








# Determinants of Preventive Behavioral Measures in Polling Stations during General Election in Indonesia

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## Abstract

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**BACKGROUND:** Various preventive measures have been taken aimed to prevent the spread of COVID-19, which caused major changes in most aspects of human life. One of activities impacted by the presence of the disease is national or regional elections. To prevent the spread of the disease during the election, the Indonesian General Election Commission issued a regulation to control the COVID-19 transmission. However, there was lack of information regarding the implementation of the COVID-19 preventive behavioral measures in polling stations during the election.

**AIM:** The objective of this study is aimed to: (1) Describe and analyze determinants of the implementation of preventive behavioral measures implementation in polling stations during the local election and (2) examine differences of the COVID-19 daily cases before and after the local election in Indonesia.

**METHODS:** The design of this study is cross-sectional. The data were collected in the election day until the next 7 days, from December 9–15, 2020, in Depok and South Tangerang cities. All of 463 respondents participated in this study with online self-administered questionnaire. Chi-squared test with CI 95% has been used to determine the item which is related to support voters and personnel in implementing the health protocols.

**RESULTS:** The results of this study indicated the significant relationship between voter status and mask wearing ( $p = 0.017$ ), physical distancing ( $p = 0.011$ ), and hand washing ( $p = 0.036$ ). The COVID-19 daily cases before and after the local election tend to fluctuate but there was an increase from November to December 2020. There was a significant difference of the COVID-19 daily cases before and after local elections in cities in Indonesia.

**CONCLUSION:** The availability of facilities in polling stations and strengthening the policy will influence voters to do preventive behaviors such as mask wearing, physical distancing, and hand washing during the election. This study recommends the stakeholders to provide health protocol facilities at polling station and to create programs to increase the community compliance regarding the prevention of infectious diseases during the voting process.

## Introduction

After spreading in more than a hundred countries and causing more than four thousand people lost their lives, COVID-19 has been declared as a Public Health Emergency of International Concern on January 2020 and later as a global pandemic on March 2020 [1]. Unfortunately, more than a year after the announcement, the number of the cases was still increased in which on June 2021, the number of cases reached 173 million cases causing 3.7 million deaths worldwide [2]. The disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) has a direct transmission route through respiratory droplets or indirect contact, namely, airborne contagion or and contaminate objects [3]. Non-pharmaceutical interventions such as isolation for confirmed cases, quarantine of their contacts, physical distancing measurement, workplace and school closures, and

restrict mobility such as closed regional and national border are used for the purpose to reduce the transmission of COVID-19 [4].

Various preventive measures have been taken aimed to prevent the spread of COVID-19 which caused major changes in most aspects of human life. One of activities impacted by the presence of the disease is national or regional elections. The data showed that from February 21, 2020, to June 1, 2020, globally, national and subnational elections in 78 countries and territories have been postponed due to COVID-19 [5]. The election processes from candidate registration, campaign to voting are characterized by the involvement of numerous people with large crowds that causing minimum physical distancing. Therefore, since it is identified that the virus can be transmitted human to human when a person in a close contact (within 1 m), the election process might be a risk by accelerating the spread of the disease in a country. A study performed from Wisconsin, United States

showed that 10% increase in in-person voters per polling location is associated with an 18.4% increase in the COVID-19 positive test rate 2–3 weeks later [6].

Indonesia is one of the countries that postponed the regional head election. Previously, the voting process for 37 mayors and 224 regents in Indonesia which involves hundreds voters would be scheduled on September 2020, yet due to the pandemic, it was postponed to December 2020 [7]. To prevent the spread of the disease during the election, the Indonesian General Election Commission (*Komisi Pemilihan Umum or KPU*) issued a regulation Number 515 in 2020 which regulated that a poll station must provide various protective personal equipment aimed to control the COVID-19 transmission includes medical and non-medical mask, hand glove, face shield, hand sanitizer, hand washing facilities with soap, disinfectant liquid and sprayer, thermo gun, and plastic bag.

