Covid 19: Public Knowledge and Preventive Behaviors

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Abstract

Background and Aim: Coronavirus disease 2019 (Covid-19), an infectious disease caused by severe acute respiratory syndrome coronavirus is being the world serious problem with the total case that has elevating dramatically. The people knowledge about Covid-19 is prominent aspect in deal with the behavior to prevent the transmission of Covid-19. The aim of this research is to identify the relationship between the level of knowledge and Covid-19 prevention behavior within population.
Methods: This research used cross sectional approach. The population were the residence in Rojopolo Disrict, Lumajang, East Java, Indonesia. The survey was conducted using questionnaires that was requested and then collected online used Google Forms among 289 respondents on March-April 2021. The questionnaires examined the demographic of respondents, covid-19 knowledge and preventive behaviors. This research was conducted in a district at Lumajang, East Java, Indonesia.
Results: The majority (79.6%) of respondents were at good level of knowledge about Covid-19, 18.3% have enough knowledge, and the rest (2.1%) were at poor level. Meanwhile, for the preventive behavior, most respondents (84.8%) have implemented good behaviors in preventing the transmission such as doing hand washing, wearing mask, and maintaining physical or social distancing.
Conclusion: There is a correlation between the level of knowledge about Covid-19 and preventive behaviors (p: 0.001; r: 0.568; α: 0.05). Hence, the higher the knowledge, the better the behavior to prevent the transmission of Covid-19. People with good knowledge will perform good behavior in preventing Covid-19. Therefore, public awareness to access the right information about Covid-19 is essential to enhance people in performing preventive behaviors during pandemic era.

Keywords: Covid-19; Knowledge; Preventive Behaviors; Pandemic

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INTRODUCTION

Coronavirus Disease 2019 (Covid-19) is a type of infectious disease caused by the SARS-CoV-2 virus or Severe Acute Respiratory Syndrome Coronavirus 2. Two types of coronavirus can cause serious symptoms, such as Middle East Respiratory Syndrome (MERS) and Severe Acute Respiratory Syndrome. Syndrome (SARS). Acute respiratory disorders such as coughing, shortness of breath, and fever are symptoms that often occur in someone with Covid-19. The incubation period for Covid-19 is estimated to be 5-6 days and the longest is 14 days. Kidney failure, pneumonia, acute respiratory distress, death are severe symptoms for someone infected with Covid-19 (Kementerian Kesehatan Republik Indonesia, 2020).

The development of confirmed Covid-19 cases on July 2020, was 62.138 cases and 4.975 cases of mortality. The Covid-19 mortality rate in Indonesia is 8.9%, this figure is the highest in Southeast Asia. On May 27 in East Java there were 22.089 confirmed positive people with the most positive cases coming from the city of Surabaya as many as 8.691 positive cases of corona while positive cases in the city of Lumajang there were 135 positive cases, in Lumajang precisely in Jatiroto District there were 18 positive cases of Covid-19 (Kementerian Kesehatan Republik Indonesia, 2020).

In the case of the Covid-19 pandemic in Indonesia, public knowledge about Covid-19 is very much needed as a basis for the community in showing Covid-19 prevention behavior. Knowledge is the result of understanding obtained from observing a particular object. The majority of knowledge possessed by a human being comes from what is heard and what is seen. In taking action and behavior in solving a problem, the knowledge aspect is a very important domain. Several factors such as education level, age, occupation, socio-cultural factors, and environmental factors are factors that can affect knowledge (Notoatmodjo, 2012).

Behavior is an action that a person takes, which can be learned and known (Donsu, 2017). There are three important things related to human behavior, namely cognitive, affective, and conative. Behavioral elements consist of visible knowledge (cognitive) and attitudes (affective), behavior (psychomotor), and real action (action).

Good behavior can be a preventive measure against the spread of the Covid-19. According to the Ministry of Health, 75% of the transmission of the Covid-19 is through splashing saliva or droplets on the surface of objects (Kementerian Kesehatan Republik Indonesia, 2020). According to the Indonesian Ministry of Health, the efforts made to prevent the Covid-19 outbreak are by implementing early prevention, which consists of washing hands regularly using soap or anti-septic then rinsing with water, wearing masks, physical distancing, or maintaining a distance of one meter according to the recommendations with WHO, applies sneezing and coughing etiquette, and conducts examinations at health services when they have the same complaints as Covid-19 symptoms (Kementerian Kesehatan Republik Indonesia, 2020).

