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# Public Perception and Obedience with Social Distancing Policies during the COVID-19 Pandemic in Jakarta, Indonesia

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## Abstract

The Indonesian Government established a social distancing policy to prevent COVID-19 transmission. However, this implementation will be ineffective without the compliance of the people. This study aimed to analyze the relationship between public perception and obedience with social distancing in terms of the variables based on the Health Belief Model. This study used a cross-sectional design with a population of *Daerah Khusus Ibukota* (DKI) Jakarta's indigenes within the productive age of 15-64 years. The sample comprised 408 participants, with the independent variables of sociodemographics (age, gender, occupation, and education) and health beliefs (perceived susceptibility, severity, benefits, barriers, and self-efficacy). Meanwhile, obedience to social distancing was the dependent variable. Data were obtained through an online questionnaire and evaluated with the bivariate and multivariate analysis using Chi-square and logistic regression tests. Gender (OR = 2.327; 95% CI = 1.404-3.857) and perceived self-efficacy (OR = 2.609; 95% CI = 1.726-3.945) were significantly related to social distancing obedience. Meanwhile, no statistical correlation ( $p$ -value>0.05) was found with sociodemographics, perceived susceptibility, severity, benefits, and barriers. The males with low self-efficacy were more likely to disobey the social distancing policies. The individual's self-efficacy perception increased with their level of obedience to social distancing policies.

**Keywords:** COVID-19, health belief model, obedience, public perception, social distancing

## Introduction

During the pandemic, various countries, such as the United Kingdom (UK), the United States of America (USA), and the European Union, implemented preventive measures in the form of social distancing policies set globally by the World Health Organization (WHO).<sup>1</sup> These social restrictions were executed to minimize physical contact between communities with high and low transmission rates, individuals who are susceptible and non-susceptible, and to suppress the spread and transmission of coronavirus disease 2019 (COVID-19) in society.<sup>2</sup> The Australian Government Department of Health in 2020 stated that social distancing is essential because COVID-19 is spread through: (1) direct close contact with an infected person within 24 hours before symptoms occur; (2) close interaction with an infected and confirmed person, when they cough or sneeze, and; (3) touching body parts, such as the mouth and face after contact with objects or surfaces contaminated with coughs or sneezes from an infected individual.

Furthermore, a distance between two individuals minimizes the virus circulation through air droplets from coughs, sneezes, or talks.<sup>3</sup>

According to the COVID-19 Task Force website data, five of the 34 provinces in Indonesia had the highest number of cases. These provinces included DKI Jakarta, East Kalimantan, West, Central, and East Java with 25.4%, 4.1%, 17.0%, 11.0%, and 8.8% cases, respectively. Furthermore, DKI Jakarta Province, which was the epicenter of the COVID-19 spread, became the largest contributor to positive confirmed cases in Indonesia, with a total of 414,106 by May 9, 2021.<sup>4</sup> These high numbers of cases led the local government to take steps to establish various regulations and hence reduce the number of individuals who were confirmed to be positive. Since 2020, there have been more than fifteen regulations initiated by the DKI Jakarta Governor regarding social restrictions or distancing. According to the DKI Jakarta Governor's Regulation No. 3 of 2021, regarding the Regional Regulation implementation No. 2 of 2020

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concerning COVID-19 handling, activities conducted during social distancing in offices/workplaces, business places, industrial premises, hotels/other similar inns, and tourist attractions should be restricted. Also, education units, worship centers, transportation modes, food stalls, cafes, restaurants, street vendors, health care facilities, public areas, and other places with crowds should be regulated.<sup>5</sup>

Social distancing is a non-pharmaceutical intervention used to control respiratory tract infections by reducing social contact and increasing the distance between people.<sup>6</sup> Caitlin & Tom,<sup>7</sup> defined this phenomenon as a public health practice, which prevents people infected with a disease from interacting with healthy individuals to reduce the transmission risk. These practices include large-scale and individual actions, such as canceling large gatherings, closing public places, and avoiding crowds. During the pandemic, social distancing was used to slow the spread of the virus by reducing the probability of infection among the high-risk population.<sup>8</sup> Also, epidemiologists described this effort as a flattening curve, which refers to its potential success in preventing additional positive cases that burden the health care system.<sup>9</sup>

The COVID-19 study through the susceptible-exposed-infectious-quarantine-recovered (SEIQR) model in China showed that social distancing for 30 days significantly suppressed the number of cases in Wuhan and Hubei.<sup>10</sup> Another research in the UK suggested that implementing these policies by susceptible communities could reduce peak healthcare demand and deaths by 2/3 and a half.<sup>11</sup> Also, several modeling to observe the effectiveness of these preventive measures in South Korea and Japan indicated that the spread of the virus could be reduced.<sup>12</sup> Moreover, individual, organizational, and psychological factors influence obedience behavior. These individual factors include demographic characteristics, such as age, gender, education, years of service, and marital status. Meanwhile, the organizational aspects consist of human resources, leadership, and psychological factors, including attitudes, motivations, and perceptions.<sup>13</sup> According to the obedience theory developed by Kozier,<sup>14</sup> self-motivation, required style change level, health problems perception, knowledge, the impact of housing, culture, satisfaction level, and quality of health services received impact obedience behavior.