The study related to the implementation of preventive measures during the election in the time of pandemic remains less. A study in French, using modeling method, showed that the participation rate and mobilization in the election has decreased particularly in cities with higher population density [8]. A study in the United States showed that infrastructures needed for preventing the transmission of the COVID-19 such as masks, hand hygiene, and disinfection were available in polling locations and also mitigation practices based on the recommendation of the Center for Diseases Control and Prevention has been practiced during the election [9]. A previous study in Korea also showed a similar condition where voters should implement various preventive behavioral measures such as wearing masks, washing hands at the entrance of polling stations, and keeping a distance of more than 1 m during cast ballots in polling stations [10]. This study is aimed to (1) describe and analyze the determinants of the implementation of preventive behavioral measures implementation in polling stations during the local election and (2) examine differences of the COVID-19 daily cases before and after the local election in Depok City, Indonesia. It is expected to provide the insight related to the implementation of COVID-19 preventive behavioral measures in the polling station during the election. It is also expected to provide an evidence for stakeholders to be able to create programs to increase the community compliance regarding the prevention of infectious diseases during the voting process.

## Materials and Method

This study was conducted using cross sectional design in Depok and South Tangerang cities. The data were collected in the election day until the next 7 days, December 9–15, 2020. It was the first election was held

in the pandemic era. The population in this study are citizens in Depok and South Tangerang cities eligible as voters in the election regarding the voters list issued by the Regional Election Commission of each district area. All of 463 respondents participated in this study.

Questionnaire of this study consists of three parts. The first part consists of questions related to socio-demographic data of respondents including gender, education level and voter status. The second part consists of questions related to the COVID-19 prevention behavior including mask wearing, hand washing, and physical distancing when they are at polling stations. The third part consists of questions regarding enabling and reinforcing factors adopted from the PRECEDE-PROCEED model by Lawrence Green [11]. We did not assess the predisposing factor or knowledge of respondents because we focused on the preventive behavioral measures implementation of respondents in polling stations. Eleven questions related to enabling factors were asked about the availability of resources which facilitated the Covid-19 preventive behaviors' occurrence while 11 questions related to reinforcing factors including the questions were asked whether the voting committee persuades or reinforces voters to do the COVID-19 preventive behaviors or not. The preventive behaviors that were asked in this study were adopted from the General Election Commission's policy (PKPU) Number 6 of 2020. In general, the regulation contained some provisions such as facilities and standard operating procedure that should be exist in polling stations to enable and reinforce people to do the COVID-19 preventive behaviors.

This study uses online self-administered questionnaire. The data were collected online because at the time of data collection, community restriction policies were implemented. Besides, it is also aimed at preventing the transmission of COVID-19 and facilitating the rapid data collection. The online questionnaires were distributed to volunteers in several subdistricts in Depok and South Tangerang cities. Before filling out questionnaires, respondents have been explained in advance regarding the objectives and purpose of this study. Respondents who were willing to fill out questionnaires agreed on the inform consent. Anonymity and confidentiality had been ensured during the research process. Before the data collection, we have obtained an ethical approval from the Ethics Commission of FIKES UIN Syarif Hidayatullah Jakarta Number Un.01/F.10/KP.01.1/KE.SP/012.08.007/2020.

The data have been analyzed using the SPSS 24 version software. Descriptive statistics such as frequencies and percentages have been used for describing the study. Furthermore, Chi-squared test has been used to determine which item related to support voters and the personnel in implementing health protocols. Furthermore, Chi-squared test has been used to determine the item which related to support voters and the personnel in implementing health protocols. Furthermore, to view the significant difference of the

COVID-19 daily cases before and after the local election, the incidence data from November to December 2020 were analyzed. Due to the limitation of data resources, we only analyzed the COVID-19 confirmed incidence cases before and after local election in one city.

## Results

### Preventive behavioral measures implementation in polling stations during the local election

#### Socio-demographic characteristics

Table 1 showed that there is a significant relationship between voter status and mask wearing (p-value 0.017), physical distancing (p-value 0.011), and hand washing (p-value 0.036).

