the elderly during Covid 19 provided support for increased physical activity, so that the risk of being exposed to Covid 19 can be eliminated. Management physiotherapy for covid 19 the p value is 0.000, p value <0.05, this shows that there are significant results between the pre test and post test on the physiotherapy management of the elderly during the Covid 19 pandemic. For the physical activity for elderly the p value is 0,015 this shows that the physical activities carried out by the elderly during a pandemic have not changed but can be given motivation to do physical activity. For the information fear of ctracting corona virus p value 0,007 this shows that the information on physical activity provided by physiotherapy does not change the fear of the elderly still being exposed to Covid.

Keywords*:* Covid 19, Elderly Physical Activity, PASE Scale

I. Introduction

Coronavirus was identified from a cluster of cases in the city of Wuhan, China. In mid-March, the outbreak of this virus was declared a pandemic by the WHO after infecting more than 150,000 people and causing more than 5,000 deaths in 123 countries around the world. All healthcare workers including physiotherapists / physical therapists have an important role to play in global efforts to manage the effects of this disease. This course series gathers relevant information for all rehabilitation professionals to help them develop an understanding of viruses and related diseases, and to explore their role in working to care for related patients as well as to contain and reduce disease. Coronavirus disease 2019 (COVID-19), caused by Severe Acute Respiratory Syndrome-Corona-2 Virus (SARS-CoV-2), is a single-stranded ribonucleic acid (RNA) encapsulated coronavirus. Transmission is thought to be dominated by droplet spread (i.e. relatively large particles deposited in the air), and direct contact with the patient, rather than 'airborne' (in which smaller particles remain in the air longer). There is still no specific antiviral treatment for COVID-19 infection, only supportive therapy including respiratory care for affected patients, especially in more severe cases. [1]

About 15% of people with COVID-19 develop moderate to severe disease and require

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hospitalization and oxygen support, with a further 5% requiring admission to the Intensive Care Unit and supportive therapy including intubation and ventilation. [2] The most common complication in severe COVID-19 patients is severe pneumonia, but other complications may include Acute Respiratory Disorder Syndrome (ARDS), Sepsis and Septic Shock, Multiple Organ Failure, including Acute Kidney Injury and Cardiac Injuries, which are more prevalent in risk groups including older age (> 70 years) and those with co-morbid diseases such as cardiovascular disease, lung disease, diabetes and those who are immunosuppressed [2].

In the elderly there is respiratory muscle arthrophy, decreased elasticity of lung recoil, increased size, tracheal and central airway stiffness, pulmonary compliance and enlargement of the alveolar duct which results in a greater transmural pressure gradient that must be formed during inspiration to produce normal lung expansion so as not to exchange. gas that is slow and disrupts the oxygen delivery process of the network. Elderly is not a disease, but is an advanced stage of a life process marked by a decrease in the body's ability to adapt to environmental stress. In general, signs of aging begin to appear from the age of 45 and problems will arise around the age of 60. The aging process is often followed by a decrease in the quality of life, so that the elderly can experience health problems. One of the problems in the elderly is falling.

II. Material and Methods

This study aims to test physiotherapy management to reduce the risk of COVID-19 in the elderly. This type of research is a type of experimental research that uses a pre-experimental research design in the form of a one- group pretest-posttest design, which compares physical activity between before and after receiving treatment. The purpose of this study was to determine the effectiveness of physiotherapy management on the prevention of Covid 19 in the elderly. The population in this study is the elderly community with a total of 23 elderly people aged between 50-70 years.

Study Design : research is a type of experimental research that uses a pre-experimental research design in the form of a one-group pretest-posttest design,

Study Location : this research was conduct with elderly community

III. Results

Characteristics subject characteristics including age, gender, descriptions of research subjects are presented in the following table

Table 1

Gender

	Frequency	Percent	Valid Percent	Cumulative Percent
Valid	1	4.2	4.2	4.2
laki laki	14	58.3	58.3	62.5

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	Pre management physiotherapy	Post Management physiotherapy	Physical activity before management physiotherapy	Physical activity after management physiotherapy	Before getting information, fear of contracting the corona virus	Before getting information, fear of contracting the corona virus
Chi-Square	5.261[a]	15.217[b]	15.217[b]	8.435[b]	12.565[a]	7.348[a]
df	1	2	2	2	1	1
Asymp. Sig.	.022	.000	.000	.015	.000	.007

	Perempuan	9	37.5	37.5	100.0
	Total	24	100.0	100.0	

From the table the number of elderly who were the research subjects was 23 people, with a total of 14 male and 9 female.

