# Avoiding crowds and reducing mobility is a high risk of Covid-19 incidence in the Working Area of the Paal V Health Center

**Adelina Fitri[1], Emilia Septina[2], Hendra Dhermawan Sitanggang[3], Hubaybah[4], Fitria Eka Putri[5], Ashar Nuzulul Putra[6]**

[1,2,3,4,5] Program Studi Ilmu Kesehatan Masyarakat, Universitas Jambi, Jambi.
[6] Program Studi Kesehatan Masyarakat, STIKES Mitra RIA Husada, Jakarta.

*Corresponding Author
Email : adelinafitri@unja.ac.id

***Abstract***
*The increase in the incidence of COVID-19 has caused quite a bad impact on the whole world in various complex fields. The incidence of COVID-19 cases is high and the case fatality rate (CFR) is high in the world, nationally and in Jambi province and the incidence of COVID-19 cases is high even in Puskemas Paal V also has a fairly high CFR rate. The purpose of this study was to determine risk factors based on the application of health protocols for the occurrence of confirmed cases of COVID-19 in the working area of the Paal V Health Center in Jambi city in 2021. This type of research is analytical and uses a case control study design with a large sample in this study as many as 82 respondents with a ratio of 1:1 so that 41 respondents for the case Group and 41 respondents for the control group using simple random sampling from COVID-19 case data in January-February. It was found that respondents who sometimes avoid crowds (OR: 6.86 95% CI 0.79-59.76) and reduce mobility (OR: 8.24 0.96-70.31) are at high risk of Covid-19. It is necessary to try to keep implementing health protocols while outside the home, especially using masks and limiting official (domestic) travel, especially in groups aged 18-40 years.*

*Keywords:  COVID - 19, Risk Factors, cases*

## INTRODUCTION

COVID-19 (Coronavirus Disease 2019) is an infectious disease whose cause is a virus, namely SARS-CoV-22. COVID-19 is a new disease with an average incubation period of COVID-19 is 5 to 6 days while for the longest incubation period of COVID-19 is for 14 days1. The increase in the incidence of COVID-19 has caused quite a bad impact on the whole world in various complex fields. The incidence of covid-19 cases in the world until December 07, 2021 has reached 266 million confirmed cases and 5.26 million people who died with a CFR (Case Fatality rate) of 1.98 %. Meanwhile, based on the national cumulative figures as of December 22, 2021, 4,261,027 confirmed cases have been recorded, the total number of deaths recorded is 144,034 cases, and the positivity rate is 1.09 per week with a CFR of 3.38% 2. The incidence of deaths due to COVID-19 in Jambi province as of December 07, 2021 is 778 people ( nationally 143,739 or 3.38%) with confirmed cases of 29773 people (nationally 4,253,412) and CFR figures of 2.62%. Based on the incidence of covid-19 cases, of the eleven districts and cities in Jambi province, Jambi city is ranked first in positive cases of Covid-19 based on the cumulative incidence rate of 9,733 cases, 9,473 patients who recovered and there were 254 patients who died from covid-19 with a CFR of 2.6% with a prevalence rate of 2.16%.

Based on the case reports of each village in Jambi city, almost all villages and districts are in the green zone as of December 22, 2021, but there is only 1 village that is still in the yellow zone, namely Simpang Tiga Sipin village, Kota Baru district, which is included in the working area of Healt Center Paal V and based on data obtained from COVID - 19, there were 67 confirmed cases with 7 people dying and the prevalence rate was 0.15% with a CFR rate of 10.4% in May 2021 while in June there were and 2 cases died, so the CFR was 9.1%. From the data obtained, it is known

that there was an increase in confirmed cases from May to June. The purpose of this study was to analyze the risk factors for confirmed cases of COVID-19 in the working area of the Paal V Health Center in Jambi city in 2021.

