



# Psychological Approach Physical Distancing Model on Immune Resistance Imun New Normal Post Pandemic COVID 19

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## Abstract

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**BACKGROUND:** The first COVID-19 reported in Indonesia on March 2, 2020, was two cases. Data on March 31, 2020, showed that there were 1528 confirmed cases and 136 deaths. The COVID-19 mortality rate in Indonesia is 8.9%, this figure is the highest in Southeast Asia. As of March 30, 2020, there were 693,224 cases and 33,106 deaths worldwide. Inadequate immune response leads to viral replication and tissue damage. On the other hand, an exaggerated immune response can cause tissue damage. Several other risk factors established by the Centers for Disease Control and Prevention are close contact, including living in the same house as a COVID-19 patient and a history of travel to an infected area. Based on a preliminary study at the Yogyakarta Special Region Health Center and the Borobudur Magelang Health Center, Central Java, there were 95 cases of corona virus and 75% with comorbidities. Of the corona cases in the Special Region of Yogyakarta and in Borobudur, Magelang, Central Java, the body's resistance decreased. Researchers are interested in taking the title "The Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance after the COVID 19 Pandemic"

**AIM:** It is known the influence of Psychological Approach Physical Distancing on New Normal Immune Resistance after the COVID 19 Pandemic.

**METHODS:** This type of research is Research and Development using a quasi-experimental, "Pre-test Post-test with Control Group Design" design. In this design, there was a comparison group (control), the observations were carried out twice. The first observation was to determine the New Normal maximum resilience after the COVID 19 pandemic before being given Psychological Approach Physical Distancing and the second observation after being given Psychological Approach Physical Distancing with the criteria for comorbid respondents at the Puskesmas. Data were analyzed using pair t-test and Wilcoxon with a significant level of  $p < 0.05$ .

**RESULTS:** Differences in initial immune resistance at month 1, month 1 and month 2, and month 2 and month 3 there was a difference with  $p = 0.000 (< 0.05)$ .

**CONCLUSION:** There is an influence of Psychological Approach Physical Distancing on New Normal Immune Resistance after the COVID 19 Pandemic.

## Introduction

In December 2019, the first case of mysterious pneumonia was reported in Wuhan, Hubei Province. The source of the transmission is still unknown, but the first case was linked to a fish market in Wuhan. From December 18 to December 29, 2019, there were five patients who were treated with Acute Respiratory Distress Syndrome (ARDS). From December 31, 2019 to January 3, 2020, this case increased rapidly, marked by the reported 44 cases. In less than a month, the disease has spread to other provinces in China, Thailand, Japan, and South Korea. The sample under study shows the etiology of the new coronavirus. Initially, this disease was temporarily named as 2019 novel coronavirus (2019-nCoV), then WHO announced a new name on February 11, 2020, namely, coronavirus disease 2019 (COVID-19) caused by the Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2). The virus

can be passed from person to person and has spread widely in China and more than 190 other countries and territories. On March 12, 2020, the WHO declared COVID-19 a pandemic. As of March 29, 2020, there were 634,835 cases and 33,106 deaths worldwide. Meanwhile, in Indonesia, 1528 cases have been confirmed positive for COVID-19 and 136 deaths. Since the first case in Wuhan, there has been an increase in COVID-19 cases in China every day and peaked between late January and early February 2020. Initially, most reports came from Hubei and surrounding provinces, and then increased to other provinces and throughout China. As of January 30, 2020, there have been 7736 confirmed cases of COVID-19 in China, and 86 other cases were reported from various countries such as Taiwan, Thailand, Vietnam, Malaysia, Nepal, Sri Lanka, Cambodia, Japan, Singapore, Saudi Arabia, South Korea, Philippines, India, Australia, Canada, Finland, France, and Germany [1].

The first COVID-19 was reported in Indonesia on March 2, 2020 with two cases. Data on March 31,

2020 showed that there were 1528 confirmed cases and 136 deaths.<sup>10</sup> The COVID-19 mortality rate in Indonesia is 8.9%, this figure is the highest in Southeast Asia. As of March 30, 2020, there were 693,224 cases and 33,106 deaths worldwide. Europe and North America have become the epicenter of the COVID-19 pandemic, with cases and deaths already surpassing China. The United States ranks first with the most COVID-19 cases with the addition of 19,332 new cases on March 30, 2020, followed by Spain with 6549 new cases. Italy has the highest mortality rate in the world, at 11.3%.