Based on the table above with chi square , the probability for management physiotherapy for covid 19 the p value is 0.000, p value <0.05, this shows that there are significant results between the pre test and post test on the physiotherapy management of the elderly during the Covid 19 pandemic. For the physical activity for elderly the p value is 0,015 this shows that the physical activities carried out by the elderly during a pandemic have not changed but can be given motivation to do physical activity. For the information fear of ctracting corona virus p value 0,007 this shows that the information on physical activity provided by physiotherapy does not change the fear of the elderly still being exposed to Covid

IV. Discussion

Physiotherapy management in the elderly the cardiovascular activity of any activity is good, but the more the better and the greater the intensity and quantity, the greater the health benefits. Regular physical activity is associated with a reduced risk of many diseases, including some cancers and dementia. People with long-term conditions benefit substantially from physical activity that can help prevent and manage many common chronic conditions and diseases. The British Geriatrics Society has warned of its protective implications in older adults. They have stated that protecting parents from COVID-19 must not compromise their health and well-being. Being outdoors less often can mean that the elderly are more likely to become deconditioned, losing their muscle strength due to a lack of activity. At the same time, increased inactivity among elderly people who distance themselves and isolate themselves is likely to result in an increased risk of falls and fall-related injuries. Low levels of physical activity in older adults will result in reduced strength resulting in loss of independence and the need for future care. Public Health UK, Sheffield Hallam University (SHU), the National Center for Sport and Exercise Medicine (NCSEM) and Sport UK have developed an Active at

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Home booklet to provide older adults practical guidance on home-based activities to maintain their strength and balance . Organized by Public Health England NFPCG, this group provides expert advice on preventing falls and fractures and promoting healthy aging. In response to COVID-19, NFPCG members have supported the development of several new resources to address the current issues surrounding falls and fractures. [1],[3].

Increased physical activity in the elderly has infected hundreds of thousands of people worldwide. In Indonesia alone, more than 80,000 people have tested positive for COVID-19. Strengthening the body's immune system is one way that can be done to ward off transmission of this virus. Not only the Corona virus, a strong immune system can also protect the body from various other diseases.[2] Pre-COVID-19 data shows that action across the UK has succeeded in keeping the nation active, including among inequalities such as women, adults over 55 and people with disabilities or people with long-term conditions. A recent Sport England survey suggested 2 in 3 (62%) of adults say it's important to be active and a similar proportion say it helps maintain their physical and mental health (69% and 65%). However, the survey also showed that physical activity levels had decreased. 31% of adults did more activity, but 41% did less (30% and 38% in children). Action is needed to protect the results that have been achieved in the last ten years, and to help manage and recover from the pandemic. Physical activity makes it clear that adults should strive to minimize the amount of time spent in motion, everyone should stop long-term inactivity with at least light physical activity.[3],[5] Strengthening and balancing activities are an important part of maintaining a healthy body for all age groups. Strengthening and balancing activities help build healthy bones during childhood, maintain strength in adulthood and prevent the decline in muscle mass and bone density that occurs as we get older. There are a variety of ways to participate in strengthening and balancing activities. You are already building and maintaining healthy muscles and bones if you spend time carrying heavy objects, lifting heavy objects, taking yoga or pilates classes, or playing ball games or badminton. Some of these activities are more difficult to maintain indoors, but there are resources and guidance to meet those challenges [1][2][3][4].

The novel coronavirus 2019 (2019-nCoV) or better known as the Corona virus is a virus that can cause respiratory system disorders, acute pneumonia (lung infection), and kidney failure. WHO officially gave the name COVID-19 (Coronavirus disease 2019) for this Corona virus. Until now, there is no vaccine that can prevent Corona virus infection or COVID-19.[5],[8],[9] This is what causes the Indonesian Ministry of Health to urge the Indonesian people to always live a clean (hygienic) life and always maintain their immune system. Basically, the human body has an immune system to fight viruses and bacteria that cause disease. However, there are things that can weaken a person's immune system or immune system, including aging, malnutrition, disease, and even certain drugs. Therefore, the function of the immune system needs to be maintained so that the immune system is strong. Some things that can maintain the immune system or immune system include, eating nutritious food consumption of foods rich in antioxidants, such as vegetables and fruits, can help the body fight free radicals. If you have a lot of free radicals in your body, the work of the immune system can be disrupted and you are more prone to infection with the Corona virus. In addition, to maintain body immunity, adequate nutritional intake is also needed. Increase consumption of lean meats, nuts, and seeds so that your immune system is strong. Onions and ginger are also good for consumption because they are believed to help the body fight infection and reduce inflammation. [2],[10]. Get regular exercise, exercise has also been shown to increase endurance and reduce inflammation. However, you need to remember, regular exercise has a better effect on the immune system than occasional exercise. So, take

