

Need-Assessment of Physical Activity as an Effort to Increase Immunity During the Covid-19 Pandemic

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ABSTRACT

COVID-19 has a negative impact on human immunity. The rate of patients infected to death continues to increase every day. The social restriction protocol makes people reduce activities outside the home including physical activity or sports, even though physical activity is one of the treatments in maintaining immunity. This descriptive study aims to assess people's perceptions of the need for physical activity at home as an effort to increase immunity during the COVID-19 pandemic. Data was collected by distributing online questionnaires through a google form. Most of the participants agree that maintaining the physical condition and doing physical activity during the COVID-19 pandemic is important to maintaining immunity and all participant agree that need books and videos of physical activity use language that is easy to understand can be accessed anywhere and anytime. Based on this scientific evidence, people know that maintaining a regular physical activity at home is a key strategy for increase immunity during COVID-19 outbreak. Concerning this, it is imperative to provide books and tutorials video to educate people about exercise at home based on the frequency, intensity, time, and type of physical activities according to the needs of the body and the age.

Keywords: *Physical activity, immunity, covid-19*

1. INTRODUCTION

In early December 2019, COVID-19 disease was first discovered in the city of Wuhan, China [1]. COVID-19 is a crown-shaped RNA and consists of a collection of glycoprotein-rich spines on the cover [2]. The initial cases of COVID-19 originated from the animal market of Wuhan, Hubei Province, China [2]. The initial cases of COVID-19 originated from the animal market of Wuhan, Hubei Province, China [3], [4] which are thought to have originated from bats [5]–[7].

The immune system can protect ourselves from COVID-19 [8]–[10]. Therefore, immune status can be used as an indicator of the patient's success in recovering from diseases, including COVID-19. Good immune status is also a distinct advantage for the immune system which

is responsible for preventing viral infection and disease [11], [12]. With regard to this, increasing immunity is the best solution at this time to avoid COVID-19 infection [13].

Regular physical activity can increase immunity [14] and maintain good nutritional status by paying attention to the dietary habit can increase immunity to fight the COVID-19 virus [15]. Various government regulations on staying at home, working from home, self-isolation, lockdown, and social distance during the COVID-19 pandemic have had an impact on lack of physical activity, increased sedentary lifestyle [16], eating more food and weight gain [17] [18]. A healthy diet and physical activity according to frequency, duration and intensity are important indicators in maintaining immunity from declining during the COVID-19 pandemic [19]–[21].

Physical activity or moderate exercise is recommended to increase immunity during a pandemic with very low

injury rates [22]. However, during the social distancing program in East Java, people tended to exercise outdoors with a very high risk of transmission, this is indicated by the growing number of bicycle community [23].

Outdoor sports pose a great risk to the health of the body during the COVID-19 pandemic, this can be seen from the oxygen entering the body due to the use of oxygen and the danger of spreading the virus through the air [24]. The spread of the virus through the air is thought to have been initiated by someone who is positive for COVID-19, but that person is not detected when sneezing or coughing so that there are droplets that spread in the air containing the virus. Referring to this, it is necessary to conduct an assessment of people's knowledge and needs regarding the physical activity or sports that can be done from home as an effort to increase immunity during the COVID-19 pandemic and also could support government programs for stay at home.

2. METHOD

The study used a quantitative descriptive design. There were 87 respondents involved in the study. Data collection is done by disseminating online questionnaires through google forms. After the data is tabulated, the data is descriptively analysed using SPSS 26 by presenting the results of identifying the frequency, percentage, and average public perception of physical activity at home as an effort to increase the immune system during the COVID-19 pandemic.

3. RESULT AND DISCUSSION

The results of the research presented in table 1 show that most of the participant of this study according to age range, gender, education level and the profession as follows: 61% are in the age range of 10-20 years, 52% male, 62% senior high school and 61% is a student.

Table 1. Characteristic of the subject

Characteristic of the subject	n = 87	%
Age (year)		
10 - 20	53	61
21 - 30	15	17
31 - 40	1	1
> 40	18	21
Gender		
Male	45	52
Female	42	48
Education		
Elementary School	6	7
Junior High School	8	9
Senior High School	54	62
Undergraduate and graduate	19	22

Profession		
Student	53	61
Housewife	6	7
Civil servants	5	6
Others	23	26

Table 2 shows that the majority of participants agree that maintaining the physical condition and doing physical activity during the COVID-19 pandemic is important to maintaining immunity. Furthermore, only 10% stated disagree that books and videos can motivate to do physical activity at home, and all participant agree that need books and videos of physical activity use language that's easy to understand can be accessed anywhere and anytime.