Coronavirus is an RNA virus with a particle size of 120–160 nm. This virus mainly infects animals, including bats and camels. Before the COVID-19 outbreak, there were 6 types of coronavirus that could infect humans, namely alphacoronavirus 229E, alphacoronavirus NL63, betacoronavirus OC43, betacoronavirus HKU1, SARS-CoV, and Middle East Respiratory Syndrome Coronavirus (MERS-CoV) [2].

The coronavirus that causes COVID-19 belongs to the betacoronavirus genus. The results of phylogenetic analysis show that this virus belongs to the same subgenus as the coronavirus that caused the SARS outbreak in 2002–2004, namely, Sarbecovirus. On this basis, the International Committee on Taxonomy of Viruses proposed the name SARS-CoV-2. Currently, the spread of SARS-CoV-2 from human to human is the main source of transmission so that the spread becomes more aggressive. Transmission of SARS-CoV-2 from symptomatic patients occurs through droplets released when coughing or sneezing. In addition, it has been observed that SARS-CoV-2 is viable in aerosols (generated via a nebulizer) for at least 3 h. The WHO estimates the reproductive number (R<sub>0</sub>) for COVID-19 to be 1.4–2.5. However, other studies estimate an R<sub>0</sub> of 3.28.

Several case reports suggest that transmission from asymptomatic carriers is suspected, but the exact mechanism is unknown. Cases related to transmission from asymptomatic carriers generally have a history of close contact with COVID-19 patients. Several investigators have reported SARS-CoV-2 infection in neonates. However, vertical transmission from pregnant women to the fetus has not been proven to occur. If it can happen, the data show that the vertical transmission opportunity is relatively small. Virological examination of amniotic fluid, umbilical cord blood, and breast milk in mothers who were positive for COVID-19 was found to be negative [3].

SARS-CoV-2 has been shown to infect the gastrointestinal tract based on the results of biopsies of gastric, duodenal, and rectal epithelial cells. The virus can be detected in the feces, in fact there are 23% of patients who reported that the virus was still detected in the feces even though it was not detected in respiratory samples. These two facts confirm the possibility of fecal-oral transmission. Viral and host factors play a role in SARS-CoV infection. The cytopathic effect of the

virus and its ability to overpower the immune response determines the severity of infection. Dysregulation of the immune system then plays a role in tissue damage in SARS-CoV-2 infection.

Inadequate immune response leads to viral replication and tissue damage. On the other hand, an exaggerated immune response can lead to tissue damage. The immune response caused by SARS-CoV-2 is also not fully understood, but can be studied from the mechanisms found in SARS-CoV and MERS-CoV. When the virus enters the cell, the viral antigen will be presented to the antigen presentation cells. Immune response occurs in patients with mild COVID-19 manifestations. This patient had an increase in CD38+HLA-DR+ T cells (activated T cells), especially CD8 T cells on days 7–9. In addition, there was an increase in antibody secreting cells and follicular helper T cells in the blood on day 7, 3 days before symptom resolution. A progressive increase in SARS-CoV-2 IgM/IgG was also found from day 7 to day 20. These immunologic changes persisted up to 7 days after symptoms resolved. There was also a decrease in CD16+CD14+ monocytes compared to healthy controls. Activated natural killer (NK) cells HLA-DR+CD3-CD56+ and monocyte chemoattractant protein-1 (MCP-1; CCL2) were also found to be decreased, but levels were similar to healthy controls. In patients with mild COVID-19 manifestations, there was no increase in pro-inflammatory chemokines and cytokines, even when they were symptomatic [1].