## RESEARCH METHODS

This study uses the type of analytical research and use case control study design (case and control). The population of this study is people who are in the working area of the Paal V Health Center in Jambi city with a sample for the case Group is covid-19 confirmation case data from January-February. The inclusion criteria for the case Group is to have a positive laboratory test result for COVID-19 and to be 18 years old with an exclusion criterion is to refuse to be a respondent. The inclusion criteria for the control group were having never been infected with COVID-19 by not having positive laboratory test results for COVID-19, being 18 years old and neighbors within 5-10 m of the case Group's home and the exclusion criteria were refusing to be responders and nuclear family members of the confirmation case. Large sample in the study to be conducted is as many as 82 respondents with a ratio of 1:1 so that 41 respondents for the case Group and 41 respondents for the control group. The collection was carried out using simple random sampling from existing COVID-19 case data in January-February to determine the sample that became the case Group and for the control group were people who lived close to the case Group with a distance of 5-10 m. If in 1 House there is 1 person, then the control is the head of the household. If the head of household does not exist, then the control group is his wife or a person whose age meets the criteria, namely chernob18 years. Data analysis using univariate analysis and bivariate analysis with Chi Square test.

## RESULTS AND DISCUSSION

**Table 1. Symptoms experienced**

| Variable | | n | % |
|---|---|---|---|
| **When to get infected with COVID-19** | After The Vaccine 1 | 1 | 2,4 |
| | After The Vaccine 2 | 26 | 63,4 |
| | After The Vaccine 3 | 14 | 34,1 |
| Symptoms Experienced | Symptomatic | 34 | 82,9 |
| | Asymptomatic | 7 | 17,1 |
| Cough | Yes | 25 | 61,0 |
| | No | 16 | 39,0 |
| Headache | Yes | 5 | 12,2 |
| | No | 36 | 87,8 |
| Sore Throat | Yes | 21 | 51,2 |
| | No | 20 | 48,8 |
| Achy | Yes | 11 | 26,8 |
| | No | 30 | 73,2 |
| Anosmia | Yes | 0 | 0,0 |
| | No | 41 | 100,0 |
| Fever | Yes | 22 | 53,7 |
| | No | 19 | 46,3 |
| Colds | Yes | 23 | 56,1 |

| | | No | 18 | 43,9 | |
|---|---|---|---|---|---|

*Source: Processed Primary Data 2022*

Based on Table 1. it is known that of the 41 people infected with COVID-19 infected the most after vaccine 2, 26 people (63.4%) with 34 people (82.9%) having symptoms. The most experienced symptoms are cough, fever, runny nose and sore throat. Patients who had a cough as many as 25 people (61.0%), did not feel a headache as many as 36 people (87.8%), sore throat as many as 21 people (51.2%), did not feel aches as many as 30 people (73.2%), fever as many as 22 people (53.7%) and who had a cold as many as 23 people (56.1%), and no patients who experienced anosmia. From table 4.5 it is also known that patients infected with COVID-19 contracted the COVID-19 virus at work, as many as 18 people (43.9%).

**Table 2. Risk factors for infection with COVID-19 based on the implementation of the 5M health protocol**

| Variable | Case | | Control | | OR (95%CI) | Pvalue |
|---|---|---|---|---|---|---|
| | n | % | N | % | | |
| **Hand Washing** | | | | | | |
| **Sometimes** | 12 | 29,3 | 11 | 26,8 | 1,13 (0,43-2,96) | 1 |
| **Always** | 29 | 70,7 | 30 | 73,2 | | |
| **Using Masks** | | | | | | |
| **Sometimes** | 9 | 22,0 | 6 | 14,6 | 1,64 (0,53-5,12) | 0,568 |
| **Always** | 32 | 78,0 | 35 | 85,4 | | |
| **Keep Your Distance** | | | | | 1 (0,38-2,66) | 1 |
| **Sometimes** | 30 | 73,2 | 30 | 73,2 | | |
| **Always** | 11 | 26,8 | 11 | 26,8 | | |
| **Avoiding The Crowd** | | | | | 6,86(0,79-59,76) | 0,114 |
| **Sometimes** | 40 | 97,5 | 35 | 85,4 | | |
| **Always** | 1 | 2,5 | 6 | 14,6 | | |
| **Reduced Mobility** | | | | | 8,24(0,96-70,31) | 0,063 |
| **Sometimes** | 40 | 97,5 | 34 | 82,9 | | |
| **Always** | 1 | 2,5 | 7 | 17,1 | | |
| **Consuming Health Supplements** | | | | | 1,36 (0,56-3,29) | 0,652 |
| **Sometimes** | 18 | 43,9 | 15 | 36,6 | | |
| **Always** | 23 | 56,1 | 26 | 63,4 | | |