The results of a preliminary study conducted in Rojopolo Village, Healthcare providers often give education to the citizen for wearing masks and maintain physical

distancing, but there are still many residents who still do not comply with these appeals. In Rojopolo Village, a Covid-19 handling post and screening of residents who had just arrived from outside the city were also established. According to data from the Jatiroto Health Center, there were 18 positive patients in the Jatiroto District indicating that there was a lack of knowledge about Covid-19 and Covid-19 prevention. This research aimed to analyze the relationship between the level of public knowledge on preventive measures against the Covid-19.

METHODS

This research is quantitative research by applying an analytical observational research design using a cross-sectional approach. This research was conducted in Krajan Kidul, Rojopolo Village, Jatiroto District, Lumajang Regency from March to April 2021. The population were the residence in Rojopolo Disrict, Lumajang, East Java Indonesia as much as 1031 people. A total of 289 respondents has been selected as sample determined by consecutive sampling. Inclusion criteria are: the residence at Rojopolo Village aged 18 years and above, agree to be respondent, and be able to read Bahasa; while the exclusion criteria is people with demensia. Researchers collected data using questionnaires which included the characteristics of respondents, knowledge, and prevention of Covid-19. This research questionnaire was adapted from *M Thagrir's questionnaire* about the level of knowledge and prevention of Covid-19. Data collection was carried out by distributing questionnaires to residents using Google Forms assisted by the head of the Village distributing the questionnaire through WhatsApp social media.

The validity test used a content validity test (Content Validity Index or CVI) by five lecturers from Faculty of Nursing, University of Jember. The results of the CVI test of the knowledge level questionnaire obtained a s-CVI value of 1 with the i-CVI details of all items was 0.9633 and the preventive behaviors obtained an s-CVI 1 value with the i-CVI at 9.666. While the reliability test on the questionnaire obtained Cronbach alpha values were 0.87 and 0.8 respectively.

This study used univariate analysis and bivariate analysis. Univariate analysis includes gender, age, education, and occupation. Bivariate analysis in this study used the Spearman rank test with $\alpha < 0.05$. This study uses data processing that begins with editing, coding, processing, or entry and cleaning by applying research ethics. This study has met the criteria for the research ethics test at the Health Research Ethics Commission, Faculty of Nursing, the University of Jember with Registration Number 45/UN25.1.14/KEPK/2021.

RESULTS

The results of this study were divided to the characteristic of respondents (table 1), the level of knowledge (table 2), the preventive behaviors (table 3), and the correlation between knowledge and preventive behaviors (table 4). Based on table 1, the most of respondents were female (60.9%), with the majority were adolescent (26-45 years old). For educational background, most of respondents were graduated from low and middle education level. In addition, for occupational status, the highest percentage were as housewife,

and the lowest percentage (8%) were as civil servants/Indonesian Army/Police.

Table 1 Demographic Characteristics of Respondents (n = 289)

Characteristics	n	%
Gender		
Male	133	39.1
Female	176	60.9
Age (yo)		
18-25	47	16.3
26-35	74	25.6
36-45	74	25.6
46-55	63	21.8
56-65	26	9.9
>65	5	1.7
Education levels		
No School	8	2.8
Elementary school	78	27.0
Junior High School	59	20.4
Senior High School	105	36.3
College	39	13.5
Occupational status		
Does not work	28	9.7
Housewife	89	30.8
Labor	40	13.8
General employees	45	15.6
Entrepreneur	64	22.1
Civil servants/Indonesian National Army/Indonesian Republic Police	23	8.0

Table 2 figure that the majority of knowledge level about Covid-19 among the respondents were at good level (79.6%). That is means most of citizen know about Covid-19 including the definition, the etiology, the sign and symptoms, and the prevention of Covid-19. As well as, the majority (84.8 %) of respondents also have good behaviors in preventing Covid-19 (Table 3).

Table 2. Level of Knowledge about Covid-19 (n = 289)

Knowledge	N	%
Good	230	79.6
Enough	53	18,3
Poor	6	2.1
Total	**289**	**100**

Table 3. Preventive Behaviors to Covid-19

Preventive Behaviors	N	%
Good	245	84,8
Poor	44	15,2
Total	289	100

Furthermore, based on table 4, the p-value were 0.001 (< α: 0.05), that is means Ha was failed to reject. Therefore, there was a correlation between knowledge level and preventive behaviors among population. The correlation value (r) was 0.568 (strong correlation). Hence, the higher the knowledge, the better the behavior to prevent the transmission of Covid-19.