Several other risk factors determined by the Centers for Disease Control and Prevention are close contact, including living in the same house with a COVID-19 patient and a history of travel to an infected area. Being in the same environment but not in close contact (within a radius of 2 m) is considered low risk. The clinical manifestations of COVID-19 patients have a broad spectrum, ranging from asymptomatic, mild symptoms, pneumonia, severe pneumonia, ARDS, sepsis, and to septic shock. About 80% of cases were classified as mild or moderate, 13.8% had severe illness, and 6.1% of patients fell into a critical condition.

Mild symptoms were defined as a patient with an uncomplicated acute upper respiratory tract infection, which may be accompanied by fever, fatigue, cough (with or without sputum), anorexia, malaise, sore throat, nasal congestion, or headache. The patient does not require oxygen supplementation. In some cases patients also complain of diarrhea and vomiting. COVID-19 patients with severe pneumonia are characterized by fever, plus one of the following symptoms: (1) Respiratory rate >30 breaths/minute, (2) severe respiratory distress, or (3) oxygen saturation of 93% without oxygen assistance. In geriatric patients, atypical symptoms may appear [4].

Most patients infected with SARS-CoV-2 show symptoms of the respiratory system such as fever, coughing, sneezing, and shortness of breath. The most

common symptoms are fever, dry cough, and fatigue. Other symptoms that can be found are productive cough, shortness of breath, sore throat, headache, myalgia/arthralgia, chills, nausea/vomiting, nasal congestion, diarrhea, abdominal pain, hemoptysis, and conjunctival congestion. More than 40% of fevers in COVID-19 patients had peak temperatures between 38.1 and 39°C, while 34% had fevers over 39°C. The course of the disease begins with an incubation period of about 3–14 days (median 5 days). In the next phase (early symptoms), the virus spreads through the bloodstream, presumably mainly in ACE2-expressing tissues such as the lungs, gastrointestinal tract, and heart. Symptoms in this phase are generally mild.

The second attack occurs four to 7 days after the initial symptoms appear. At this time the patient is still feverish and starting to have shortness of breath, the lesions in the lungs are getting worse, the lymphocytes are decreasing. Inflammatory markers begin to increase and hypercoagulability begins to occur. If not resolved, the next phase of inflammation becomes increasingly uncontrolled, a cytokine storm occurs which results in ARDS, sepsis and other complications [5]. The rapid spread of the corona virus outbreak, beyond the ability of scientists to create effective vaccines and drugs, is indeed worrying.

Based on a preliminary study at the Yogyakarta Special Region Health Center and the Borobudur Magelang Health Center, Central Java, there were 95 cases of corona virus (COVID 19) and 75% of them with comorbid disorders. Of the COVID 19 cases in the Special Region of Yogyakarta and in Borobudur, Magelang, Central Java, 97% experienced a decrease in immune resistance (body resistance).

Based on the description above, the researchers are interested in conducting research on the Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance after the COVID 19 Pandemic". The intervention that will be carried out by researchers is to provide a Psychological Approach Physical Distancing to increase New Normal Immune Resistance after the COVID 19 Pandemic.

Which is based on the use of innovative health science and technology, where material about "The Effect of Psychological Approach Physical Distancing on New Normal Immune Resilience after the Covid 19 Pandemic" has been included in the Health Promotion Course in the third semester of STKA Study Program which is applied to target individuals and special groups in the community.

## Methods

This type of research is a Research and Development (R&D) research. This research aims

to make a certain product. According to Sugiyono [6] Research and Development is a research method used to produce certain products and test the effectiveness of these products. Research and Development has provided major innovations in the world of education. In this case, the researcher will develop a product in the form of "The Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance after the COVID 19 Pandemic" [7].

This research step modifies the development model of Borg and Gall in Sugiyono [6], namely, (1) Research and information collection (conducting preliminary research and collecting initial information included in this step, including literature studies related to the problems studied and preparation for formulating research framework), (2) planning (doing planning including in this step formulating skills and expertise related to the problem, determining the goals to be achieved at each stage), (3) develop preliminary form of product (develop the initial form of the product, namely developing the initial form of the product to be produced. Included in this step is the preparation of supporting components, preparing guidelines and manuals and evaluating the feasibility of supporting tools), and (4) preliminary field testing (initial field testing, namely conducting initial field trials on a limited scale, involving subjects. In this step data collection and analysis can be done by means of interviews, observations or questionnaires). Preliminary research for tool validation.

