



## One Year Pandemic: Community Knowledge and Self-Efficacy in Prevention Behavior of Covid-19 Based on The Health Promotion Model by Nola J. Pender

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ARTICLE INFO	ABSTRACT
<p><i>Article history:</i></p> <p>Received 01 June 2021 Accepted 07 July 2021 Published 15 September 2021</p> <hr/> <p><i>Keyword:</i></p> <p>COVID-19 Behaviour Knowledge Nola J. Pender Self-efficacy</p>	<p>The community has a new adaptation after one year of the COVID-19 pandemic. The concept of Nola J. Pender describes that the behaviour in line with the knowledge and self-efficacy that an individual possesses. This study aims to analyze the relationship between knowledge, self-efficacy, and behaviour of the community about preventive of COVID-19 after one year of the pandemic. This research is a quantitative study with a cross-sectional method design. Respondents consist of 246 people. Data analysis used chi-square and spearman tests which were adjusted to the type of variables being analyzed. The results showed that there was good knowledge, positive self-efficacy, and good behaviour in the community in preventing COVID-19 after one year of the pandemic. There is a relationship between self-efficacy and community behaviour in preventing COVID-19, but there is no relationship between knowledge and community behaviour. Other factors also influence the growth of positive community behaviour. Collaboration and commitment from the community and stakeholders are the main factors in harmonizing knowledge and behaviour in preventing COVID-19.</p>

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## Satu Tahun Pandemi: Pengetahuan dan Efikasi Diri Masyarakat dalam Perilaku Pencegahan Covid-19 Berdasarkan Model Promosi Kesehatan Nola J. Pender

*Kata kunci:*

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### ABSTRAK

Masyarakat memiliki adaptasi baru setelah satu tahun pandemi COVID-19. Model Nola J. Pender mendeskripsikan bahwa perubahan perilaku terjadi seiring dengan adanya pengetahuan dan efikasi diri yang dimiliki individu. Penelitian ini bertujuan untuk menganalisis hubungan pengetahuan, efikasi diri, dan perilaku masyarakat dalam pencegahan COVID-19 setelah satu tahun pandemi. Penelitian ini merupakan studi kuantitatif dengan rancangan metode cross-sectional. Responden yang terlibat dalam penelitian berjumlah 246 orang. Analisis data menggunakan uji chi-square dan spearman yang disesuaikan dengan jenis variabel yang dianalisis. Hasil penelitian menunjukkan sebagian besar responden memiliki pengetahuan tinggi, efikasi diri positif, dan perilaku baik masyarakat dalam pencegahan COVID-19 setelah satu tahun pandemi. Ada hubungan antara efikasi diri dengan perilaku masyarakat dalam pencegahan COVID-19, namun tidak ada hubungan antara pengetahuan dengan perilaku masyarakat. Adanya faktor lain yang juga mempengaruhi tumbuhnya perilaku positif masyarakat. Kerja sama dan komitmen masyarakat, serta pemegang kebijakan menjadi faktor utama untuk menselaraskan pengetahuan dan perilaku dalam pencegahan COVID-19.

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## INTRODUCTION

The coronavirus disease 2019 (COVID-19) pandemic has caused major changes in human life. Unprecedented conditions caused society to begin to adapt. Several sectors have been affected by the spread of the COVID-19 virus, such as disruptions of global travel, the economy, education, and daily activities (He, Deng and Li, 2020). This was also felt by the people of Indonesia, which is the 4th largest country with the largest population. This large population makes Indonesia being the five countries which report positive confirmed cases of COVID-19 with a total of 1.3 million people (Worldometers.info/coronavirus, 2021).

Banten Province is geographically close to DKI Jakarta which is the highest center of COVID-19 transmission. Based on the report of the Task Force for COVID-19 Handling, it showed that the number of positive confirmed cases in Banten City reached 2.3% of the national confirmed number (COVID-19 Task Force, 2021). The report of the COVID-19 Task Force in Banten Province showed that the highest age group confirmed positive is the age of 31-45 years (COVID-19 Task Force, 2021). The high level of mobilization carried out by this age group poses a risk of transmission to vulnerable groups, such as the elderly and co-morbidities. Basically, access to information about COVID-19 is not too difficult to obtain, especially on these demographic characteristics. Many studies have explained that demographic variables affect people's compliance in COVID-19 prevention behavior (Kim and Kim, 2020). One of it was the study of Goruntla et al. (2020) which showed the results of a significant correlation between age, occupation, and education with knowledge and perceptions about COVID-19.