Table 4. The Correlation between Knowledge Level and Preventive Behaviors

Variable	p	r
Knowledge		
Preventive behaviors	0.001	0.568

DISCUSSION

The results showed that most of the residents of Krajan Kidul Hamlet, Rojopolo Village, Jatiroto District, Lumajang Regency had a good level of knowledge about Covid-19 of 230 people (79.6%). Most of citizens know about Covid-19 including the definition, the etiology, the sign and symptoms, and the prevention of

Covid-19. According to Islam and Khan (2014) the results of the information obtained from the point of view of a particular object, when someone obtains information, then the information is observed to be managed and adjusted to its part so that it can be said with knowledge. Knowledge can also be influenced by factors, one of which is influenced by the level of education. In the results of this study, the majority of respondents had high school education with 105 respondents with a percentage (36.3%). Supported by research Wonok, Ribka and Tucunan (2020) stated that the education level of the respondents obtained, at high school, can affect good knowledge.

In a study conducted by Mujiburrahman, Riyadi and Ningsih (2020) it was stated that the majority of respondents aged early 45-55 years were 34 (32.7%), and the least respondents were in late teens 17-25 years of 13 (12.5%). In this study, 19 respondents were found to have good knowledge ranging in age from 36-65 years (42%). Marlita and Monalisa (2019) explains that if a person's age continues to grow, the effort to understand and think will expand. The researcher argues that the good knowledge possessed by the early elderly is due to obtaining previous knowledge sourced from experience and health workers. The results obtained in this study related to the work of the majority of housewives, namely 45 (43.3%) respondents and a small portion of 3 respondents (2.9%) working as traders. A person's knowledge and experience can be supported by work, because at work more often the brain functions so that the brain's ability, especially in remembering (memory) will increase when it is continuously used so that knowledge becomes good. Sumartini, Purnamawati and Sumiati (2020) states that most of the respondents who do not work have free time, therefore the opportunity to get information from several sources such as magazines, newspapers, television, radio, and the internet. In addition, residents who do not work often attend counseling events held by students.

The results of this study found that the majority of respondents in Krajan Kidul, Rojopolo Village, Jatiroto District, Lumajang Regency had a level of prevention against Covid-19 with good results. Supported by research from Mujiburrahman, Riyadi and Ningsih (2020) stated that the preventive behavior carried out by respondents was mostly in the fairly good category (43.2%) (Purnamasari and Raharyani, 2020).

Respondents who had a good level of prevention against Covid-19 based on gender in this study were more female respondents. The results of the distribution of respondent data showed that women were the most respondents with 176 people (60.9%) compared to men. Another study also stated that the female gender had good Covid-19 prevention behavior as much as 88.90% (Sari, et al 2020). According to Green's theory (2005), gender is a predisposing factor that can affect a person's health behavior. Females are more likely to behave better than males. This causes women to be more concerned about the environment and their health. According to Susilo *et al.* (2020) deaths in Covid-19 cases are also more dominated by men because men go out more often than women who isolate themselves at home.

The level of education in this study was dominated by the high school education level, namely 105

people (36.3%). This is also supported by research by Barbarasechi et al (2011) which states that there is a comparison between patients with higher education and this is not caused by emotional problems as well as in the physical domain, where clients with higher education have a better quality of life. The level of higher education can affect the level of prevention where a high level of education can affect a person's mindset so that it will greatly impact every aspect of his life.

Based on the results of the statistical test, it shows that there is a relationship between the level of knowledge on Covid-19 prevention measures in Krajan Kidul Hamlet, Rojopolo Village, Jatiroto District, Lumajang Regency by using the Spearman-rank statistical test, p-value < 0.001. This shows that there is a correlation between knowledge level and Covid-19 prevention measures. The correlation value is 0.586. means that there was a positive correlation between the knowledge level variable and Covid-19 prevention measures which shows that the higher the respondent's level of knowledge, the better the Covid-19 preventive action value. ($p<0.001$; $r = 0.586$).