The reliability test with Cronbarch's Alpha > 0.6 is said to be reliable, meaning it has sufficient reliability. (5) Main product revision (revision of test results, namely making improvements to the initial product produced based on the results of the initial trial. This improvement is very likely to be carried out more than once, according to the results shown in the limited trial, so that the main product (model) draft is ready to be tested more widely), (6) main field testing (main field testing involving enumerators), (7) operational product revision (make improvements/improvements to the results of a wider trial, so that the product developed is already an operational model design that is ready to be validated), (8) operational field testing (field implementation test, which is a validation test step on the operational model that has been produced), (9) final product revision (final product revision, namely making final improvements to the developed model in order to produce a final/final product), and (10) dissemination and implementation, which is a step to disseminate the developed product/model).

In stage (1) research and information collection (conducting preliminary studies or preliminary research and initial information collection), researchers conduct observations to obtain initial information that will be used as a basis and consideration in developing the book product "The Effect of Psychological Approach Physical Distancing on New Immune Resistance. Normal after the COVID 19 Pandemic. and the COVID 19 pandemic



**Table 1: The location of the study and the number of respondents**

S. No.	Location research in Puskesmas	Number of Respondents			
		Experiment		Control	
		f	%	f	%
1	Gamping II	13	28.26	13	28.26
2	Nanggulan	10	21.74	10	21.74
3	Jetis	10	21.74	10	21.74
4	Borobudur	13	28.26	13	28.26
Total		46	100	46	100

f. frekuensi

questionnaire. Researchers collected information through interviews with several subjects in the Sleman and Magelang districts as many as 12 people, asking about the COVID 19 pandemic. In stage (2) planning (doing planning), what the researcher did was design the development of the book "Model Psychological Approach Physical Distancing to New Normal Immune Resistance Post COVID 19 Pandemic" and the COVID-19 pandemic questionnaire. The research team will develop tools to increase the immunity resistance of the New Normal Normal Post COVID 19 Pandemic. In stage (3) develop the preliminary form of product (develop the initial form of the product), develop the initial form of the book product "The Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance Post COVID 19 Pandemic" and develop tools to increase New Normal immune resistance Post COVID 19 Pandemic (Table 1 and Table 2).

**Table 2: Characteristics of respondents in the experimental group and in the control group**

S. No.	Characteristics of respondents	Number of respondents			
		Experiment		Control	
		f	%	f	%
1	Age (years)				
	20–30 years	5	10.9	9	19.6
	>30–40 years	12	26.1	12	26.1
	>40–50 years	13	28.3	9	19.6
	>50–60 years	9	19.6	10	21.7
>60–70 years	7	15.2	6	13.0	
2	Gender				
	Man	20	43.5	28	60.9
	Women	26	56.5	19	39.1
3	Education				
	Primary school	1	2.2	3	6.5
	Junior high school	11	23.9	9	19.6
	Senior high school	24	52.2	27	58.7
College	10	21.7	7	15.2	
4	Profession				
	Civil servant	6	13.0	4	8.7
	Self employed	21	45.7	24	52.2
	Housewife	19	41.3	18	39.1
5	Comorbid				
	Diabetes mellitus	17	37.0	18	39.1
	Hypertension	13	28.3	12	26.1
	Heart	7	15.2	7	15.2
	Asthma	9	19.6	9	19.6

f. frekuensi

At this stage, the things that are done are: (a) Preparation of components, (b) design, (c) finishing of products, and (d) validation of experts. At this expert validation stage, the initial form of the product will be validated to be given an assessment of the product content of the material from the book "The Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance Post COVID 19 Pandemic". Expert validation aims to test the feasibility of book products and tool development before being tested on users, namely, comorbid respondents after

the COVID 19 pandemic. Stage (4) preliminary field testing (initial field testing). In the initial field trial stage, the researchers conducted a limited trial regarding the initial form of the book product and the development of the "Model Psychological Approach Physical Distancing to New Normal Immune Resistance Post Covid 19 Pandemic". Initial field trials were limited to 12 research subjects. Stage (5) main product revision (revision of trial results). Stage (6) main field testing (field testing involving enumerators). Field trials were applied to 92 respondents in the working area of the DIY Health Center and the Borobudur Magelang Health Center working area. In the sixth stage, the researcher uses a quasi-experimental research design, namely, research that aims to explain the effect and test the influence between variables through hypothesis testing. The form of the research design is time series design, namely the time series design for repeated measurements, before and after the experiment or treatment. This research is a quasi-experimental study with a pre-test-post-test with control group design. The research design can be described as follows:

This research is a quasi-experimental study with a pre-test-post-test with control group design. The research design can be described as follows:

Pre test	Intervention	Post test
$O_1$	$X_1$	$O_2$
$O_3$	$X_2$	$O_4$

$O_1$ : New Normal Immune Resistance Post Covid 19 Pandemic before Psychological Approach Physical Distancing was carried out in the treatment group

$O_2$ : New Normal Immune Resistance Post Covid 19 Pandemic after Psychological Approach Physical Distancing was carried out in the treatment group

$O_3$ : New Normal Immune Resistance Post Covid 19 Pandemic before in the control group

$O_4$ : New Normal Immune Resistance after the Covid 19 Pandemic after being in the control group

$X_1$ : Giving Psychological Approach Physical Distancing using books and tools to increase immune resistance, duration of 60 min once a week for 4 months

$X_2$ : Giving Psychological Approach Physical Distancing leaflet

Stage (7) operational product revision (make improvements or refinements to the results of wider trials, so that the developed book products and tools are already operational model designs that are ready to be validated). Field implementation tests were conducted on 92 research respondents. Stage (9) final product revision, namely making final improvements to the developed model to produce a final product. Stage (10) dissemination and implementation, which is the step of disseminating books and tools on "The Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance

Post COVID 19 Pandemic” and the COVID 19 pandemic questionnaire. Independent variable: “Psychological Approach Physical Distancing Model Bound variable: Immune Resilience New Normal Post COVID 19 Pandemic”. Location: The working area of the Yogyakarta Special Region Health Center and the working area of the Borobudur Magelang Health Center, Central Java. Time: The research was conducted from March to October 2021 and continued from January to October 2022 (for 2 years).

The population is all comorbid residents in the working area of the Yogyakarta Special Region Health Center and the working area of the Borobudur Magelang Health Center, Central Java, with a total of 148 comorbid residents. The sample in this study was some of the comorbid residents who were taken by purposive sampling technique. Inclusion Criteria: Comorbid residents in 3 working areas of public health centers in DIY province and 1 working area of Borobudur health center, Magelang, Central Java. Exclusion Criteria: Comorbid residents with chronic disease in 3 working areas of public health centers in DIY province and 1 working area of Borobudur health center, Magelang, Central Java. The total population of 148 comorbid residents was divided into 74 comorbid residents in the experimental group and 74 comorbid residents in the control group.

For samples of the experimental and control groups with a total population of 92 comorbid residents, the results obtained are: 46 comorbid residents in each group. The data from the examination results will be analyzed descriptively and analytically with the help of the SPSS for windows version 16.0 program. The data analysis test was carried out by univariate, bivariate and multivariate tests. The bivariate test was started with a normality test using Shapiro–Wilk in the treatment and control groups between the pre-test and post-test. If the normality test results are normal, the paired t-test parametric test is used and if the normality test results is not normal, a non-parametric test is used, the paired t-test derivative, namely Wilcoxon. Followed by the difference test between the treatment and control groups with the normality test and if the results were normal, an independent parametric t-test was carried out and if the results were not normal, the Mann-Whitney non-parametric test was used with a significant level of  $p < 0.05$ .

The study has been approved by Health Ethics Committee of Politeknik Kesehatan Kemenkes Yogyakarta at Description Of Ethical Approval. With Number: e-KEPK/POLKESYO/0611/VII/2021

## Results and Discussion

The location of the study and the number of respondents in 3 Public Health Centers of the Special

Region of Yogyakarta (Puskesmas Gamping II Sleman, Puskesmas Nanggulan Kulon Progo and Puskesmas Jetis Yogyakarta) and 1 Puskesmas Borobudur Magelang, Central Java.