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This was in line with the Health Promotion Model (Nola J. Pender) which describe that cognitive aspects and self-confidence can increase the tendency for maintaining a commitment to behavior (Pender, Murdaugh and Parsons, 2015; Alligood, 2014). The three factors described in the health promotion model include individual experience, cognition, and behavior directly shown by the community (Shin et al., 2005). One year the COVID-19 pandemic was still happening and there has not been a decrease in active cases. This condition allows for a correlation between experience, commitment to defense, and the level of community knowledge on COVID-19 prevention behavior. Health

Promotion Model by Pender also described that these three factors are interrelated and influence each other, either directly or indirectly (Wu and Pender, 2002). Therefore, this uncertain pandemic condition requires the acceptance of self-efficacy in the process of increasing preventive behavior.

Self-efficacy was an individual's perception of his ability to carry out behavior (Glanz, Rimer and Viswanath, 2002). The support of other factors is needed to create self-efficacy, one of which is commitment. Based on the Promotion Model by Nola J. Pender explained that commitment to an action plan has a lower tendency to become the expected behavior if only a little control, attention and support was obtained (Pender, Murdaugh and Parsons, 2015). The research by Yıldırım and Güler (2020) showed a significant correlation between self-efficacy and COVID-19 prevention behavior. One of the applicable behaviors based on positive self-efficacy was shown when people face the H1N1 pandemic by increasing the use of masks in public places, because they have a better acceptance of self-confidence (Lau et al., 2010).

In this study, an assessment of the factors that correlate community behavior level, namely knowledge and self-efficacy. Support for public understanding and belief regarding the science of COVID-19 was urgently needed right now (Clements, 2020). Based on this research, there are not many studies that explain the condition of people's knowledge and self-efficacy towards COVID-19 prevention behavior based on the Health Promotion Model by Nola J. Pender. This Health Promotion Model aimed to explain the factors that underlie motivation to engage in health-promoting behaviors and focused on the interaction of people with their physical and interpersonal environment during efforts to improve health (Laranjo, 2016). In addition, the application of the Health Promotion Model can contribute by providing a facility for understanding how a person can be motivated to achieve personal health (Sakraida, 2014). The COVID-19 pandemic has occurred for more than a year, but COVID-19 prevention behavior is still not as expected. Therefore, this study aimed to describe the knowledge, self-efficacy, and prevention behavior of COVID-19 by the community after one year of pandemic conditions in Indonesia. In addition, this study also aimed to analyze the correlation between knowledge and self-efficacy variables with COVID-19 prevention behavior based on the Health promotion model by Nola J. Pender. Based on this, this research is expected to describe the condition of the public's understanding and confidence in implementing COVID-19 prevention behavior after one year of the pandemic.

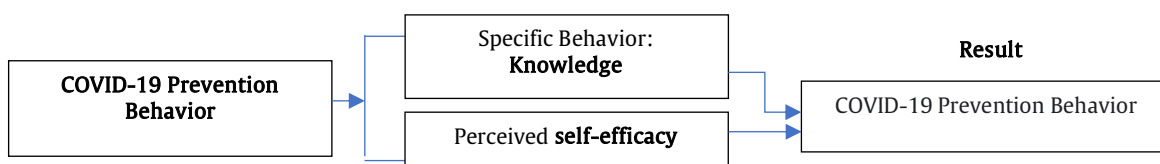


Figure 1. Conceptual Framework for COVID-19 Prevention Behavior based on the Health Promotion Model by Nola J. Pender (Wu and Pender, 2002; Shin et al., 2005)

## METHOD

### Design, Sample, dan Participant

This research was a quantitative study with a cross-sectional method design. The data collection process was carried out for 7 days in Tangerang City. Respondents involved in this study amounted to 246 people. The sample

calculation used the Slovin formula based on the number of populations and the marginal error value (d) is 5%. The inclusion criteria of respondents were people aged 18 years and domiciled in the Tangerang City area with reference to previous research (Hossain et al., 2020). The data collection technique used purposive sampling, which was in accordance with predetermined criteria. The data collection process was carried out by using a survey method assisted by cadres, as well as enumerators in distributing questionnaires (paper-based). Based on the interviews with cadres, it was shown that it was not possible to compose a questionnaire in the form of an online survey. Therefore, by maintaining good health protocols, the data collection process was carried out by distributing questionnaires according to the inclusion criteria.

