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## **Description of Knowledge, Attitude, and Practice of Coronavirus Disease-19 Prevention Based on Gender and Age Group in Java Island Community**

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### **Abstract**

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**Background:** Coronavirus Disease 2019 (COVID-19) is an emerging respiratory disease that was first detected in Wuhan, China in December 2019 and has become a public health problem around the world. The main mode of transmission of this virus is human to human transmission via respiratory droplets that produced when a person coughs, sneezes, or talks. This virus spread rapidly from China to other countries. The participation of society is needed in reducing the spread of COVID-19. People's commitment and obedience in dealing with this pandemic situation are generally influenced by knowledge, attitudes and practices. In previous studies, it was found that gender and age affect the level of knowledge, attitudes, and practices for preventing COVID-19. This study aimed to assess knowledge, attitudes and practices towards COVID-19 prevention based on gender and age group in Java Island residents.

**Methods:** This study used a quantitative descriptive method with a cross-sectional study design. The sampling technique used is non-probability sampling. The number of samples in this study was 1,680 Java Island residents.

**Results:** The variables in this study were measured through a self-reported questionnaire that was distributed online. The results showed that the female and the late adult group ( $\geq 61$  years) tended to have good knowledge and practice towards COVID-19 prevention.

**Conclusion :** It is necessary to increase education related to COVID-19 and socialization of health protocols to the community with male sex and young age groups

**Keywords:** COVID-19, Knowledge, Attitude, Practice, Gender, Age Group

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## Background

A new type of coronavirus was discovered due to unusual pneumonia symptoms in a group of patients in Wuhan City, China in December 2019. A study found that the genome of this virus has an 86.9% similarity with the Severe Acute Respiratory Syndrome Corona Virus (SARS-CoV) genome.<sup>1</sup>

The International Committee on Taxonomy of Viruses (ICTV) officially named the new virus Severe Acute Respiratory Syndrome Coronavirus-2 (SARS-CoV-2) and the World Health Organization (WHO) named the disease Coronavirus Disease 2019 (COVID-19).<sup>2</sup>

The main mode of transmission of this virus is from human to human through droplets that come out when the sufferer coughs, sneezes, or talks.<sup>3</sup>

Patients who get COVID-19 disease generally have mild symptoms such as dry cough, sore throat, and fever. However, in some severe cases it can cause complications and death.

SARS-CoV-2 virus spreads very fast. Since the beginning of confirmed cases in China on December 31, 2019 to July 27, 2020, there were 16,114,494 positive cases and 646,641 deaths spread across 212 countries. The global death rate for COVID-19 is 4.0%.<sup>4</sup>

Indonesia reported its first case of COVID-19 on March 2, 2020. Since the beginning of the confirmed cases until July 27, 2020, COVID-19 sufferers in Indonesia reached 100,303 cases. This figure is the highest in Southeast Asia. Meanwhile, the number of COVID-19 deaths in Indonesia was 4,838 with a Case Fatality Rate of 4.8%.

Java Island is the epicenter of COVID-19 in Indonesia. This is because 4 out of 6 provinces in Java Island are the provinces with the highest cases in Indonesia with the highest number of cases, namely East Java 20,812 cases, DKI Jakarta 19,592

cases, Central Java 8,622 cases and West Java 6,084 cases. Meanwhile, the number of cases in Banten Province was 1,748 cases and Yogyakarta Province was 558 cases.<sup>5</sup>

The addition of COVID-19 cases in people on the island of Java continues to increase every day and the rate of adding cases is getting faster. This high number of cases and the addition of cases means that people in Java have a high risk of being infected with COVID-19. The participation of all levels of society is needed in suppressing the spread of COVID-19. Community commitment and obedience in dealing with this pandemic situation is generally influenced by knowledge, attitudes and practices.<sup>6</sup>

Previous studies have shown that gender and age affect a person's knowledge, attitudes, and practices.<sup>7-9</sup> Gender is related to the roles and responsibilities given to them by society as well as their position in the family and in society.

All of these affect the risks they take and they face, and their efforts to improve their health.<sup>10</sup> Meanwhile, a person's age can influence their behavior. This relates to changes in the individual's condition psychologically and physiologically.<sup>11</sup>

Measurement of knowledge, attitudes, and practices related to COVID-19 prevention can be useful to determine the level of public awareness of the ongoing pandemic. This information can be useful in determining appropriate interventions for the community. Therefore, researchers are interested in examining the description of knowledge, attitudes, and practices of preventing COVID-19 in the people of Java Island.