**Table 3: Initial immune resistance Beginning, month 1, month 2 and month 3 in the experimental group**

S. No.	Immune resistance	Beginning		Month 1		Month 2		Month 3	
		f	%	f	%	f	%	f	%
1	Well	0	0	16	34.8	35	76.1	45	97.8
2	Enough	29	63.0	28	60.9	11	23.9	1	2.2
3	Not Enough	17	37.0	2	4.3	0	0	0	0
	Total	46	100	46	100	46	100	46	100

f = frekuensi.

1. Differences in immune resistance before the New Normal Psychological Approach Physical Distancing model after the Covid 19 pandemic.

In Table 3 above, it can be seen in the experimental group that the initial immune resistance was mostly sufficient as many as 29 respondents (63.0%).

**Table 4: Initial immune resistance Beginning, month 1, month 2, and month 3 in the control group**

S. No.	Immune resistance	Beginning		Month 1		Month 2		Month 3	
		f	%	f	%	f	%	f	%
1	Well	0	0	1	2.2	4	8.7	15	32.6
2	Enough	36	78.3	38	82.6	42	91.2	31	67.4
3	Not Enough	10	21.7	7	15.2	0	0	0	0
	Total	46	100	46	100	46	100	46	100

f = frekuensi.

In Table 4 above, it can be seen in the control group that the initial immune resistance was mostly sufficient as many as 36 respondents (78.3%) The body's efforts to fight the Corona virus with the presence of symptoms in infected patients. The body of living things will become a place for viruses to seek opportunities to live when transmission occurs, so susceptible bodies will be easily infected. Therefore, it is very important in maintaining the body's immune system. One of them is to prevent diseases caused by the corona virus by increasing the immune system or body's resistance Ways that can be done to increase the body's immunity are by adopting a healthy lifestyle such as consuming more vegetables and fruit, because a person does not get sick easily if he consumes more of these 2 types of food. Enough time to rest so that you can maintain your immune system, because if you don't get enough rest it can lower a person's immune system. The immune system is dynamic and can fluctuate. Comorbid residents are encouraged to consume nutrients, vitamins, minerals, hormones, exercise and emotions that greatly affect the body's immunity. Strong antibodies indicate a person is getting older. However, with age, antibodies can also weaken. Adopting a healthy lifestyle can maintain and improve the body's immune system. This means being healthy by consuming nutritious food and exercising regularly. The immune system can be improved by regulating the body's immune system by using immunostimulants. In the immune system, there are immunostimulants that work in activating various elements and different mechanisms. The function of immunostimulants can increase the body's natural defenses in overcoming various viral and bacterial

infections and other diseases that can reduce or suppress the immune system (Table 5-8).

**Table 5: Test the normality of the experimental group of immune resistance on respondents**

Variable	Parameter	p	Keterangan
Immune Resistance	Beginning	0.138	Normal
	Month 1	0.310	Normal
	Month 2	0.031	Abnormal
	Month 3	0.005	Abnormal

In addition, immunostimulants function in helping the immune system work by stimulating the formation of various immune cells that have an important role, by increasing the formation of antibodies and cytokines and improving the function of phagocytosis. Comorbit residents who plan to travel and are in crowded places must use immunostimulants. This also applies to the elderly coorbital group who have low immunity (> 60 years) in the current condition, maintaining and increasing the immune system is very important and considered by everyone.

**Table 6: Test the normality of the control group of immune resistance on respondents**

Variabel	Parameter	p	Keterangan
Immune Resistance	Beginning	0.063	Normal
	Month 1	0.001	Abnormal
	Month 2	0.000	Abnormal
	Month 3	0.000	Abnormal

2. Differences in immune resistance after the New Normal Psychological Approach Physical Distancing model were carried out after the COVID 19 Pandemic.

New Normal Distancing Post COVID 19 Pandemic. In Table 3 above, it can be seen in the experimental group that the immune resistance at month 1 was mostly sufficient as many as 28 respondents (60.9%).