### Research Ethics

The research conducted must be aware of the respondents' rights in accordance with ethical principles and considerations. Researchers apply four ethical principles in this study, namely by maintaining the principle of respect for dignity and respect, the principle of paying attention to welfare, the principle of justice, and the existence of consent after explanation (informed consent). This study has received ethical approval with the number 060/PE/KE/FKK-UMJ/II/2021.

### Research Instrument

The data collection was based on previous research instruments by referring to the concept of the Health Promotion Model by Nola J. Pender, namely the variables of knowledge, self-efficacy, and behavior (Taye et al., (2020); Clements (2020); and Hossain T., et al (2020) The reliability test value of the instrument is Cronbach's alpha = 0.65. The instrument consists of 4 parts, including:

The first part, demographic characteristics. In this variable, the research instrument consists of age, gender, last education, and occupation.

The second part, the variable of public knowledge about COVID-19. This section consists of eleven questions regarding the symptoms of COVID-19, the causes of COVID-19, and the mode of transmission of COVID-19. The statement in the knowledge variable used the Guttman scale and dichotomy with the categories true (score 1) and false (score 0). The total knowledge value ranges from 0-11 with an average value of 0 - 8.99 including in the low knowledge category and an average value of 9 - 11 in the high knowledge category.

The third part, community self-efficacy variables in preventing COVID-19. This section consists of 4 statements about people's confidence in preventing the transmission of COVID-19, the ability to deal with COVID-19, and belief in vaccination. The statement in this variable uses a Likert scale and a dichotomy with the category of strongly disagree (1); disagree (2); agree (3), and strongly agree (4). The total value of this self-efficacy variable ranges from 4-16 with a mean value of 4-13.9 in the negative self-efficacy category and an average value of 14-16 in the positive self-efficacy category.

The fourth part, community behavior variables in the prevention of COVID-19. This section consists of 13 statements regarding the behavior of using masks, washing hands, reducing mobilization, maintaining distance, avoiding crowds, and healthy living behaviors (physical activity, consumption of fruit/vegetables). The statement in this variable used a Likert scale and is dichotomy with the

category never (1); rarely (2); often (3); and always (4). The total value of behavioral variables ranges from 13 - 52 with an average value of 13 - 35.9 in the category of poor behavior and an average value of 36 - 52 in the category of good behavior.

### Data Analysis

This study aimed to determine the correlation between knowledge and self-efficacy variables with COVID-19 prevention behavior and use bivariate analysis. However, in explaining the demographic characteristics used univariate analysis. The data analysis process began with a normality test, then the inferential statistical process was carried out according to the nature of the data and variables. This study used Chi-square test (knowledge-behavior variable) and Spearman's (self-behavior efficacy) for determining the significance between the two variables. The use of the Chi square test was applied to determine the correlation between the two variables measured, namely the knowledge variable and community behavior in preventing COVID-19. Spearman's test was used to determine the correlation between self-efficacy variables and community behavior in preventing COVID-19. Before conducting this analysis test, the researcher ensured that both variables had data normality. The level of statistical significance was determined by p-value < 0.05 (two tailed) with a 95% CI significance level.

## RESULT AND DISCUSSION

### Respondents Characteristics

Based on table 1, the demographic characteristics consist of age, gender, last education, and occupation. Most of the respondents who took part in this study were aged 18-25 years, with the oldest respondent was 69 years old and the youngest respondent was 18 years old. The majority of respondents are female with a percentage of 55.3%. Most of the respondents have the last educational background of High School with a percentage of 71.1%. Most of the respondents involved in this study worked as private employees (35.4%). As many as 22.8% of respondents involved in this study were included in the category of not working because they acted as housewives or experienced termination of employment.