#### Factors influencing respondents' physical distancing

Table 2 showed that there is a relationship between the size of the polling station (p = 0.043), location of the polling station (p = 0.042), seats arrangement to maintain the distance (p = 0.001), distant voting booths (p = 0.001), and physical distancing. Moreover, a voting booth that was not arranged to keep a distance might have a 10.8 chance of resulting non-physical distancing than voting booth that was arranged to keep a distance. There is a significant relationship between officer's persuasive attitude (p = 0.001), officer's attitude to limit the number of people in polling stations (p = 0.029), officer's attitude to arrange the sitting distance (p = 0.001), officer's warning to the crowds (p = 0.007), and the physical distancing.

#### Factors influencing respondents' mask wearing

Table 3 showed the relationship between officer's attitude to allow voters who do not wear masks and the mask wearing behavior of voters (p = 0.001) with an OR 0.276 meaning that the polling station that does not allow voters to enter if they do not wear masks reduces the chance of being less compliant in mask wearing by 72.4%.

### Factors influencing the hand washing behavior

Table 4 showed that there is a relationship between an availability of hand washing facilities (p = 0.005), officer's attitude to ask voters to wash their hands (p = 0.009), availability of hand sanitizers (p = 0.001), and hand washing behavior. Polling stations that did not provide hand sanitizers for those who do not wash their hands have 7.85 times of the chance to have less compliant hand washing behavior of voters compared to polling stations that provide hand sanitizers for those who do not wash their hands.

COVID-19 confirmed incidence cases before and after local election Figure 1 showed that the COVID-19 daily cases before and after the local election in Depok City tend to fluctuate but there was an increase from November to December 2020. Table 5 showed that there is a significant difference of the COVID-19 daily cases before and after the local election in Depok City. The mean of the COVID-19 daily cases before the election was 179 cases and it increased to 271 cases after the election.

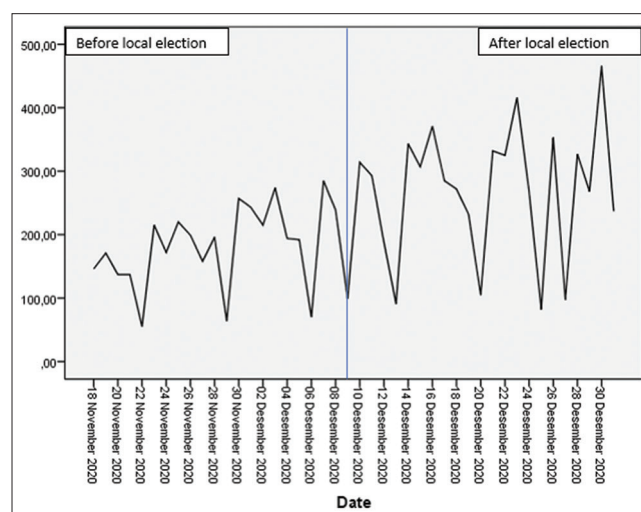


Figure 1: Confirmed cases before and after election period in Depok City

## Discussion

In the regional head election, Indonesian citizens were still enthusiastic welcoming this activity

Table 1: Differences of adherence to health protocols based on respondents' socio-demographic characteristics

Variables	Mask wearing				p-value	Physical distancing				p-value	Hand washing before and after voting				p-value
	No	Yes	No	Yes		No	Yes	No	Yes						
	n	%	N	%		n	%	n	%		n	%	n	%	
Sex															
Male	19	19.4	79	80.6	0.213	65	66.3	33	33.7	0.645	3	3.1	95	96.9	
Female	50	13.7	315	86.3		251	68.8	114	31.2		16	4.4	349	95.6	
Status															
Election officer	5	6	79	94	0.017	47	56	37	44	0.011	0	0	84	100	
Voter	64	16.9	315	83.1		269	71	110	29		19	5	360	95	
Education level															
Low	30	18	137	82	0.21	109	65.3	58	34.7	0.352	5	3	162	97	
High	39	13.2	257	86.8		207	69.9	89	30.1		14	4.7	282	95.3	