Table 2. Assessment of physical activity and immunity

Question	n = 87	%
Important to maintain physical condition during the COVID-19 pandemic		
Agree	82	94
Disagree	5	6
Physical activity is important to maintain immunity		
Agree	83	95
Disagree	4	5
Books and videos can motivate to do physical activity at home		
Agree	78	90
Disagree	9	10
Books and videos use language that's easy to understand		
Agree	87	100
Disagree	0	0
Books and videos can be accessed anywhere and anytime		
Agree	87	100
Disagree	0	0

In terms of willingness and needs for physical activity during pandemic COVID-19, the three aspects in figure 1 show that most of the participants are willing to do physical activity at home, needs books and tutorial video to do exercise at home, and it categorized based on the age group.

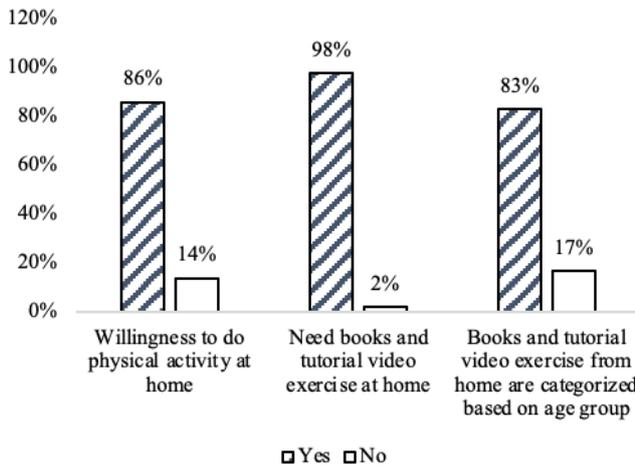


Figure 1. Willingness and need to do physical activity during pandemic COVID-19

During the COVID-19 outbreak shows a massive impact on human lifestyle. It is including changing a dietary habit, physical activity and sedentary lifestyle which has an impact on weight gain and increasing the incidence of obesity [17], [18], [24], [25]. Maintaining immunity is a key role to prevent and treat a serious manifestations due to COVID-19 infection [9], [26], [27]. This study is in line with other studies which state that during the COVID-19 pandemic, physical activity and exercise have a positive role in individual health outcomes, immune system, and physical health [28]–[30]. Besides, during this pandemic, physical activity could be done by utilizing technology, such as exercise videos, digital book and online professional guidance [31].

The regulation of restrictions has decreased the implementation of physical activity (number of days and number of hours) and access sports facilities (e.g. sports centre, outdoor recreation facilities, and fitness centre) to exercise [32]–[34] and increase sedentary behaviour [35]–[37], unhealthy lifestyle, depression, anxiety and sleep problem [25], [29], [38]–[40].

Recent research present that it is imperative to practice physical activity at home to maintain fitness level, healthy, and immune during COVID-19 pandemic [36] [41]. Providing the right frequency, duration, intensity and type of exercise are parameters in physical training to improve fitness [42]–[44]. ACSM provides guidelines for the implementation of an exercise program using frequency, intensity, time and type (FITT) equipped with volume and progression (VP) [45], these exercises are carried out with regard to age and can be adjusted for the benefit of patients with cardiovascular disease and diabetes [46].

Due to the benefits, the recommendation of physical activity during COVID-19 based on the age group, frequency, intensity, time, and type is highly

recommended. Playing games in the form of physical activity several times a day is very good for 2-5-year-olds. The form of play is in accordance with the development, fun, and varied to avoid boredom among children [47], [48] at least 180 minutes. Children and adolescents aged 5-17 years at least 60 minutes a day of moderate to vigorous-intensity physical activity, and adults aged over 18 years at least 150 minutes of moderate-intensity physical activity throughout the week, or at least 75 minutes of vigorous-intensity physical activity throughout the week, such as walking, cycling, doing household chores, playing sports games or exercises that have been planned [49] [50].

4. CONCLUSION

During the COVID-19 outbreak, the government is implementing social restrictions and advising people to stay at home to reduce the spread of coronavirus disease. In addition, nowadays people are also starting to adapt to a new condition including the habit of doing physical activity from home. Based on the result of the study, it is concluded people know that regular physical activity at home as an effort to maintain immunity during the COVID-19 pandemic. Furthermore, the respondent needs videos and guidebooks of tutorial exercise at home based on the age group that can be applied daily. With regard to this, it is essential to provide books and tutorials video to educate people about the frequency, intensity, time, and type of physical activities according to the needs of the body and the age. Besides, to deal with misperceptions in society about the concept of sports during this pandemic.

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