## Methods

This research is a quantitative study with a descriptive approach and a

cross-sectional study design. The population in this study were people aged  $\geq 18$  years in Java Island in 2020. The minimum sample size in this study was calculated using the Lemeshow proportion estimation formula and obtained a sample of 1,680 respondents. The sampling technique used is Accidental Sampling. This research instrument uses a google form questionnaire which is distributed online via social media. The data in this study were analyzed using univariate and bivariate analysis.

## Results and Discussion

Based on table 1, it can be seen that the gender of women (77.7%) is more than men (22.3%) and the most age group is 18-40 years (94.9%), while the least was at the age of  $\geq 61$  years (0.4%).

**Table 1.** Frequency Distribution of Respondent Characteristics

Responden Characteristics	N	%
<b>Gender</b>		
Man	374	22,3
Women	1.306	77,7
<b>Age</b>		
18-40	1.594	94,9
41-60	79	4,7
$\geq 61$	7	0,4

Based on table 2, it is known that the proportion of good knowledge levels is more common among respondents with female gender and age group  $\geq 61$  years, the proportion of positive attitudes is more common in female respondents and the 41-60 year age group, and the proportion of good practices is more common in female respondents and the age group  $\geq 61$  years old.

Gender is one of the factors that can modify behavior so that it affects individual health. Gender is also related to the different life roles and behavior of

men and women in society. Women have more responsibility for their health and consider health issues more than men.<sup>10,12,13</sup>

In this study, the proportion of the level of good knowledge, the proportion of positive attitudes, and the proportion of good practice was higher among female respondents. This can be influenced by the tendency of women to seek better health-related information than men. Women have an important role in managing household affairs, therefore women tend to seek out health-related information so that it can be applied to their families.<sup>9</sup> In addition, men also have a tendency to engage in risky behavior, so that compliance with COVID-19 prevention is lower.<sup>6</sup>

The results of this study are in line with research in Bangladesh which found that the proportion of good knowledge, positive attitudes, and good practices was also higher among female respondents. Globally, women are more likely than men to adopt recommended precautions.

This finding is very important, because targeting women in health promotion can result in better implementation in their families. With age, a person's cognitive abilities including speed of information processing, memory capacity and long-term memory decline.<sup>11</sup> Contrary to this theory, the results of this study indicate that the proportion of good knowledge and good practice levels is greater in the elderly adult group ( $\geq 61$  year).

This can be influenced by the perception of risk in the elderly who are a vulnerable group to be infected with COVID-19. A person who is susceptible to a disease tends to practice preventing the disease.<sup>14</sup> Therefore, those who are elderly are more aware of COVID-19 which is reflected in good prevention knowledge and practices.

A study in several countries also found that people in early adulthood tend to have risky behavior.<sup>15</sup> In line with this theory, the results of this study indicate that early adulthood has lower COVID-19 prevention practices compared to older age groups. At a

young age, the reward system in the part of the brain that encourages a person to do something fun, matures faster than the part needed for cognitive control. This makes a person more likely to engage in risky behavior.<sup>15</sup>

**Tabel 2.** Description of Knowledge, Attitudes, and Practices based on Gender and Age Group

Respondent Characteristics	Knowledge				Attitude				Practice			
	Less		Good		Negative		Positive		Less		Good	
	f	%	f	%	f	%	f	%	f	%	f	%
<b>Gender</b>												
Men	122	32,6	252	67,4	212	56,7	162	43,3	208	55,6	166	44,4
Women	408	31,2	898	68,8	608	46,6	698	53,4	556	42,6	750	57,4
<b>Age</b>												
18-40	733	46,0	861	54,0	780	48,9	814	51,1	733	46,0	861	54,0
41-60	29	36,7	50	63,3	35	44,3	44	55,7	29	36,7	50	63,3
≥61	2	28,6	5	71,4	5	71,4	2	28,6	2	28,6	5	71,4

## Conclusion

The level of good knowledge, positive attitudes, and good practices was higher for female respondents. The level of good knowledge and good practice was higher in the advanced adult age group (≥61 years), while positive attitudes were higher in the middle adult age group (41-60 years). It is necessary to increase education related to COVID-19 and socialization of health protocols to the community with the male sex and young age groups.

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