According to Pender (2011), a person's general characteristics influence behavior such as age, personality, race, ethnicity, and socioeconomic status. Since the COVID-19 case was first discovered in Indonesia, many studies have discussed community behavior in preventing COVID-19. The survey conducted in this study showed that most of the respondents involved are in the age group of 18-25 years and work as private employees. The same perspective with the research conducted by Yanti et al. (2020) showed that most of the respondents involved were in the 17-25 year age category, and work as private employees. In the research of Kushali et al. (2021) regarding public awareness about COVID-19 prevention, the majority of respondents were aged 18-23 years. This is because 90% of respondents at that age are aware of the importance of social distancing in controlling COVID-19 (Kushali et al., 2021). This condition can be interpreted that curiosity is higher in the age group of 18-25 years, so several studies have shown that this age group is more involved in various surveys about COVID-19.

**Table 1**  
**Demographic Characteristics of Respondents (n=246)**

Variable	Total	Persentase (%)
<b>Age (years)</b>		
18-25	147	59,8
26-35	46	18,7
36-45	30	12,2
46-59	21	8,5
≥ 60	2	0,8
<b>Sex</b>		
Male	110	44,7
Female	136	55,3
<b>Last Education</b>		
No School	1	4
Elementary School	13	5,3
Middle School	11	4,5
High School	175	71,1
University	46	15,1
<b>Occupation</b>		
Not working	56	22,8
Civil servant/Army/Police	2	0,8
Private employee	87	35,4
Trader	22	8,9
Retired	2	0,8
Student	32	13
Etc,	45	18,3

It is different from the results of other studies that most of the respondents have an undergraduate educational background (Yanti et al., 2020; Zhong et al., 2020; Sari et al., 2021). In this study, the respondents' characteristics mostly have a high school education background. Based on a BPS (Central Bureau of Statistics) survey on youth statistics that 49% of Indonesia's youth population was under 25 years old (Central Bureau of Statistics, 2018). Respondents' characteristics in the study of Adella Halim et al. (2020) about the understanding of COVID-19 by adolescents showed the same result that educational background was dominated by the student groups. The large percentage of respondents who are currently studying in this research has an effect on the majority of educational backgrounds.

The result of univariate analysis (Table 2) on the knowledge variable showed that most respondents (54.1%) have high knowledge values in COVID-19 prevention after one year of the pandemic. Most of these respondents already know the symptoms, modes of transmission, treatment and consequences of COVID-19. Though most of them have good knowledge scores, 45.9% of respondents still have low knowledge scores. The results of the survey conducted showed that most (63%) of the respondents did not

**Table 3**  
**Analysis of the Correlation between Knowledge and Self-Efficacy with Community Behavior in COVID-19 Prevention after One Year of a Pandemic**

Independent Variable		Behavior				Total		PR CI 95%	P value
		Good		Poor		N	%		
		n	%	n	%				
Knowledge	High	73	54,9	60	45,1	133	100	1,5394 (1,4169-1,6572)	0,371
	Low	55	48,7	58	51,3	113	100		
Self-Efficacy	Positive	69	55,2	56	44,8	125	100	1,50685 (1,3831-1,6266)	0,000
	Negative	59	48,8	62	51,2	121	100		

**The Correlation between Knowledge and Community Behavior in COVID-19 Prevention**

The results of the cross-tabulation (Table 3) showed that 54.9% had high knowledge with good behavior in preventing

understand the difference between the common cold and COVID-19. In the self-efficacy variable, the majority of respondents (50.8%) had positive self-efficacy values in preventing COVID-19 after one year of the pandemic. Most of the respondents have confidence in preventing and controlling the process of transmitting COVID-19 to themselves and their families. However, 49.2% of respondents have a negative self-efficacy value. Some respondents (54.9%) still doubt their abilities when dealing with their family or themselves being infected with COVID-19. In addition, the study results also showed that some respondents (56.5%) are still unsure about getting vaccinated against COVID-19. Community behavior in preventing COVID-19 after one year of the pandemic showed 52% of respondents have good behavior. Most people have implemented the 5M behavior well, but they still rarely doing exercise regularly (59.8%), rarely take supplements/vitamins (40.7%), rarely do physical activity (52%), and rarely follow healthy recommended diet advice (41%).

