

## Community Behavior to Prevent Covid-19 and its Associated Factors in North Parigi District

I Kadek Wartana<sup>1\*</sup>, Veni Mornalita Kolupe<sup>2</sup>, Sitti Fajrah<sup>3</sup>, Rikwan<sup>4</sup>, Gustini<sup>5</sup>

<sup>1</sup>Health Sciences College of Indonesia Jaya, Sulawesi Tengah, Indonesia, [dekadharna05@yahoo.co.id](mailto:dekadharna05@yahoo.co.id)

<sup>2</sup>Health Sciences College of Indonesia Jaya, Sulawesi Tengah, Indonesia, [veny-manik@yahoo.com](mailto:veny-manik@yahoo.com)

<sup>3</sup>Health Sciences College of Indonesia Jaya, Sulawesi Tengah, Indonesia, [sittifajrah2@gmail.com](mailto:sittifajrah2@gmail.com)

<sup>4</sup>Health Sciences College of Indonesia Jaya, Sulawesi Tengah, Indonesia, [rikwanstik@yahoo.co.id](mailto:rikwanstik@yahoo.co.id)

<sup>5</sup>Health Sciences College of Bala Keselamatan, Sulawesi Tengah, Indonesia, [gustini-2017@fkip.unair.ac.id](mailto:gustini-2017@fkip.unair.ac.id)

\*Corresponding Author: [dekadharna05@yahoo.co.id](mailto:dekadharna05@yahoo.co.id)

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### ABSTRACT

**Introduction:** The Spread of Covid-19 can be prevented by implementing Covid-19 prevention behavior. This research aims to analyze factors related to covid-19 prevention behavior in the community.

**Methods:** This research was an observational analytical study with a cross sectional design approach in North Parigi District from July until December 2022. Variables in this study include age, gender, occupation, income, education, health insurance, history of covid-19 infection, history of covid-19 vaccination and behavior to prevent covid-19. Sample in this study was 120 people taken by simple random sampling. Data were collected using a questionnaire and analyzed using univariate and bivariate analysis utilizing the Chi Square test. Ethical approval was obtained from Health Polytechnis of Palu, Ministry of Health Indonesia, Number: 0089/KEPK-KPK/VI/2022.

**Results:** The results of this study demonstrated that there was a relationship between age ( $p=0.000$ ), occupation ( $p=0.001$ ), history of covid-19 infection and behavior to prevent covid-19.

**Conclusion:** This study concludes that there was a significant relationship between age, occupation, history of covid-19 infection and behavior to prevent covid-19. therefore, the community and health workers can work together, support each other, and follow the guidelines to create a saver and healthier environment from covid-19 for all.

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## INTRODUCTION

The Corona Virus Disease (Covid-19) has spread since it was first discovered in Wuhan, China in 2019 and has caused a pandemic and public panic throughout the world (1,2,3,4). In humans, Covid-19 can cause respiratory infections ranging from coughs, colds, shortness of breath, lung disease and can even cause death (1,5). A systematic review of 53,000 inpatients showed that 20.2% of covid-19 cases progressed to severe disease with a mortality rate of 3.1%. The risk of death will be higher in elderly people who have a history of comorbidities, such as cardiovascular disease, chronic kidney disease, and chronic obstructive pulmonary disease (6). Indonesia has not escaped the spread of this viral infection (7). The number of covid-19 cases in Indonesia still continues to increase, where the number of positive covid-19 cases are 1.6 million, 1.53 million cases recovered, and 45,652 cases death (1).

Efforts to combat the global covid-19 pandemic are very important for society to prevent the spread of this deadly virus. One important aspect of community behavior is compliance with public health guidelines, such as using masks, hand washing, bring hand sanitizer, and social distancing. This series of health protection behaviors has been proposed by World Health Organization (WHO) to become a global plan to prevent the spread of covid-19 infection (8). In Indonesia, the government has made various efforts to prevent and reduce the prevalence and mortality due to covid-19 virus infection, such as implementing the health protocol, namely 3M, which includes wearing masks, washing hands and maintaining distance. This health protocol must be implemented by all Indonesian people wherever and whenever they are (4). These behaviors are simple but effective in providing a significant impact in reducing the spread of the virus in society. However, as time went by in the months after the outbreak of this disease occurred in the world, compliance with the command to stay in their homes as much as possible, avoid gatherings, frequently wash their hands, social distancing, and avoid touching their faces has decreased (9,10).

