Article

A Cross-Sectional Survey of Personal Hygiene Positive Behavior Related to COVID-19 Prevention and Control among Indonesian Communities

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Abstract: People's behaviors can affect the spread of the COVID-19 virus. Public behaviors, including proper personal hygiene and healthy life practices, the use of appropriate masks, and the application of good disinfectants, have an important role in human health and protection towards prevention and control of COVID-19 spread. This study aims to perform a survey of public behavior and best practices related to COVID-19 prevention and control among Indonesian communities. A cross-sectional study was designed to collect information using an online survey. Respondents were gathered from 34 provinces in Indonesia through the Indonesia National Safety and Health Council network and Universities network. Respondents voluntarily submitted their response to a predesigned online questionnaire. The collected data was then analyzed using SPSS 24.0. A total of 771 respondent subjects (male 386; female 385) were recruited. The results show that 96% of participants implement positive behavior of personal hygiene, including wearing a mask when going outside their house, and almost 67.3% of respondents sprayed a disinfectant in their house. The majority of participants hold a door handle (37.2%) and desk (28.1%) at a frequency of more than six times a day. There were 8.2% of participants implementing good personal hygiene, including hand-washing at least once a day and maximum of more than six times after going to the toilet. At-risk behaviors were conducted by respondents in which they touched part of their face at a frequency of once during an hour. It was identified that males are less likely to perform better hand hygiene as opposed to females. In conclusion, the study showed that positive behavior of personal hygiene related to COVID-19 has been implemented among Indonesian communities. This result suggests that positive behavior based on community-based prevention and control needs to be continually maintained in order to prevent and control COVID-19 spread.

Keywords: COVID-19 prevention; COVID-19 control; Indonesian communities; personal hygiene; behaviors

1. Introduction

Nowadays, coronavirus disease 2019 (COVID-19) has become a major concern as a pandemic around the world. A novel coronavirus is also known, severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2). This virus was firstly identified as an outbreak in Wuhan, Hubei, China on 31 December 2019 [1,2]. On 30 January 2020, the World Health Organization (WHO) designated COVID-19 as a Public Health Emergency of International Concern (PHEIC) [3].

Based on several studies, the causative agent of emergence of COVID-19 was a bat reservoir that can infect human health [4]. In addition, COVID-19 transmits from human to humans in several ways, namely droplets and contact routes [5]. Furthermore, this virus is transmitted through direct contact of droplets from an infected person's airway that is exhaled through coughs and sneezes. People can also become infected by touching a surface which is contaminated by the virus, and they tend to touch their face and other parts of the body, including eyes, nose, and mouth. The COVID-19 virus can stay on hard surfaces for up to several hours to days, yet it can be killed with the use of disinfectants [6]. The WHO reported that SARS-CoV-2 can be transmitted in an airborne manner. Hence, the transmission of the virus has an important role in the rise of COVID-19 confirmed cases.

The spread of COVID-19 has emerged widely and rapidly [7]. Globally, the World Health Organization has recorded around 17,660,523 total confirmed cases of COVID-19 in 216 countries with fatality cases of 680,894 deaths reported as per 17 October 2020 [8].

Indonesia, for instance, is one of the countries affected by COVID-19. The government confirmed the first case of COVID-19 on 2 March 2020 [9]. The president of Indonesia issued a policy related to this disease under Presidential Decree No. 12 of 2020 about the determination of coronavirus disease 2019 (COVID-19) as national disaster. In addition, the president has formed the Task Force for Rapid Response to COVID-19, known as Gugus Tugas Percepatan Penanganan COVID-19 [10]. Recently, the total number of confirmed cases of COVID-19 in Indonesia are 361,867, where the total number of recovered and fatality on 34 provinces were 285,324 and 12,511 people, respectively. In addition, eight provinces are being considered at high, or very-high risk, and seven provinces at moderate risk. DKI Jakarta (26.1% cases), East Java (13.6%), and West Java (8.4%) are categorized as the three highest provinces due to COVID-19 cases [11]. According to the data, the trend of COVID-19 has continually increased. Hence, the COVID-19 pandemic situation has affected several sectors such as health, education, economic, services, and employment sectors [12].