**Table 2.**  
**Knowledge, Self-Efficacy, and Community Behavior in COVID-19 Prevention after One Year of a Pandemic (N=246)**

Variable	Total	Persentase (%)
<b>Knowledge</b>		
High	133	54,1
Low	113	45,9
<b>Self-Efficacy</b>		
Positive	125	50,8
Negative	121	49,2
<b>Behavior</b>		
Good	128	52
Poor	118	48

The study result showed that most of the respondents have high knowledge with good behavior in preventing COVID-19. However, there are still respondents who rarely take precautions that require changes in daily living habits such as regular exercise and physical activity, healthy diet and consumption of supplements/vitamins. This finding was in line with the results of Sari et al., (2021) which showed that respondents experienced great difficulties in changing daily habits, such as maintaining social distance and increasing immunity as an effort to prevent the transmission of COVID-19. This condition is caused by the assumption that physical activity and eating healthy foods are not directly related to COVID-19 infection (Sari et al., 2021).

19 after one year of the pandemic ( $p=0.371 > 0.005$ ). The respondents with low knowledge have a risk of having bad behavior 1,5394 times compared to individuals who have high knowledge.

Health promotion was a behavior that is motivated by the desire of individuals to improve their well-being and optimize their health potential (Pender, Murdaugh and Parsons, 2015). This study result indicated that high knowledge causes good behavior, while low knowledge indicated poor behavior. Based on the concept of Pender, Murdaugh and Parsons (2015) explained that a person's value grows in a positive direction based on a balance between changes in behavior and knowledge. However, the results of the correlation test showed that there is no correlation between people's knowledge and behavior in preventing COVID-19. This can happen due to several factors, one of which is fatigue due to dealing with pandemic conditions for too long. Research results Morgul et al. (2021) showed a significant difference between the knowledge of the group who had a feeling of pandemic fatigue and the normal group. The study explained that the group with the fatigue pandemic had lower knowledge than the normal group (Morgul et al., 2021).

According to WHO, pandemic fatigue is a condition of fatigue due to uncertainty over the end of the pandemic. This condition causes people to start not complying with the COVID-19 prevention behavior. This is shown by the COVID-19 Task Force Survey (2021) which explains a decline in health protocol behavior. There were three factors that support behavior through health protocols and these are interrelated, including values, literacy, and motivation (WHO, 2020). The result which not correlated between knowledge and people's behavior can be interpreted as a lack of motivation due to being tired of facing a pandemic after one year. In addition, the success of handling local pandemic situations in certain areas does not last long and policies that change frequently result in the birth of new problems in the community in the form of a sense of 'safe' assurance to carry out all activities as long as they comply with health protocols (Mahaswa and Lingga, 2021). Various perceived barriers in dealing with various situations such as a pandemic can limit a person's commitment to action, behavioral mediators, and actual behavior (Pender, Murdaugh, & Parsons, 2002).

Continuous adaptation efforts over the past year in the face of a pandemic have resulted in the phenomenon of pandemic fatigue or fatigue from changes due to the pandemic. This results in a reaction to ongoing and unresolved adversity that can lead to complacency, isolation and hopelessness, appearing gradually over time and influenced by a number of emotions, experiences and perceptions (WHO, 2020). Some experts in the social and health fields have stated that the Indonesian people are experiencing pandemic fatigue as evidenced by the decreased behavior in complying with health protocols to prevent the spread of COVID-19 and other health-related behaviors. This condition was also found from the study result which showed that as many as 48% of respondents had poor preventive behavior.

### **The Correlation between Self-Efficacy and Community Behavior in COVID-19 Prevention**

Based on table 3, it showed 55.2% of respondents have positive self-efficacy values with good behavior in preventing COVID-19 after one year of the pandemic. A total of 44.8% of respondents with positive self-efficacy still have poor behavior in preventing COVID-19 after one year of the

pandemic. The bivariate analysis result showed that there was a correlation between self-efficacy and community behavior in preventing COVID-19 after one year of the pandemic ( $p = 0.000 < 0.005$ ). The respondents with negative self-efficacy have a risk of having bad behavior by 1,50685 times compared to individuals who have positive self-efficacy.