**Table 2: Factors influencing respondents' physical distancing**

Variables	Physical distancing				OR	p-value
	No		Yes			
	N	%	n	%		
<b>Enabling factor</b>						
Size of the polling station						
No	33	82.5	7	17.5	2.33	0.043
Yes	283	66.9	140	33.1		
Location of the polling station						
No	27	84.4	5	15.6	2.65	0.042
Yes	289	67.1	142	32.9		
Seats arrangement to maintain the distance						
No	60	93.8	4	6.3	8.38	0.001
Yes	256	64.2	143	35.8		
Distant voting booths						
No	41	95.3	2	4.7	10.8	0.001
Yes	275	65.5	145	34.5		
Separate entrance and exit doors						
No	28	77.8	8	22.2	1.69	0.275
Yes	288	67.4	139	32.6		
<b>Reinforcing factor</b>						
Officer asks voters to do the physical distancing						
No	40	90.9	4	9.1	5.16	0.001
Yes	276	65.9	143	34.1		
Officer limits the number of people in the polling station						
No	17	94.4	1	5.6	8.3	0.029
Yes	299	67.2	146	32.8		
Officer sets the sitting distance						
No	31	93.9	2	6.1	7.88	0.001
Yes	285	66.3	145	33.7		
Officer gives a warning when there is a crowd						
No	55	83.3	11	16.7	2.6	0.007
Yes	261	65.7	136	34.3		

even being held during the pandemic. In Indonesia, the election during pandemic was regulated by General Election Commission (KPU). The regulation showed that the size of the polling station should be set in order that voters and officers inside the station to do the physical distancing [12]. These regulations are in accordance with directives as set out in the WHO guidelines regarding elections during the COVID-19 pandemic, which stated that the committee must ensure that the location designated as a place to conduct election activities must be large enough to accommodate the expected number of people while maintaining the physical distance between two individuals [13]. A study by (Leidman *et al.*, 2020) in the United States also showed that in order to reduce the transmission of COVID-19 at polling locations in the implementation of elections in the US, physical modifications of voting locations were carried out, including the distance between voting booths must be 6 feet, layout polling locations so that voters can move in one direction. In Korea, polling stations are made separate between healthy voters and symptomatic voters. For healthy voters, it is done at regular polling stations with open locations and for symptomatic voters; it is done at isolated polling stations. Election activities are carried out while maintaining the physical distancing [10].

**Table 3: Factors influencing respondents' mask wearing**

Variables	Mask wearing				OR	p-value
	No		Yes			
	N	%	N	%		
<b>Enabling factor</b>						
Masks are provided in polling stations						
No	6	13.3	39	86.7	0.867	0.928
Yes	63	15.1	355	84.9		
<b>Reinforcing factor</b>						
Officer allows voters who do not wear masks to enter polling stations						
No	18	7.5	221	92.5	0.276	0.001
Yes	51	22.8	173	77.2		

The result of this study shows that provision of polling station facilities, such as location of Polling station is quite spacious, polling station outside the building, seating is arranged to keep a distance, and voting booth is arranged to keep a distance influenced the physical distancing practice of voters. In the WHO guidelines regarding the implementation of elections during the COVID-19 pandemic, it is necessary to minimize crowds. Then, to minimize crowds, as well as regulating the flow of people entering polling stations by arranging seats and arranging people standing [14]. With the arrangement of seating for the community at the polling station, it can make it easier for people to implement physical distancing because indirectly people will sit or be in places that have been arranged by the committee.

**Table 4: Factors influencing the hand washing behavior**

Variables	Hand washing behavior				OR	p-value
	Non-compliant		Compliant			
	N	%	N	%		
<b>Enabling factor</b>						
Hand washing facilities in the polling station						
No	4	1.6	252	98.4	0.203	0.005
Yes	15	7.2	192	92.8		
<b>Reinforcing factor</b>						
Officer asks voters to wash their hands						
No	17	6.3	251	93.7	6,536	0.009
Yes	2	1	193	99		
Officer gives hand sanitizer to voters						
No	13	11.9	96	88.1	7,854	0.001
Yes	6	1.7	348	98.3		

It is necessary to appoint staff as the crowd control and supervisors to oversee entrances to polling stations and to monitor the compliance with existing precautions, including physical distancing [14]. With the presence of mass controllers and supervisors at polling locations, it can make people more obedient in implementing distance from other communities so that election activities are expected to be carried out safely until the end and can break the chain of transmission of COVID-19.