Survey data from the Central Statistics Agency (BPS) regarding the implementation of the 3M health protocol, namely washing hands with soap, wearing masks, social distancing, and avoid crowds, showed that as many 92% of people complied with wearing masks. However, the percentage of public compliance with the behavior of washing hands, social distancing, and avoiding crowds were actually inversely proportional and were decreased(11). The results of previous research also show that community behavior regarding covid-19 was still at the level moderate behavior (46.2%), bad behavior (26.1%), and only 27% of participants had good behavior (12). Additional studies indicate that the majority of individuals are taking precautionary measures to protect themselves from Covid-19. These actions include staying indoors (77.8%), wearing a mask outside (68.1%), washing hands frequently with soap (96.5%), maintaining a safe distance from others or avoiding crowded places (93.1%), and 52.1% taking vitamin supplements (13).

The ebb and flow of behavior change efforts can be attributed to the dynamic nature of human decision-making. While some individuals may be steadfast in their commitment to preventive measures, others may fluctuate in their adherence based on external circumstances. Human behavior in preventing the spread of Covid-19 can be influenced by various factors that were classified into five categories: social factors, cultural factors, individual factors, knowledge, and education factors (10). Factors such as age, gender, household income, education, household size, region, population density, language, chronic health conditions, trust and communication with neighbors, communication with family and friends, getting tested for COVID, time period, and Having a family member or close friend die from COVID-19 or respiratory illness was found to have a significant relationship with COVID-19 prevention behavior (8).

## **METHOD**

A cross-sectional study has been conducted to identify factors related to the community behavior to prevent covid-19 in North Parigi District from July until December 2022. The survey included a total sample of 120 people interviewed (45% female and 55% male). The study analysed eight independent variables at age, gender, occupation, income, education, health insurance, history of covid-19 infection, and history of covid-19 vaccination. Age three categories adolescent, adult, and elderly. Gender two categories female and male. Occupations two categories unemployed and employed. Income two categories  $\leq 1$  million and  $> 1$  million. Education two category elementary and middle-high. Health insurance two categories not have and have. History of covid-19 infection two categories never and ever. History of covid-19 vaccination two categories yes and no. The dependent variable in this study was the behavior to prevent covid-19 with two categories less obedient and obedient.

This study analysed the associations between exposure indicators, such as age, gender, occupation, income, education, health insurance, history of covid-19 infection, and history of covid-19 vaccination, and behavior of prevent covid-19 outcome indicators. To compare the association, chi-square test were employed in IBM SPSS ver. 22 (IBM Corp.). Statistical significance was set at the 5% level or power.

The survey instrument employed in this study is an adapted version of the CSIS Indonesia survey (14). All the participant interviewed in this study were explained about the detail of the survey and informed about the consent. Written informed consent was obtained from all participants for inclusion in the study. Informed consent statement

was printed on the form that signed by participant who agree to participate in the survey. This research received ethical approval from the Health Polytechnic of Palu, Ministry of Health Indonesia, Number:0089/KEPK-KPK/VI/2022.

**RESULTS**

The results of this study were obtained univariate and bivariate. Univariate results were presented independent variables which include age, gender, occupation, income, education, health insurance, history of covid-19 infection, history of covid-19 vaccination and dependent variables, namely behavior to prevent covid-19. The results from the bivariate analysis using chi-square test were indicated if there was or not a significant association between the independent and dependent variables.

**Table 1.** Respondents Characteristics (n = 120)

No	Respondents Characteristic	N	%
<b>Age</b>			
1	18-25 Years (Adolescent)	30	25.0
2	26-45 Years (Adult)	58	48.3
3	46-65 Yeras (Elderly)	32	26.7
<b>Gender</b>			
1	Female	54	45.0
2	Male	66	55.0
<b>Occupation</b>			
1	Unemployed	31	25.8
2	Employed	89	74.2
<b>Income</b>			
1	≤ 1 Million	109	90.8
2	> 1 Million	11	9.2
<b>Education</b>			
1	Elementary	84	70.0
2	Middle-High	36	30.0
<b>Health Insurance</b>			
1	Not Have	31	25.8
2	Have	89	74.2
<b>History of Covid-19 Infection</b>			
1	Ever	29	24.2
2	Never	91	75.8
<b>History of Covid-19 Vaccination</b>			
1	Yes	98	81.7
2	No	22	18.3

The results study (Table.1) were showed that most of respondents were aged between 26-45 years/adults (48.3%), male (66%), Employed (74.2%), elementary education (70%), have an income of ≤ 1 million (90.8%), have health insurance (74.2%), never been infected with covid-19 (75.8), and have history of covid-19 vaccination (81.7%).