In the 2<sup>nd</sup> month, most of them were good as many as 35 respondents (76.1%). In the 3<sup>rd</sup> month, most of the respondents were good as many as 45 respondents (97.8%). In Table 4 above, it can be seen in the control group that the immune resistance at month 1 was mostly sufficient as many as 38 respondents (82.6%). In the 2<sup>nd</sup> month, most of the respondents were sufficient as many as 42 respondents (91.2 %). In the 3<sup>rd</sup> month, most of the respondents were sufficient as many as 31 respondents (67.4%). Immunity is the human body's way of fighting and killing foreign objects such as bacteria, viruses and other transplanted organs. The corona virus is also like a virus in general which only attacks if the body's immunity is weak.

**Table 7: Analysis of data using t test the difference in differences in initial immune resistance, month 1, month 2, and month 3 in the experimental group**

Variable	Significns (p)		
	Beginning-Month 1	Month 1-Month 2	Month 2-Month 3
Immune Resistance	0.000	0.000	0.000

So that the immunity of comorbid residents is strong, it is necessary to always maintain it by paying attention to the types of foods that can increase endurance,

consuming vitamins and supplements, such as Vitamin C found in citrus fruits, strawberries, spinach, red peppers, and broccoli. Vitamin A contains antioxidants to ward off free radicals and boost immunity, which are found in carrots, pumpkin, and sweet potatoes. To increase endurance and reduce inflammation by doing regular exercise. Doing exercise regularly has a better effect on the immune system when compared to exercise that is only done once. Exercise can stimulate the performance of antibodies and white blood cells and can circulate faster. White blood cells are immune cells that fight various diseases, more than 60% of the body consists of water. According to the WHO [9], the average adult drinking water requirement is about 8 glasses or 2 l/day. If you do excessive activities such as sports or when the weather is hot, you are required to drink more water. Lack of drinking water will cause dehydration. When dehydrated, the body gets tired faster, the immune system weakens and exposure to viruses can easily infect the body.

**Table 8: Analysis of data using t test the difference in differences in initial immune resistance, month 1, month 2 and month 3 in the control group**

Variable	significance (p)		
	Beginning-Month 1	Month 1-Month 2	Month 2-Month 3
Immune resistance	0.000	0.000	0.000

The palms are one of the parts of the body that are most vulnerable to being a hotbed for viruses. Therefore, you should not touch the eyes, nose, and mouth too often, because this can be the cause of transmission of the virus that enters the body and causes pain through the hands to the eyes, nose or mouth. In addition, there are other ways to protect yourself from the corona virus by washing your hands regularly. By making hand washing a habit, this can help kill germs on your hands. Use clean water and soap or an alcohol-based liquid to wash your hands regularly and thoroughly. Avoid stress, do not let the news of the corona virus or content on social media cause continuous stress so that anxiety levels will increase and immune resistance will decrease. Immune function will decrease if there is an increase in the hormone cortisol which causes stress. The WHO [8], [9] advises to limit the search for information related to cases of COVID 19 related to the corona virus. Self-isolation or quarantine at home is one way for the government to break the chain of transmission of this corona virus.

### 3. THE Effect of Psychological Approach Physical Distancing on New Normal Immune Resistance after the COVID 19 Pandemic

In Table 3 above, it can be seen that the difference between the initial immune resistance at month 1, month 1 and month 2, and month 2 and month 3 there is a difference with  $p = 0.000 (< 0.05)$ .

In Table 4 above, it can be seen that the difference in initial immune resistance at month 1, month 1 and month 2, and month 2 and month 3 there is a difference with  $p = 0.000 (< 0.05)$ .



Differences in initial immune resistance at month 1, month 1 and month 2, and month 2 and month 3 there was a difference with  $p = 0.000 (< 0.05)$ .

In the ongoing COVID-19 pandemic, in addition to maintaining a healthy lifestyle, it is also necessary to maintain body resistance and immune resistance. Immune resistance is a defense system of various biological structures and processes that protect the body from disease. Therefore, it is very important in maintaining the body's immunity. There is an increase in the risk of the corona virus if it is in line with the decreased immunity of the human body and also the presence of other diseases that can trigger a weak body. Ways that can be used are to lead a healthy lifestyle, not stress, diligently exercising and other things so that the immune system of comorbid residents is stronger to withstand exposure to the corona virus [10].