The Indonesian Government launched various initiatives, such as issuing regulations regarding the Large-Scale Social Restrictions (LSRR)/*Pembatasan Sosial Berskala Besar* (PSBB) implementation in DKI Jakarta Province, in response to the COVID-19 spread. This recommendation in the context of accelerating the COVID-19 handling was stated in the Health Minister of the Republic of Indonesia Regulation No. 9 of 2020.<sup>15</sup> In addition, LSRR involved closing schools and workplaces

(work from home and school from home), restrictions on religious events, and activities in public places (social/physical distancing).<sup>15</sup> Also, obedience in implementing social distancing policies pertains to the DKI Jakarta Governor Regulation No. 3 of 2021 on the COVID-19 handling, where indigenes were restricted from participating in outdoor activities. These aspects involve keeping a distance from people in public places and transportation, such as offices/workplaces, academic units (schools/campuses), worship centers, restaurants/cafes, markets/pedestrians, and other public places that can generate crowds (wedding reception venues). Furthermore, individuals who fail to comply with these regulations and violations will be subject to sanctions, such as a maximum administrative fine of IDR 250,000 or social work by cleaning public facilities.<sup>16</sup>

The Health Belief Model (HBM) theory was used to view individual behavior in deciding health actions influenced by their beliefs/perceptions. From this concept, preventive actions were influenced by two assessments; the threat from the disease in the form of perceived susceptibility and seriousness and considering the advantages and disadvantages of taking these actions. Furthermore, six elements, including self-efficacy, cues to action, perceived susceptibility, seriousness, benefits, and barriers, trigger these issues in the HBM theory.<sup>17</sup> In 2003, severe acute respiratory syndrome (SARS) was an international public health threat. The Health Belief Model (HBM) has been used extensively to determine factors associated with an individual's practice of the target SARS preventive behavior (mask-wearing). It is found that perceived benefits, barriers, and cues to action have significant implications in enhancing the effectiveness of SARS prevention programs.<sup>18</sup>

However, studies regarding social distancing and factors influencing it among people in DKI Jakarta Province are still inadequate. The previous studies did not focus on people's perception and obedience to social distancing. For these reasons, the authors aimed to analyze the relationship between public perception of social distancing practice and people's obedience to social distancing policies. Thus, the study findings are beneficial for monitoring and evaluating social distancing policies in controlling the COVID-19 transmission.

## Method

This study used a cross-sectional design to observe the level of social distancing obedience within DKI Jakarta Province in 2021. The independent variables included the people's sociodemographic characteristics (age, gender, education, occupation) and their perception of the HBM theory (susceptibility, severity, benefits, barriers, and self-efficacy). Meanwhile, obedience in complying with social distancing policies is the dependent

variable. This study included 400 participants aged 15-64 years and living in the DKI Jakarta Province area. Moreover, the respondent data was collected with an on-line questionnaire on the Google Forms platform and distributed using a purposive sampling method through social media, such as Line, WhatsApp, Twitter, and Instagram. The data was analyzed to assess the level of respondents' perception and behavior in a numerical score pattern.

All variables, such as age, gender, education, occupation, perception, and behavior, were categorized as binary. The age was grouped into 15-25 years (students) and more than 25 years (workers). These groups were divided based on the tendency to disobey social distancing policies. Respondents aged over 25 years (workers) tend to go to public places (go to the office) and use public transportation, while students still do activities from home. Gender was divided into male and female. Education was divided into low and high education based on respondents' latest education. Respondents with the latest education high school or below were categorized as low education, while respondents with the last education above high school were categorized as high education. The occupation was divided into non-students and students. This was based on the tendency to disobey social distancing policies, where students did not have to go to work (go out of the house) because all learning activities were currently done from home. In contrast, non-students had more tendency to mobilize/leave the house due to work demands.