**Table 2.** Behavior to Prevent Covid-19 (n = 120)

No	Prevent Covid-19	N	%
<b>Using Mask</b>			
1	Never	2	1.6
2	Sometimes	50	4.7
3	Always	68	56.7
<b>Hand Washing</b>			
1	Never	1	0.8
2	Sometimes	46	38.2

3	Always	73	60.8
Bring Hand sanitizer			
1	Never	31	25.8
2	Sometimes	56	46.7
3	Always	33	27.5
Social Distancing			
1	Never	16	13.3
2	Sometimes	50	41.7
3	Always	54	45.0

Table 2 showed that behavior to prevent covid-19 consists of using mask, hand washing, bring hand sanitizer, and social distancing. Most of respondents were used always mask to prevent covid-19 (56.7%), always hand washing (60.8%), sometimes bring hand sanitizer (46.7%), and always social distancing (45%). The results indicated that the aspect of behavior to prevent covid-19 that respondents frequently prioritize was practiced through hand washing.

**Table 3.** Relationship Analyses for Behavior to Prevent Covid-19 (n = 120)

No	Variables	Behavior to Prevent Covid-19				p Value
		Less Obedient		Obedient		
		n	%	n	%	
Age						
1	18-25 Years (Adolescent)	25	83.3	5	16.7	0.000
2	26-45 Years (Adult)	24	41.4	34	58.6	
3	46-65 Years (Elderly)	12	37.5	20	62.5	
Gender						
1	Female	27	50.0	27	50.0	1.000
2	Male	34	51.5	32	48.5	
Occupation						
1	Unemployed	24	77.4	7	22.6	0.001
2	Employed	37	41.6	52	58.4	
Income						
1	≤ 1 Million	55	50.5	54	49.5	1.000
2	> 1 Million	6	54.5	5	45.5	
Education						
1	Elementary	47	56.0	37	44.0	0.130
2	Middle-High	14	38.9	22	61.1	
Health Insurance						
1	Not Have	12	38.7	19	61.3	0.174
2	Have	49	55.1	40	44.9	
History of Covid-19 Infection						
1	Ever	25	86.2	4	13.8	0.000
2	Never	36	39.6	55	60.4	
History of Covid-19 Vaccination						
1	Yes	46	46.9	52	53.1	0.118
2	No	15	68.2	7	31.8	

The outcomes of the bivariate examination conducted utilizing the chi-square test at a 95% confidence level (Table 3) showed that there was a significant relationship between age ( $p=0.000$ ), occupation ( $p=0.001$ ), history of covid-19 infection ( $p=0.000$ ) and behavior to prevent covid-19 ( $p < 0.05$ ). While the gender ( $p=1.000$ ), income ( $p=1.000$ ), education ( $p=0.130$ ), health insurance ( $p=0.174$ ), history of covid-19 vaccination ( $p=0.118$ ) did not show a significant relationship with behavior to prevent covid-19 ( $p > 0.05$ ).

## DISCUSSION

The research findings indicated that the most common Covid-19 prevention behavior among respondents is hand washing, with a percentage of 60.8%. Following closely behind is the using masks at 56.7%, and social distancing at 45%. A significant portion of respondents, 46.7%, also carry hand sanitizer. Overall, the majority of respondents fell into the less compliant category when it comes to preventing Covid-19, with a percentage of 50.8%. The findings from this study also indicated that age, occupation, and history of Covid-19 infection are significant factors associated with behavior to prevent covid-19 ( $p$  value  $< 0.05$ ). On the other hand, variables like gender, income, education, health insurance, and history of Covid-19 vaccination do not show any significant correlation with behaviors to prevent Covid-19 ( $p$  value  $> 0.05$ ). Previous research shows that the majority of the people already have good behavior in preventing covid-19 (1,4,15). The general public is showing positive behavior in taking precautions against Covid-19. This is because they have faith that practices like wearing masks, regularly washing hands, and practicing social distancing can provide a sense of safety, well-being, and lower the chances of contracting the virus(16).