*Source: Processed Primary Data 2022*

The results of bivariate analysis obtained P=1 and CI values that passed 1 (95% CI 0.43-2.96), it can be concluded that there is no significant relationship between washing hands and the risk of being infected with COVID-19. The results of bivariate analysis obtained P=0.568 and CI values that passed 1 (95% CI 0.53-5.12), it can be concluded that there is no significant relationship between using a mask and the risk of being infected with COVID-19. The results of bivariate analysis obtained P=1 and CI values that passed 1 (95% CI 0.38-2.66), it can be concluded that there

516

is no significant relationship between maintaining distance and the risk of being infected with COVID-19. The results of bivariate analysis obtained P=0.114 and CI values that passed 1 (95% CI 0.79-59.76) which can be concluded that there is no significant relationship between avoiding crowds and the risk of being infected with COVID-19. The results of bivariate analysis obtained P=0.063 and CI values that passed 1 (95% CI 0.96-70.31) then there can be no significant relationship between reducing mobility and the risk of being infected with COVID-19. The results of bivariate analysis obtained P=0.652 and CI values that passed 1 (95% CI 0.56-3.29), it can be concluded that there is no significant relationship between consuming health supplements and the risk of being infected with COVID-19.

**Discussion**

Coronavirus Disease 2019 or COVID-19 is an infectious disease and is caused by the SARS-CoV-24 virus. This study uses confirmation cases as a group of cases with the condition of having a Nucleic Acid Amplification test laboratory examination results with positive results or have met one of the criteria for suspected cases or as a close contact with the results of laboratory examination of RDT-Ag which results are positive for the region in accordance with the use of RDT-Ag for Region B and C criteria or have RDT-Ag examination results which results are positive in accordance with the use of RDT-Ag for region C5 criteria. The COVID-19 cases sampled for the case Group were 41 samples from Case data on January 30-February 28, 2022 with an incidence proportion of 0.14%. This study was conducted at the beginning of the mutation of the COVID-19 virus, the omicron virus. The relationship between the implementation of the 5m health protocol and the incidence of COVID-19

Based on the results of the analysis, it is known that there is no connection of the application of the 5m protocol with COVID-19 infection. The results obtained are in line with research conducted by Sukawana et al that community compliance in preventing COVID-19 transmission is very low. Compliant respondents (1.7%) which is also in line with other researchers who say that the implementation of health protocols in the use of masks and performing CTPS is only 3.3%, and 35% of respondents. Respondents only implemented one of the health protocols and 58.3% did not apply the recommended health protocol.

The results showed that the respondents were in the category sometimes in applying health protocols. The proportion of respondents who use masks in the category sometimes amounted to 18.3% compared to people who are in the category always use masks only amounted to 81.7%. The proportion of respondents who wash their hands using soap in the category sometimes amounted to 20.0% compared to people who are in the category of always using a mask only amounted to 80.0%. This can increase the risk of being infected with COVID-19 if someone often travels out of town or high-risk locations. To prevent the transmission of COVID-19 in the community, it can be done by doing physical distancing, hand hygiene, coughing/sneezing ethics, wearing masks, limiting activities outside the home and ensuring access to hand hygiene in public facilities10.

One of the ways to prevent and control the COVID-19 pandemic is through vaccination combined with non-pharmaceutical interventions (5m health protocol). Although the implementation of the 5M health protocol has no relationship with the incidence of COVID-19, the implementation of the 5M health protocol can reduce the risk of transmission of COVID-19 through droplets. Therefore, the implementation of the 5m health protocol is one of the priorities in controlling COVID-19. Therefore, the implementation of health protocols must still be applied even though it is in the new normal era and getting vaccinated.

This study was conducted at the beginning of the development of mutations from the COVID-19 variant, the omicron variant. Scientists are still studying how effective the COVID-19 vaccine is in preventing infection from omicron13. Vaccinating and implementing health protocols (non-pharmaceutical) are ways that can be done to prevent the transmission of COVID-19 and

517

control the COVID-19 pandemic. Although the implementation of the 5M health protocol has no relationship with the incidence of COVID-19, implementing health protocols can reduce the risk of being infected with COVID-19.

The results of the analysis found that people who avoid crowds in the sometimes category have a 6.86 Times risk of being infected with COVID-19 compared to people who always avoid crowds. The results of the analysis also showed that people who reduced mobility in the occasional category had 8.24 times the risk of being infected with COVID-19 compared to people who always reduced mobility. Therefore, the implementation of health protocols is a priority in controlling COVID-19. However, to prevent the transmission of COVID-19, the implementation of health protocols must still be implemented and by still vaccinating. Based on this, it is expected that they can continue to comply with health protocols wherever they are and maintain body immunity to reduce the risk of being infected with COVID-19.