The perception was divided into high and low based on a 'neutral' cut-off point. Respondents with a neutral-disagree answer were categorized into low perception, and respondents who answered agree-strongly agree were categorized into high perception. Social distancing behavior was divided into risky and non-risky behavior. Respondents who never go to public places/never use public transportation and always keep their distance when in public places/public transportation were categorized into non-risky behavior. The results were evaluated with bivariate (Chi-square) and multivariate (logistic regression) analysis. The Chi-square test was used to see the relationship between dependent and independent variables and the logistic regression test determined the independent variable with the most dominant effect on obedience with social distancing policies.

**Results**

Table 1 displays the results of the variables, where each question item was categorized into binary to produce a single variable. Subsequently, the perception factor was divided into low and high based on a neutral cut-off point. Meanwhile, the behavioral variables were divided into risky and non-risky. The non-risky referred to

respondents who never visit public places, use public transportation, and always maintain a safe distance from others. Table 1 shows that the behavior frequency distribution of most respondents was risky. Furthermore, most perceived severity and benefits were high, while the susceptibility, barriers, and self-efficacy were low

The Chi-square test used to determine the statistical relationship between sociodemographic characteristics. The HBM constructs independent variables (perceived susceptibility, severity, benefits, barriers, and self-efficacy) and the dependent factors in the form of social distancing behavior. Furthermore, the relationship between the independent and dependent variables is termed meaningful if the p-value is less than  $\alpha$ , in the statistical test using Chi-square with a significant degree of  $\alpha = 0.05$ . Table 2 shows that gender and self-efficacy variables had a significance of less than 0.05, where it indicates an association/relationship on the test criteria. Therefore, there is an association/relationship between gender and perceived self-efficacy with obedience in implementing social distancing.

The enter method was used in the logistic regression analysis, which included all the bivariate tested independent variables, such as age, gender, education, occupation, perceived susceptibility, severity, benefits, barriers, and self-efficacy. Subsequently, each variable was eliminated to produce a significant value of  $\alpha < 0.05$ . The results of the logistic regression analysis are as in Table 3.

According to Table 3, gender and perceived self-efficacy had a statistically significant relationship with social distancing obedience ( $p\text{-value} < \alpha = 0.05$ ). A p-value of 0.001 (OR = 2.327; 95% CI = 1.404-3.857) in males indicated a positive regression correlation; hence, males have 2.327 times more likely to engage in risky behavior when compared to females. Meanwhile, self-efficacy with a p-value < 0.001 (OR = 2.609; 95% CI = 1.726-3.945) showed a positive regression correlation; therefore, individuals with low self-efficacy have 2.607 times more likely to engage in risky behavior. Hence, gender and self-efficacy variables were observed to influence the level of social distancing obedience by using multivariate logistic regression analysis, with the effect explained in the table

**Table 1. Distribution of Perception and Behavioral Variables based on Cut-off Point Results (Low-High, Risky-Non Risky)**

Variable	Low/Risky		High/Non Risky	
	n	%	n	%
Susceptibility	228	55.9	180	44.1
Severity	104	25.5	304	74.5
Benefits	62	15.2	346	84.8
Barriers	381	93.4	27	6.6
Self-efficacy	242	59.3	166	40.7
Behavior	212	52	196	48

**Table 2. Relationship of Independent Variables with Social Distancing Obedience by the People of DKI Jakarta Province**

Variable	Category	Behavior						95% CI	p-value	OR
		Bad		Good		Total				
		n	%	n	%	n	%			
Age (years)	Worker age	50	23.6	37	18.9	87	21.3	0.822-2.139	0.246	1.326
	Student age	162	76.4	159	81.1	321	78.7			
Gender	Male	60	28.3	30	15.3	90	15.3	1.338- 3.567	0.002*	2.184
	Female	152	71.7	166	84.7	166	84.7			
Education	Low	95	44.8	102	52.0	197	48.3	0.507-1.105	0.114	0.748
	High	117	55.2	94	48.0	211	51.7			
Occupation	Non student	110	51.9	89	45.4	199	48.8	0.878- 1.914	0.191	1.297
	Student	102	48.1	107	54.6	209	51.2			
Perceived susceptibility	Low	123	58.0	105	53.6	228	55.9	0.810-1.772	0.366	1.198
	High	89	42.0	91	46.4	180	44.1			
Perceived severity	Low	58	27.4	46	23.5	104	25.5	0.785-1.921	0.368	1.228
	High	154	72.6	150	76.5	304	74.5			
Perceived benefit	Low	36	17.0	26	13.3	62	15.2	0.774-1.310	0.296	1.337
	High	176	83.0	170	86.7	346	84.8			
Perceived barriers	Low	202	95.3	179	91.3	381	93.4	0.856-4.298	0.108	1.918
	High	10	4.7	17	8.7	27	6.6			
Self-efficacy	Low	148	69.8	94	48.0	242	59.3	1.673-3.764	<0.001*	2.509
	High	64	30.2	102	52.0	166	40.7			