Research findings in Konawe Regency revealed that residents have not been adhering to recommended health protocols in order to prevent the spread of COVID-19, specifically in terms of maintaining a safe distance from others (17). Research conducted in 21 Indonesian provinces revealed that most individuals engage in Covid-19 prevention practices in various public settings like shopping malls, places of worship, and healthcare facilities. However, the same study found that adherence to prevention measures in traditional markets is lacking, as visitors and traders struggle to maintain physical distance and avoid large crowds (18). The findings from a study conducted in Oebobo sub-district revealed that a majority of respondents (93.1%) demonstrated exemplary behavior when it comes to preventing COVID-19, in stark contrast to a small percentage of respondents (6.9%) who exhibited poor prevention practices (19).

Age is a significant factor that correlates with COVID-19 prevention behavior (8,10,20). Elderly individuals have a weakened immune system compared to adolescent and adult individuals, especially if they have comorbidities (21). Based on current data, it is true that the elderly account for the majority of severe cases and deaths in COVID-19 patients. In elderly individuals, the immune system responds gradually to the initial virus invasion, allowing for increased viral replication. This results in a quicker entry of the virus into the body and a higher number of infected cells (22). Therefore, by practicing proper prevention behavior, they can protect themselves from getting infected with COVID-19. Previous studies have indicated that elderly individuals have demonstrated a high level of adherence to the Covid-19 health protocols (23).

The occupation also plays a substantial role in influencing the behaviors to prevent Covid-19. There exists a significant correlation between occupation (24) and how they approach the measures set in place to combat the spread of the virus. The complexities surrounding one's job can have a profound impact on their adherence to guidelines aimed at safeguarding public health. In essence, the intricate nature of an individual's work can potentially shape their attitudes and actions towards protecting themselves and others from the threat of Covid-19. The findings of this study contradict previous research as there was no significant relationship found between occupation and COVID-19 prevention behaviors. This is because both employed and unemployed respondents are equally taking preventive measures against Covid-19 (25,26)

One of the key factors influencing behavior related to preventing the spread of COVID-19 is an individual's history of COVID-19 infection. Personal experience is one of the factors that influence people's behavior (10,15). Someone's past exposure to this virus, will remind them of going through these difficult times, it could impact their current precautions. Individuals who perceive themselves as being at higher risk of catching COVID-19 are more likely to adhere to health protocols. This sense of fear is heightened by a personal or familial history of underlying health conditions. Additionally, witnessing a close relative go through the treatment process for COVID-19 can instill a sense of fear, prompting greater adherence to health protocols (27).

The study is limited by only using a cross-sectional design. By incorporating qualitative data, researchers can delve deeply into the factors related to COVID-19 prevention behavior. In-depth interviews could not be conducted due to the implementation of health protocol rules by the government during the study. This hindered researchers from interacting intensively with study respondents, as many refused to be interviewed out of fear of contracting the COVID-19 virus. Therefore, researchers hope that this study can be continued using qualitative

methods so that various factors related to COVID-19 prevention behavior can be explored more deeply. Considering the importance of implementing health protocols to prevent the spread of the COVID virus and hopefully reduce the number of people infected with COVID-19.

## **CONCLUSION**

In conclusion, this study showed there is a significant association between age, occupation, history of covid-19 infection and behavior to prevent covid-19. Community behavior to prevent covid-19 plays an important role in preventing the spread of covid-19 and protecting public health. It is hoped that all parties, both the community and health workers, can work together, support each other, and follow the guidelines to create a safer and healthier environment from covid-19 for all. Hopefully, that all communities will continue to be proactive in implementing health protocols to combat the covid-19 pandemic and Health professionals are planning to enhance their health education initiatives aimed at raising public awareness about the significance of adhering to preventive measures against Covid-19. This is being done in order to curb the transmission of the virus within the community.

## **AUTHOR'S CONTRIBUTION STATEMENT**

I Kadek Wartana developed the design and implementation of the research, collecting data, analyzing and interpreting data, writing and revising draft article, final approval of the version to be published. Veni Mornalita Kolupe and Sitti Fajrah contributed to the data analysis and interpretation, critical revision of the article, final approval of the version to be published. Rikwan and Gustini contributed the critical revision of the article, final approval of the version to be published.

## **CONFLICTS OF INTEREST**

The authors have stated that they do not have any conflicts of interest, including personal relationship or financial matters, that could potentially influence the results of this study.

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