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the time to exercise at least 30 minutes every day. Manage stress well, prolonged stress can increase the production of the hormone cortisol. High levels of the hormone cortisol can interfere with the immune system's work to fight infection. Therefore, try to manage stress well so that your immune system is maintained and strong against Corona virus infection. Stress can be controlled with simple things, for example by getting enough sleep every day. You can also do fun things to relax your body and mind, such as hanging out with friends, sightseeing, doing your hobbies, or doing meditation.Get enough rest, although it sounds simple, lack of sleep is proven to have a negative impact on health. One of them is a decrease in body resistance, so that various diseases can more easily attack. Adequate sleep can make your body stronger against exposure to the Corona virus. Adults need about 7–8 hours of sleep per day, while children need 10 hours or more of sleep. [11],[4],[5]

Physiotherapy can recommend is to strengthen the immune system or reduce the ability of the virus to spread to the lung tissue. The following recommendations are to improve lung health and reduce exposure / exposure to viral particles for healthy individuals as well as individuals, especially the elderly. Physiotherapy management recommendations for physical activity that can be carried out by the elderly during the Covid 19 pandemic to prevent and improve fitness and help with breathing:

Some of the activities carried out at home

1. Exercise at leisure, try not to spend too much of your free time watching TV, reading, or activities that can reduce physical activity. Activities that rest the body too much will give the body a response to not want to do activities as a result, there will be a decrease in fitness in the body.
2. Activities outside the home, this activity can be done to improve individual physical fitness, of course with conditions like this Covid 19, limiting activities outside the home must pay attention to health protocols. Activities that can be done outside the home (walking in the environment, light exercise to move the joints of the body such as stretching, etc.)
3. Doing recreational sports, this activity can be done by combining sports activities with recreation such as playing light games, jogging, swimming, cycling, etc. activities that can be done with children or family will provide physical and cognitive relaxation so as to help activate the immune system in the body to produce more hormones in the body.
4. Moderate exercise, moderate sports activities such as tennis, badminton and the like are activities that will require good energy and physical strength. This moderate activity should be done by paying attention to the abilities of each elderly individual and being accompanied by a family.
5. Muscle strength training
   This exercise can be done according to individual abilities, activities that can be done to increase muscle strength, for example for arms by lifting a barbell with a weight of 1/2 kg, push-ups with certain positions, and other forms with increased exercise portions to gain endurance.
6. Household activities, activities that are carried out in a complex manner or involve many joints will provide compensation for fitness related to joints, muscles, ligaments, respiration, cardiovascular etc. Household activities in physiotherapy are part of the individual's functional ability to carry out activities. The more functional activities are carried out, it will maintain the movement or range of motion of the joints so that the joints, muscles and components in the body do not experience hypokinetics (lack of movement).
7. Elderly gym activities, this activity is carried out by the elderly together with the

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community, the elderly should be able to follow the community according to their needs. Gymnastics is carried out with guides and instructors to give maximum effect and prevent injuries during activities. Moving your joints or body to a certain degree will help the elderly to stay fit and healthy.

8. Breathing exercises, to improve body fitness there are many things that can be done, one of the options is breathing exercises are a combination of breathing exercises with physical exercises that are useful for maintaining and improving general fitness and are used to maintain respiratory function in patients with long-term respiratory distress.[12],[13],[14].

V. Conclusions

Research conducted to determine the effectiveness of physiotherapy management during the Covid 19 period for the elderly is one method that can be used to measure physical activity that supports fitness levels and its effect on the formation of body immunity. From the initial measurement before being given physiotherapy management, of course the physical activities carried out are only limited to daily work activities carried out at home or even because of work, physical sports activities that support body fitness are rarely and even not done by the elderly. Physiotherapy management for the elderly during the COVID-19 pandemic is needed to support or monitor the physical activity of the elderly. Elderly with declining physical and functional conditions need support from medical personnel, family and the environment to be able to improve their physical fitness or physical condition. With better or increased resistance, it will reduce the risk of exposure to covid in the elderly due to inactivity during the pandemic.

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