**Table 5: Difference of COVID-19 confirmed incidence cases before and after local election**

	Mean ± SD	Mean difference	p-value
Before election	179.00 ± 66.00	-92.45	0.001
After election	271.45 ± 104.67		

The Center for Disease Control and Prevention (CDC) has recommended the physical distancing since late February 2020 with an emphasis on limiting the number of social gatherings and maintaining a 6-foot distance from other people [15]. The highly contagious nature of the virus, together with the large number of asymptomatic infected people and the absence of a vaccine, implying that the physical distancing is essential in dealing with the spread of the virus and avoiding the collapse of the health system. The physical distancing can be achieved with citizen cooperation and voluntary compliance [16].

Our study also showed that there is a relationship between the election officers adjusting the distance between voters and physical distancing of voters. The officers should remind all voters and all relevant parties who are present at TPS not to crowd

and continue to apply health protocols [17]. By giving warnings to people who come to the polling place, people will be more obedient in implementing physical distancing at the polling station.

Providing the adequate sanitation facilities at places that will be used as polling stations, in the form of hand washing facilities with running water and soap, disinfectants, and/or alcohol-based antiseptic liquid (hand sanitizer) was mandated on the Indonesian General Election' Regulation [13]. The WHO guideline also stated that the availability of hand washing facilities with soap or the availability of hand sanitizers with an alcohol content of 60–80% at all points in polling stations [14]. The research conducted by (Leidman *et al.*, 2020) also found that 93% of respondents reported that facilities for performing hand hygiene were available at polling stations [9].

The duties of election officers are to ensure that all voters wash their hands with running water and soap when entering and leaving the Polling Station (TPS) [13]. The officers at polling stations must always make sure voters wash their hands or clean their hands before and after voting. In addition to this method, notifications can also be made through visually displayed reminder messages so that people still apply health protocols, especially washing hands with soap [14].

Table 5 showed that there is a significant difference of the COVID-19 daily cases before and after the local election in Depok City. The mean of the COVID-19 daily cases before the election was 179 cases and it increased to 271 cases after the election. This result is similar to the study conducted by Lim *et al.*, (2021) that the election event could give impacts in increasing COVID-19 cases. The study from the Sabah state election in Malaysia as a natural experiment that indicated an estimated 70.0% of COVID-19 case counts within Sabah post-state election were attributable to the election's direct effect and 64.4% of COVID-19 cases in the rest of Malaysia post-state election were attributable to the election's spill-over effects [18]. These estimates highlighted the potential of mass gatherings in one region to spill-over into an outbreak of national scale. Relaxations of mass gathering restrictions must therefore be carefully considered, even in the context of low community transmission and enforcement of safe distancing guidelines.

## Conclusion

Adherence to mitigation measures is important not only to protect voters but also to protect poll workers which many of them were older adults, and thus at higher risk for severe COVID-19-associated illness. Such enhanced attention to minimize the congregation in polling locations, to correct the mask use, and to provide safe voting options for ill voters

are critical considerations to minimize the risk to other voters and poll workers. Evidences from these findings in the election support the feasibility and acceptability of implementing current policy guidance for election officials, poll workers, and voters for mitigating the COVID-19 transmission at polling locations. We found that by enabling the facility and strengthening the policy, voters will obey the rules that had been issued by the commission. This study recommends the stakeholders to provide health protocol facilities at polling stations and to create programs to increase the community compliance regarding the prevention of infectious diseases during the voting process. Further study could be conducted to raise the issue of implementing health protocols in other setting places especially the place with the potential of being crowded or cannot keep the distance to other people.

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