The human body will respond to attacks from pathogens such as bacteria, fungi, viruses and other microbes. The immune system will try to hold, seek, and destroy foreign cells including pathogens. There are two immune system responses, namely, innate immunity and adaptive immunity when responding to pathogens that infect the body. Innate immunity has the ability to generally recognize because it has few receptors, but has a rapid response when infection by pathogens occurs. Adaptive immunity has the ability to recognize pathogens specifically because it has many receptors, but has a slow response. Non-specific immunity in innate immunity can recognize parasites by generic signs indicating that the parasite is an invader and not part of the host. Non-specific defenses by themselves may not completely clear the infection only recognizing common and recurrent structural features that distinguish parasites from host cells and in some cases parasites may evade non-specific defenses. In contrast, specific immunity in adaptive immunity recognizes small regions of certain parasitic molecules. Host-specific immunity recognizes and binds to epitopes, which are small molecular sites within larger parasite molecules. An antigen is a parasitic molecule that stimulates a specific immune response because it contains one or more epitopes. The immune system includes molecules, cells, tissues, and organs associated with adaptive immunity such as host defense mechanisms. The immune response, whether innate or adaptive, requires the interaction of certain molecules, cells, and tissues. All lymphocytes in the body originate from stem cells in the bone marrow [11].

Cells that become T cells migrate to the thymus, whereas B cells mature in the bone marrow after being released. B and T cells occupy specific areas of peripheral lymphoid tissue. The various cells involved in antigen presentation and the development of an immune response are followed by a description of the cells involved in effector immune function. Immunity can perform many vital functions, for example, elimination of invading microbes, activation

of amplification mechanisms such as the complement pathway, or development of protective antibodies or cytotoxic T cells that prevent the development of potentially fatal infectious diseases. Lack of sleep can also have an impact on immunity.

Sleep disturbances are associated with increased susceptibility to infection which is characterized by impaired mitogenic lymphocyte proliferation, decreased HLA-DR expression, CD14+ upregulation, and variations in CD4+ and CD8+ T lymphocytes [12]. Taking supplements can also improve and affect the immune system. Regular exercise and maintaining physical fitness can increase the body's resistance and maintain it so that the body is not susceptible to disease. Resistance to disease depends on the quality of the immune system, if it is in optimal condition, it will avoid disease, while if it decreases, it will be susceptible to disease [13].

Vitamins and minerals are needed to maintain an optimal immune system. Most vitamins and minerals cannot be synthesized by the body, so the consumption of a diverse and balanced diet is very much needed for sources of vitamin minerals such as fruits, vegetables, and animal foods. Several vitamins and minerals act as antioxidants that greatly affect the quality of human life which contain Vitamin A, Vitamin E, Vitamin C, selenium, iron, and zinc. This nutrient is needed in the body's defense system because of its role as an antioxidant nutrient [4].

### **Research limitations**

At the time the research took place at the same time as the Corona Virus 19 Pandemic Outbreak, so that comorbid cases visiting the Puskesmas decreased so that the implementation of research that should have been carried out in the Puskesmas building was continued by home visits to the homes of comorbid residents.

### **Conclusion**

1. The difference in immune resistance before the Psychological Approach Physical Distancing New Normal model was carried out after the COVID 19 pandemic in the experimental and control groups was mostly sufficient
2. Differences in immune resistance after the Psychological Approach Physical Distancing New Normal model after the COVID 19 pandemic was carried out in the experimental group with good immune resistance and in the control group, most of the immune resistance was sufficient
3. There is the influence of Psychological Approach Physical Distancing Immune Resistance New Normal Post COVID 19 Pandemic

## Suggestions

1. For the family. Can be used as a family guideline in increasing the New Normal Immune Resistance after the COVID 19 Pandemic
2. For respondents. Can be used as an implementation and replication with the Psychological Approach Physical Distancing model to increase New Normal Immune Resistance after the COVID 19 Pandemic.

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