Knowledge itself is something that is known which is obtained from the act of observing an object. Most of a person's knowledge comes from what is seen and heard. Meaningful knowledge is the process of taking action and behavior in solving problems (Notoatmodjo, 2012). According to Nurhidayat *et al.* (2020), prevention can be influenced by the level of education where a higher level of education can affect awareness of individuals to prevent, one of which is by preventing the transmission of Covid-19 infection. A person's higher education can cause a person to become more aware and understand the behavior to take prevention (Purnamasari and Raharyani, 2020). The level of knowledge or cognition possessed by a person can determine an action (Notoatmodjo, 2012). Research conducted by Saputra and Simbolon (2020) states that the level of knowledge has a positive correlation with the level of compliance in preventing Covid-19. Supported stated that the majority of knowledge and behavior related to preventing the transmission of Covid-19 (Idyawati *et al.*, 2020).

The results of other studies explain that knowledge is correlated with the incidence of Covid-19 infection (Li *et al.*, 2020). Action or practice is a person's response to a stimulus in the form of an action that can be seen and observed. A disease prevention action carried out by individuals can form behavior in the prevention of disease. The tendency of people to behave well can be supported by their knowledge about healthy behavior (Apriluana, Khairiyati and Setyaningrum, 2016). In addition, Individuals will carry out disease prevention by responding by behaving to prevent (health prevention behavior) (Notoatmodjo, 2012). Therefore, the best way to prevent and slow down transmission is to be well informed about the Covid-19, the disease it causes and how it spreads (Rochwerg, Siemieniuk and Jacobs, 2021).

However, in contrast to other studies, the results of the study showed that the level of education was high but the behavior towards preventing the transmission of Covid-19 was still lacking, but on the contrary, low education had a high level of prevention (Badan Pusat Statistik, 2020).

Researchers argue that knowledge can determine a person's behavior in everyday life. In this study, it was found that several people had a good level of knowledge about Covid-19 and in the implementation of Covid-19 prevention measures, they were also found to be good or following their understanding of Covid-19. This is possible due to the common understanding of the community regarding efforts to prevent Covid-19. People know that Covid-19 is a disease that has infected millions of people around the world, but people already have awareness and discipline in implementing Covid-19 prevention efforts, one of which is obeying health protocols. In research, the community can take preventive measures against Covid-19 such as self-quarantine, maintaining a minimum distance of 1 m, using masks, washing hands, and self-isolation.

CONCLUSION

Based on the results, it can be concluded that there was a correlation between the level of knowledge about Covid-19 and preventive behaviors. Hence, the higher the knowledge, the better the behavior to prevent the transmission of Covid-19. People with good knowledge will perform good behavior in preventing Covid-19 spreading. Therefore, public awareness to access the right information about Covid-19 is essential to enhance people in performing preventive behaviors during pandemic era. Further research were needed to identify the strategy in maintaining the behaviors in preventing the spreading of Covid-19.

REFERENCES

Apriluana, G., Khairiyati, L. and Setyaningrum, R. (2016) 'Hubungan antara usia, jenis kelamin, lama kerja, pengetahuan, sikap dan ketersediaan alat pelindung diri (APD) dengan perilaku penggunaan APD pada tenaga kesehatan' (*Correlation between Age, gender, length of work, Knowledge, Attitude, and the supply of (Personal Protective Equipments (PPE) toward The Behaviour in Using PPE among Health workers*). *Jurnal Publikasi Kesehatan Masyarakat Indonesia*, 3(3), pp. 82–87.

Badan Pusat Statistik. (2020). *Hasil survey demografi dampak covid-19 (The demographic survey of covid-19's impact)*. Jakarta: BPS RI.

Donsu, J. D. T. (2017). *Psikologi keperawatan: Aspek-aspek psikologi, konsep dasar psikologi, teori perilaku manusia* (Nursing psychology: Aspects of psychology, basic concepts of psychology, theory of human behavior). *Yogyakarta : Pustaka Baru Press*. Available at: https://opac.perpusnas.go.id/DetailOpac.aspx?id=1140160.

Idyawati, S. *et al.* (2020). Knowledge and attitude relationship with prevention corona virus disease (covid-19)', *Proceedings of the International Conference of Health Development. Covid-19 and the Role of Healthcare Workers in the Industrial Era (ICHD 2020)*. Available at: https://www.atlantis-press.com/proceedings/ichd-20/125946550.