Notes: \*Chi-square Test Analysis p-value< $\alpha$  ( $\alpha = 0.05$ ), CI = Confidence Interval, OR = Odds Ratio

**Table 3. Multivariate Analysis Results of Sociodemographic and Perception Variables on Social Distancing Obedience by the People of DKI Jakarta Province**

Independent Variable	$\beta$	p-value	AOR	95% CI	
				Lower	Upper
Gender (Male)	0.844	0.001	2.327	1.404	3.857
Self-efficacy (Low)	0.959	<0.001	2.609	1.726	3.945
Constant	-1.978	<0.001	0.138		

Notes: \* p-value<0.05, CI = Confidence Interval, AOR = Adjusted Odds Ratio

and discussion above.

### Discussion

This study was conducted to determine the relationship between sociodemographic characteristics, public perception, and obedience regarding social distancing. Primary data were collected through online questionnaires, which have a higher risk of bias than the direct (offline) method. Furthermore, these online questionnaires contained some sentences that were a little ambiguous. However, this problem was solved by providing additional information in the question description column on the Google Forms to enable respondents to interpret and answer the questions easily. Study with this online system also required facilities, such as the internet or wifi. Therefore, respondents who have these amenities could only access this tool, often persons with higher incomes or better education. This limitation affected the uneven distribution of sociodemographic variables, such

as age, gender, education, and occupation. Also, the data of several respondents submitted twice were neither processed nor used.

The study results indicated that the proportion of public obedience to health behaviors was at an undesirable level. Gender was observed as one of the demographic factors related to health behavior so that women showed healthier behavior than men since they had greater motivation for health.<sup>19</sup> Generally, women placed a higher emphasis on actual health, while men were focused on preventing diseases.<sup>20</sup> The male gender variable indicated a regression coefficient of 0.844 and OR = 2.327, where a positive value signifies that men are 2.327 times more likely than females. Also, people with higher education and older age had healthier behavior. This result was similar to Afrianti and Rahmiati's study which stated that age and education had a significant relationship with the implementation of health protocols during the COVID-19 pandemic; an individual's ability to engage in protective behavior increases with their level of education and age.<sup>19</sup> The results of this study were also similar to Riyadi and Larasaty's study in 2020 which stated that gender and age were related to health protocols behavior.<sup>21</sup> Young female respondents had higher compliance in implementing health protocols. Other factors in this study that influenced respondents' reaction status were perceived effectiveness of self-isolation, education level, health status, marital status, level of concern about pandemic news, and concern for mobility outside the house.<sup>21</sup>



The HBM theory was used to explain and predict health behavior. In 1974, Kirscht and Becker further developed this concept to investigate individual responses to symptoms and diagnosed disease, particularly adherence to medical advice.<sup>17</sup> The HBM theory developed by Becker focuses on four factors that influence an individual's health behavior: perceived susceptibility, seriousness, benefits, and barriers.<sup>22</sup> The independent variables of the HBM construct, which included perceived susceptibility, severity, benefits, barriers, and self-efficacy, were used to observe the respondents' health behavior, especially concerning social distancing policies. The previous study showed that the HBM affects an individual's level of obedience in executing health behavior policy.<sup>2</sup> Self-efficacy had a significance of less than 0.05 on the HBM construct perception variable.

Consequently, a statistically significant relationship exists between self-efficacy and obedience behavior in implementing social distancing if the logistic regression results have a significance of less than 0.05. This study found that low self-efficacy was associated with risky behavior. Self-efficacy is defined as the level of trust and confidence in overcoming barriers to healthy behavior.<sup>18</sup> According to the health belief model, individuals should have an appropriate level of self-efficacy to overcome barriers to behavior. This result was similar to Shahnazi *et al.*,<sup>23</sup> in their study in Iran, which concluded that high perceived self-efficacy is an essential factor in increasing the individual's obedience to adopting preventive behaviors from COVID-19.