In order to prevent the spread of the virus, the Indonesian government has implemented some regulations and policies, such as several public health and social measures as recommendations from WHO [8], including strengthening COVID-19 testing, isolation, treatment, and tracing. One of the regulations applied was Government Regulation No. 21 of 2020 concerning the Limitation of Large Social Interactions in order to accelerate the COVID-19 control and prevention (31 March 2020). This social distancing is expected to reduce or even break the spread of COVID-19. Everyone should maintain a safe distance from others of at least 2 m, avoid close and direct contact with other people, and avoid crowded situations in the public spaces. As a result, several policies have been released such as working and studying from home, health protocol policies including personal hygiene, workplace hygiene, and community hygiene, which have been implemented in various industries and educational institutions, even though there are some incompliances which have been identified, including some Indonesian people disobeying these policies. People are still attending crowded activities outside, and it is not uncommon to find them on vacation to several places and traveling to their hometowns [13].

People's behaviors can also influence the spread of the COVID-19 virus. According to the Health Belief Model (HBM), a person might be engaging in a health practice based on individual beliefs, for example preventive behaviors or positive behaviors in facing COVID-19, and vice versa. The HBM also highlights that dwellers will embrace the preventive health behavior when they are facing pandemic situation [14,15], positive behaviors including frequent handwashing, proper personal hygiene, and healthy lifestyles, wearing appropriate masks, and the application of disinfectants which could have an important role in human health and safety. Therefore, it is very important to integrate the behavioral aspects in the implementation of the policies [16]. Hence, it can be said that the behavioral aspects have significantly contributed to COVID-19 prevention and control during the pandemic, and several aspects, such as social and culture of dwellers, have influenced the level of behavior change [17].

Although COVID-19 continues to spread, the community must take action to prevent further transmission, reduce the impact of this outbreak, and support measures to control the disease [8]. A study in South Africa reported that behavioral responsiveness increased to respond to and prevent COVID-19 [18]. In addition, human behaviors were tremendously linked to the COVID-19 pandemic, where the control measure of close contact could reduce the infection risk of its virus up to 47% [19]. A study conducted by Muslih et al. [20] shows that study respondents had a good knowledge, positive attitude, and were conducting appropriate practices in preventing the spread of COVID-19. However, this previous study only assessed the practice of avoiding crowded places and masks used, and it did not measure other behavior such as touching surfaces, parts of bodies, the use of disinfectant, hand-washing, etc. Therefore, comprehensive positive healthy behavior has triggered researchers to further analyze the nature of Indonesian people with positive behaviors in dealing with the COVID-19 virus pandemic and how to address the situation. This present study was conducted in Indonesia because this country has the highest number of COVID-19 cases in Asia, and it was predicted that the third wave of COVID-19 will occur in December 2021. This study aims to conduct a cross-sectional survey of positive personal hygiene behavior related to COVID-19 prevention and control among Indonesian communities.

2. Materials and Methods

2.1. Study Design and Participants

The research was conducted based on study design of a cross-sectional survey. The respondents of this survey were from 32 provinces in 6 (six) mainlands in Indonesia which derived from Indonesia National Safety & Health Council network and Universities network. Data were collected using an online survey questionnaire. The survey was conducted from 31 April to 29 May 2020, a period in which most of the provinces in Indonesia, particularly in Java Island, were endorsed to stay home based on the government of provinces policy to conduct limited large-scale social restrictions (or PSBB (Pembatasan Sosial Berskala Besar). In order to ensure the validity and accuracy of the data collected, the instruments were validated and reliability was checked by conducted a preliminary survey. All subjects were informed about the survey objectives, the benefit of the survey for the community, and signed a written informed consent prior to voluntarily joining the study. Informed consent consisted of the information of the purpose of study, ethical approval, and terms of condition. The researchers applied the informed consent during the study with the principles of beneficial, no harm, confidential, justice, and voluntary participants. Hence, several pieces of information should be agreed to by participants prior to data collection. Particularly, those participants under 18 years old have to ask permission from their parent or legal guardian. If they do not meet the criteria, the system automatically stops the survey. The informed consent was described in detail during the Ethics Approval and Consent before the study was conducted and has been approved under the Ethics Approval Letter from Ethics Committee Faculty of Public Health, Universitas Indonesia Number: Ket-435/UN2.F10.D11/PPM.00.02/2020. Hence, all methods for this study were performed in accordance with the relevant guidelines and regulations of the ethical committee. No animal or human body handling was involved for this present study.

2.2. Questionnaire

A self-reported questionnaire of coronavirus prevention and control was administrated by researchers and distributed using Google Forms: <http://tiny.cc/z0d7lz> (accessed on 19 October 2021). The questionnaire consists of five parts: (1) demographic information (age, gender, occupation, provinces, and hometown in JABODETABEK, the vibrant area in Indonesia); (2) activities during COVID-19 pandemic (type of work, indoor and outdoor activities); (3) personal hygiene (the use of masks, disinfectant, hand sanitizer, behaviors in touching face and hand-washing); (4) the perception of COVID-19; (5) the source of COVID-19-related information and supporting aspects in facing COVID-19. As a guideline

for developing a survey tool, the study referred to the COVID-19 Prevention and Control protocol published by Ministry of Health of Indonesia. The link of the questionnaire, then, had been shared through Indonesia National Safety Council network, Universities network, and shared on social media sites such as online websites Facebook, Instagram, and WhatsApp.