Kementerian Kesehatan Republik Indonesia (2020) *Keputusan Menteri Kesehatan Republik Indonesia Nomor HK.01.07/MenKes/413/2020 Tentang Pedoman Pencegahan*

dan Pengendalian Corona Virus Disease 2019 (Covid-19) (Decree of the Minister of Health of the Republic of Indonesia Number HK.01.07/MenKes/413/2020 concerning Guidelines for the Prevention and Control of Corona Virus Disease 2019 (Covid-19)). Kemenkes RI.

Li, S. *et al.* (2020) 'The impact of covid-19 epidemic declaration on psychological consequences: A study on active weibo users. Int J Environ Res Public Health [revista en Internet] 2020 [acceso 13 de abril de 202021]; 30(3): 201-205', *International Journal of Environmental Research and Public Health*, 17(6). Available at: https://www.ncbi.nlm.nih.gov/pmc/articles/PMC7143846/pdf/ijerph-17-02032.pdf.

Marlita, L. and Monalisa (2019) 'Hubungan pengetahuan pada siswa/i kelas V tentang oral higiene dan pola diet terhadap karies gigi'(*The relationship of knowledge of students at class V students about oral hygiene and diet to dental caries*). *Jurnal Ilmiah Fisioterapi (JIF)*, 2(2), pp. 50–56.

Mujiburrahman, Riyadi, M. E. and Ningsih, M. U. (2020). 'Pengetahuan berhubungan dengan peningkatan perilaku pencegahan covid-19 di masyarakat', (Knowledge related to improvement of covid-19 prevention behavior in society). *JURNAL KEPERAWATAN TERPADU*, 2(2), pp. 130–140.

Notoatmodjo, S. (2012). Promosi kesehatan & perilaku. *(Health and behavior promotion*), *Jakarta: Rineka Cipta*.

Nurhidayat, L. *et al.* (2020). Pengaruh tingkat pengetahuan dan perilaku higiene santri terhadap. pencegahan dan penularan covid-19 selama masa new normal di pondok pesantren kota malang. (*The influence of santri's knowledge level and hygiene behavior on the prevention and transmission of covid-19 during the new normal period at islamic boarding schools in malang city*). *Jurnal Kedokteran Komunitas*, pp. 1–6.

Purnamasari, I. and Raharyani, A. E. (2020). Tingkat pengetahuan dan perilaku masyarakat kabupaten wonosobo tentang covid -19. (*The level of knowledge and behavior of the wonosobo regency community about covid -19)*, *Jurnal Ilmiah Kesehatan*, 3(1), pp. 33–42. Available at: https://ojs.unsiq.ac.id/index.php/jik/article/view/1311.

Rochwerg, B., Siemieniuk, R. and Jacobs, M. (2021) 'Therapeutics and COVID-19 LIVING GUIDELINE 24 SEPTEMBER 2021', (September). Available at: https://apps.who.int/iris/handle/10665/345356.

Saputra, A. W. and Simbolon, I. (2020) 'Hubungan tingkat pengetahuan tentang covid-19 terhadap kepatuhan program lockdown untuk mengurangi penyebaran covid-19 di kalangan mahasiswa berasrama Universitas Advent Indonesia' *(The Relationship between knowledge levels about covid-19 and students' compliance with the lockdown program to reduce the spread of covid-19 among students lived in dormitory at Universitas Advent Indonesia*). *Nutrix Jurnal*, 4(No. 2), pp. 1–7.

Sumartini, N. P., Purnamawati, D. and Sumiati, N. K. (2020) 'Pengetahuan pasien yang

menggunakan terapi komplementer obat tradisional tentang perawatan hipertensi di Puskesmas Pejeruk tahun 2019' (*Knowledge of patients using traditional medicine complementary therapy about hypertension treatment at pejeruk Health Center in 2019*). *Bima Nursing Journal*, 1(1), p. 103. doi: 10.32807/bnj.v1i2.516.

Susilo, A. *et al.* (2020) 'Coronavirus disease 2019: Tinjauan literatur terkini', (*Coronavirus disease 2019: Updated literature review).* *Jurnal Penyakit Dalam Indonesia*, 7(1), p. 45. doi: 10.7454/jpdi.v7i1.415.

Wonok, M. J., Ribka, W. and Tucunan, A. A. (2020) 'Gambaran perilaku masyarakat tentang pencegahan covid-19 di Desa Tumani Kecamatan Maesaan Kabupaten Minahasa Selatan' (An overview of community behavior about covid-19 prevention in Tumani Village, Maesaan District, South Minahasa Regency). *Kesmas*, 9(7), pp. 147–156.