The social distancing behavior frequency over the past month was under the DKI Jakarta Governor Regulation No. 3 of 2021 requires the public to maintain a safe distance in public places and transportation, including offices/workplaces, academic units (schools/campuses), worship centers, restaurants/cafes, markets/street vendors, and other crowded environments (wedding reception venue).<sup>16</sup> According to the HBM theory, an individual's health behavior is determined by their beliefs or perceptions of the illness and its prevention to reduce the disease incidence. This construct's perceptions consist of perceived susceptibility, severity, benefits, barriers, and self-efficacy.<sup>22</sup> Furthermore, an individual's perception can be influenced by modifying factors, cues to action, and information media.<sup>24</sup>

The results showed that most of the 212 (52%) respondents had risky behavior above the cut-off point. Therefore, many people disobeyed social distancing policies by engaging in inconsistent behaviors with these laws. This social distancing behavior could be divided into obedience in public places and transportation. However, the majority of respondents (19%) still left the house for work and use public transportation, such as online/base motorcycle taxis (8%), with worship centers

(69%) and urban transportation/microbuses (87%) having the highest number of participants. The multivariate results illustrated that factors, such as gender (OR = 2.327; 95% CI = 1.404-3.857) and self-efficacy (OR = 2.609; 95% CI = 1.726-3.945) influenced social distancing behavior. This study showed that people in DKI Jakarta Province currently tend not to comply with the implementation of social distancing policies. This happened because they were still ignoring the government's recommendations or were saturated with complying with regulations due to the length of the COVID-19 pandemic. In order to make people obey, the government must be consistent in providing socialization and education related to the spread of COVID-19. The government must also be more vigorous in action against policy violators so that the community can comply with social distancing policies during the pandemic. The government and the community are expected to take the initiative and maintain their health by implementing health protocols and complying with policies that the government has implemented.

The limitation of this study was that there were a few ambiguous sentences in the questionnaire. However, the authors provided additional descriptions on the Google Form, so the respondents did not misperceive the questions. Using the online questionnaire could also limit groups' ability to respond to an online questionnaire without internet access. So, the questionnaire could only be accessed by respondents with internet access or all the facilities needed and might only represent respondents with higher income or better education. This limitation affected the unequal distribution of sociodemographic variables, including age, gender, education, and occupation. Further studies should be conducted to facilitate a comprehensive overview of people's perception and obedience in implementing social distancing policies so that the government can monitor and evaluate their policies.

## Conclusion

Based on the results of this study, a sociodemographic characteristic that affects people's obedience is gender. Gender had a significant relationship with obedience in implementing social distancing policy, where the males tend to have more risky behavior and disobey the social distancing policies. Logistic regression test showed self-efficacy had a statistically significant correlation with social distancing and had the highest odds ratio. Individual obedience to social distancing policies increased their level of perceived self-efficacy.

## Recommendation

The Indonesia Government should improve coordination between the central and local governments and other parties (people/regional leaders) in providing regu-

lated socialization and education. This recommendation aims to provide people with policy certainty to encourage public participation in social distancing and pay serious attention to improving public awareness or obedience social distancing policies, especially for males. The Government should consider the risky behavior and unsatisfactory obedience in social distancing policies by providing relevant information to influence public perceptions and encouraging people to engage in preventive behaviors. Enhancing discipline by sanctioning individual and institutional policy violators is also the issue to be raised. Furthermore, through information technology, the people should be more proactive in seeking information on COVID-19 and government policies, including the objectives and benefits of social distancing. Also, obedience to implementing these guidelines during the pandemic should be increased. Scientists and health professionals should (1) Develop and conduct further research on the relationship between independent variables and the social distancing behavior and; (2) Improve health promotion and provide the people with regular information on the benefits of social distancing.

#### Abbreviations

DKI: *Daerah Khusus Ibukota*; COVID-19: coronavirus disease 2019; WHO: World Health Organization; UK: the United Kingdom; USA: the United State of America; SEIQR: Susceptible-Exposed-Infectious-Quarantine-Recovered; LSSR: Large-Scale Social Restrictions; PSBB: *Pembatasan Sosial Berskala Besar*; HBM: Health Belief Model; SARS: Severe Acute Respiratory Syndrome; CI: Confidence Interval.

#### Ethics Approval and Consent to Participate

The Commission has approved this study for Research Ethics and Public Health Service, Faculty of Public Health, University of Indonesia Number: Ket-436/UN2.F10.D11/PPM.00.02/2021.

#### Competing Interest

The author declares that there is no significant competing financial, professional, or personal interest that might have affected the performance or presentation of the work described in this manuscript.

#### Availability of Data and Materials

The datasets used and or analyzed during the current study are available from the corresponding author on reasonable request.

#### Authors' Contribution

DS made the concept and design of the proposal and looked for the grant for this study. W and EBS were involved in the design study, performed data collection, analyzed data, compiled and revised the paper. BW, AK and RM analyzed data and involved in the discussion. All authors read and approved the final manuscript.

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