2.3. Data and Statistical Analysis

SPSS 24.0 was utilized to compute and analyze the data. The descriptive and binary variables were performed as a percentage. Regarding the questionnaire of perception of COVID-19 which had been developed as Likert scales (strongly not suitable—strongly appropriate), the validity and reliability were tested. As an r statistics or correlated item-correlation $> r$ table (0.4438) (CI: 95%) and Cronbach's Alpha = 0.903, this means that the items of questionnaire had a good concurrent validity. In addition, chi-square test was performed to determine whether there is a significant relationship between categorical variables for characteristic of demographic and personal hygiene based on p value < 0.05 and odds ratio (OR) with 95% confidential interval (CI).

2.4. Ethical Consideration

The study was reviewed and approved by the ethics committee of the Research and Community Engagement of Faculty of Public Health, Universitas Indonesia under Ethics Approval Letter No: Ket-435/UN2.F10.D11/PPM.00.02/2020.

3. Results

3.1. Subjects Demographic Characteristics

A total of 784 subjects responded to this survey. After filtering and cleaning the data, 771 valid questionnaires were obtained, and 13 samples were excluded because of inappropriate responses. The participants originated from 32 of 34 provinces in 6 main islands of Indonesia; the majority were Java (69.6%), and non-Java (30.4%). The majority of respondents deriving from Java were based on Jakarta, 153 (19.8%); West Java, 152 (19.7%); East Java, 91 (11.8%); and Yogyakarta, 80 (10.4%), while the majority of non-Java Island participants were from Sumatera (14.1%). The mean age was >35 years (standard deviation: 1.94). In addition, the participants were relatively almost balanced between male and female, which was cited at 50.1% and 49.9% respectively. Most participants were employed (69.9%) and worked in private companies (24.4%). A total of 55.5% of participants lived in the center of Indonesia, which is JABODETABEK (Jakarta, Bogor, Depok, Tangerang, Bekasi). Table 1, below, depicts the characteristics of study respondents in detail:

Table 1. The demographic information of respondents ($n = 771$).

Characteristics	n (%)
Age (Mean (SD), years)	35–40 $\pm$ 1.94
>35	297 (38.5)
≤ 35	474 (61.5)
Gender	
Male	386 (50.1)
Female	385 (49.9)
Educational Background	
Lower Education	88 (11.4)
Higher Education	683 (88.6)
Occupation	
Unemployment	232 (30.1)
Employment	539 (69.9)

Table 1. *Cont.*

Characteristics	<i>n</i> (%)
Major Islands	
Java	537 (69.6)
Non-Java	234 (30.4)
Domicile in (JABODETABEK)	
Yes	428 (55.5)
No	343 (44.5)

3.2. Participants' Activities

As far as typical activities during the COVID-19 situation were concerned, 94% of participants did not take a trip to their home town. Mostly, 59.1% of participants have been working, where the kind of job activity was working from home (67%). In terms of feeling bored, 47% of respondents said they felt that situation. There were 28% of responses, however, that tended to feel somewhere in-between bored or not (Table 2). Moreover, respondents stated that working (30%), cooking (24%), studying (19%), and online lectures (13%) were the main indoor activities (Figure 1).

Table 2. Respondents' typical activities during COVID-19 pandemic (*n* = 771).

Characteristics	<i>n</i> (%)
Take a trip to home town	
Yes	49 (6)
No	722 (94)
Types of work	
Work from office	252 (32.7)
Work from home	519 (67.3)
Feeling bored	
Yes	365 (47)
No	195 (25)
Maybe	213 (28)

Figure 1. Indoor activities during the COVID-19 pandemic.

Figure 2 illustrates the outdoor activities that were still being conducted in the pandemic of coronavirus. The majority of activities were buying necessities in the market/mall (41%), 21% did sport activities, and 23% others, involving gardening, going to a bank, and visiting the doctor.

Figure 2. Activities outside during the COVID-19 pandemic.

Regarding the means of transportation used, 346 (46.9%) of participants drove their private car, while others used private motorcycle 358 (48.5%), online taxi (go car) 46 (6.2%), train 17 (2.3%), and bus 16 (2.5%).