## CONCLUSION

The highest proportion of age is 18-49 years, the majority are women, have higher education, do not have a history of close contact, do not have a travel history, do not have comorbidities, have been vaccinated and sometimes apply the 5m health protocol in the working area of the Paal V Health Center. There is a relationship between age and education to the risk of being infected with COVID-19. There is no relationship between gender, vaccine status, close contact history, travel history and several health protocols to the risk of being infected with COVID-19.

COVID-19 transmission occurs most in the workplace so that the need for mobility or restrictions on the number of incoming employees is even better and it is hoped that the Paal V Health Center can provide interventions such as disseminating the media about the transmission of COVID-19 and ways to prevent contracting COVID-19. The addition of the number of controls such as 1:2 even sapai 1: 4 and matching for the selection of controls such as age and gender.

## REFERENCES

CDC. (2022). Omicron Variant: What You Need to Know. Retrieved from https://www.cdc.gov/coronavirus/2019-ncov/variants/omicron-variant.html

Cen, Y; Chen, X; Shen, Y; Zhang, XH; Lei, Y; Xu, C; Jiang, WR; Xu, HT; Chen, Y; Zhu, J; Zhang, LL, Liu, YH. 2020. Risk Factors for disease progression in patients with mild to moderate Coronavirus disease 2019 a multi centre observational. Clinical Microbiology and Infection.www.clinicalmicrobiologya ndinfection.

Dewi, EU. (2020). Faktor-Faktor Yang Mempengaruhi Perilaku Masyarakat Dalam Pencegahan Penularan COVID-19

Ge Y, Chen Z, Handel A, Martinez L, Xiao Q, Li C, et al. The impact of social distancing , contact tracing , and case isolation interventions to suppress the COVID-19 epidemic : A modeling study. Epidemics [Internet]. 2021;36:100483. Available from: https://doi.org/10.1016/j.epidem.2021.100483

Hidayani WR. Faktor Faktor Risiko Yang Berhubungan Dengan COVID 19 : Literature Review. J Untuk Masy Sehat. 2020;4(2):120–34.

Kementerian Kesehatan Republik Indonesia. 2020.  Pedoman Pencegahan dan Pengendalian Coronavirus Disease (COVID-19) Revisi ke-5

Karroum, dkk. Public health effects of travel-related policies on the COVID-19 pandemic: A mixed-methods systematic review. Journal of Infectius 83 (2021) 413-423

Kementerian Kesehatan Republik Indonesia. 2021. Laporan Mingguan penanganan Covid-19.

Putra, W. F. Analisis Efikasi dan Efektivitas Vaksin COVID-19 terhadap Varian SARS-CoV-2: Sebuah Tinjauan Literatur. J Kdokt Meditek. 28(1), 107–119. Available from: http://ejournal.ukrida.ac.id/ojs/index.php/Meditek/article/view/2243/version/2221          DOI: https://doi.org/10.36452/jkdoktmeditek.v28i1.2243

Satuan Petugas Penanganan Covid-19. 2021. Data dan Informasi Coronavirus Disease 2019 (Covid-19) Provinsi Jambi Per Tanggal 2021-10-16 https://corona.jambiprov.go.id/v2/

Sirajuddin N, Samsualam, Haeruddin. Pengaruh Kontak Erat terhadap Kasus Konfirmasi Covid- 19 di Kota Makassar Tahun 2020. J Muslim Community Heal. 2020;100–10.

World Health organization. 2020. Coronavirus Disease (COVID-19). https://www.who.int/health-topics/coronavirus#tab=tab_1 Diakses pada tanggal 11 Oktober 2021 pukul 18.58 WIB

Wang D, Dkk. 2020. Clinical Characteristics Of 138 Hospitalized Patients With 2019 Novel Coronavirus–Infected Pneumonia In Wuhan, China. 323(11): 1061–1069. doi: 10.1001/jama.2020.1585

Wang D, dkk.  2020. Clinical Course and Outcome of 107 patient infected with the Novel Coronavirus , SARS-CoV-2, discharged from two hospital in Wuhan, China. 24(1):188. doi :10.1186/s13054-020-02895-6