Self-efficacy is one aspect of knowledge about oneself that was influential in everyday life. Self-efficacy had a role in determining the actions that will be taken to achieve certain goals, including in some estimates of various events that will be faced (Kusrieni, 2014). As experts state that self-efficacy was an individual's attitude regarding self-assessment of actions that are good or bad, wrong or right, can or cannot do the work as determined (Bandura, 2017). This self-efficacy had a correlation with a person's belief in his ability to influence phenomena related to life (Halawa, 2020). If a person believes in himself or herself and was able to do something, then they can be said to have high self-efficacy.

Based on the test results of statistical analysis in table 3 showed a correlation between self-efficacy and community behavior. This proves that a person's self-confidence about behavior change was closely related. The more positive the self-efficacy, the better the behavior, and vice versa. Greater perceived self-efficacy results in fewer perceived barriers to certain health behaviors (Pender, Murdaugh, & Parsons, 2002). The self-confidence possessed by the respondents in this study included the belief in being able to prevent the transmission of COVID-19 to themselves and their families by implementing 5M behavior and vaccinating. The results of this study contradict the research conducted by Kusrieni (2014) which stated that there is a negative correlation between self-efficacy and cheating behavior. The results of these studies were different because the behavior change in this study was negative while in this study was positive. When compared with other research related to self-efficacy and behavior change, the results showed that self-efficacy only has a 9.1% role to change behavior and the remaining 90.9% was influenced by other variables (Anggai, 2015). The research result conducted by Baringbing and Purba (2020) also showed that the higher a person's self-efficacy, the higher the COVID-19 prevention behavior. However, in this study, self-efficacy only affects a small part (7%) of a person's preventive behavior against the spread of COVID-19 and the rest was influenced by other factors. This is also because situational influences in the external environment can increase or decrease commitment or participation in health promotion behaviors (Pender, Murdaugh, & Parsons, 2002). This change in behavior in the community was seen one year after the Indonesian government announced the first COVID-19 case in Indonesia.

In this study, it was found that if self-efficacy was positive, the behavior will also be good, because the intended behavior was positive behavior. This study also showed that negative self-efficacy has a tendency for having poor behavior. This was similar to the study of Baringbing and Purba (2020) which stated that self-efficacy significantly predicts COVID-19 transmission prevention behavior, but with a substantially relatively small effect. The result showed that the more positive the self-efficacy, the higher the behavior to prevent the transmission of COVID-19 and vice versa if the self-efficacy is negative, the behavior to prevent the transmission of COVID-19 will also be lower. Based on this study, the results are comparable if self-efficacy is negative, then the behavior to prevent transmission of COVID-19 will also be poor. If a person's self-confidence in

solving a problem is getting better, it will have something to do with positive changes in them as well.

#### LIMITATION OF THE STUDY

This study has limitations in the diversity of the respondents' characteristics. Based on the inclusion criteria set, namely people aged 18 years, thus allowing for the respondents' characteristics diversity from the last education and occupation categories.

#### CONCLUSION AND SUGGESTION

The COVID-19 pandemic is causing new adaptations to health behaviors. After one year of the pandemic, this study results show that most of the respondents involved have high knowledge and good behavior in preventing COVID-19. In addition, the self-efficacy of most respondents showed positive values. However, the results of this study explained that there was no correlation between knowledge and community behavior in preventing COVID-19 after one year of the pandemic. This can be caused by the fatigue felt by the community in the face of a pandemic (pandemic fatigue). The success of overcoming the pandemic requires cooperation from various cross-sectors. Increased knowledge does not guarantee the community for preventing the transmission of COVID-19. There are other factors that also influence the growth of positive community behavior. The cooperation and commitment of the community, as well as policymakers, are important factors in realizing the harmony of knowledge and the value of self-efficacy in improving COVID-19 prevention behavior.

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