3.3. Personal Hygiene Factors

It has been observed that positive behavior has been implemented as a good personal hygiene practice at individual level (Table 3). There were 96.8% of participants wearing a mask when travelling outside or to another place. However, participants stated that sometimes they do not wear a mask (3.2%). The majority of masks were cloth-based; it was cited at 73% (Figure 3). Furthermore, with the objectives of protecting their families from coronavirus, almost 67.3% of respondents employed disinfectant at their house, spraying 1–2 times in a month (Figure 4) and the antiseptic/sanitizer was brought during their activities (61%). In addition, 40% of respondents declared consuming supplements during the pandemic (Figure 5).

Table 3. Personal hygiene practices.

The use of mask	n(%)
Yes	746 (96.8)
No	25 (3.2)
The use of disinfectant at home	n (%)
Yes	519 (67.3)
No	252 (32.7)
The use of antiseptic/hand sanitizer	n (%)
Yes	470 (61)
No	301 (39)

Figure 3. Types of mask used.

Figure 4. Frequency of disinfectant spraying (per month).

Figure 5. The consumption of vitamins and supplements.

Figure 6 depicts the frequency and duration in holding an object's surface. The majority of participants hold a door handle and desk more than six times a day; 37.2% and 28.1%, respectively. Additionally, the durations of handling those objects were 3 s (71.6%) for the former object and >7 s for the latter object (37.9%). Regarding the use of handphones, 42% of respondents reported using their handphone more than 6 h in a day (Figure 7).

Figure 6. The trend of holding an object.

Figure 7. The use of handphone.

The frequent hand-washing behavior is shown in Figure 8. The results showed that 8.2% of participants performed hand-washing at least once in a day and a maximum of >6 times (35.5% of respondents) after going to toilet. In addition, 38.5% of participants practiced hand-washing for 3 times/day prior to eating, approximately about 23% practiced upon every return to home for 1–2 times a day, and it was also reported that 27% of participants practiced this personal hygiene implementation for >6 times for every object touched. Figure 9 depicts the percentage of touching face among study participants. The respondents touched their part of face at least once in an hour, it was cited at 39% (hair),

53.2% (forehead), 57.2% (neck), 54.6% (ears), 47% (eyes), 51.4% (mouth), 53.7% (chin), and 47.3% and 43.8% for cheek and nose, respectively.

Figure 8. Hand-washing behaviors.

Figure 9. The percentage of face-touching habits.

Regarding the source of information related to COVID-19 update, the government website of COVID19.go.id was the media most (64%) used by respondents, while the other platforms, such as WhatsApp, Instagram, Facebook, and Twitter were cited at 56%, 38%, 25%, and 15% each. An active figure or influencer that encourage participants to apply COVID-19 prevention was also observed; at least more than one response was obtained. A total of 43.4% stated their parents as being the main role model, 41.9% stated the government, and 32.3% stated the relatives.

3.4. The Perception of COVID-19

In this survey, 388 (50%) respondents thought that they understood the hazards and risks of COVID-19 derived from various resources, and 404 (52%) thought that they could classify the risky groups that need to be monitored regarding coronavirus disease (Table 4). Additionally, the participants applied the ethics of coughs and sneeze in avoiding the spread of droplet by covering with the hand or elbows, with 362 (47%) strongly agreeing. Similarly, it can be seen that 366 participants (48%) strongly agree to implement the distance of position or physical distancing in order to prevent the spread of COVID-19. On average, in the context of carrying a hand sanitizer, 354 (46%) respondents reported that they brought this item. Participants said that they immediately changed clothes and soaked them with detergents when returning home, with 339 (44%) strongly agreeing, and 260 (33%) agreeing. In contrast, 219 (28%) respondents disagree that they take a shower using warm water after returning home and only 238 (31%) respondents did not use special treatment on footwear 238 (31%). Furthermore, 247 (32%) respondents performed a special treatment on packages or items, using disinfectant acquired from online shopping or postman.

Table 4. The risk perception of COVID-19.

		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
		<i>n (%)</i>				
1.	I understand that hazards and risks of COVID-19 from various resources	8 (1)	17 (2)	62 (8)	388 (50)	296 (39)
2.	I understand the risk groups that need to be monitored regarding COVID-19 disease	8 (1)	14 (2)	60 (8)	404 (52)	285 (37)
3.	I apply the ethics of coughs and sneezes by covering with hands or elbows	50 (6)	39 (5)	28 (4)	292 (38)	362 (47)
4.	I really implement my distance position from other people / physical distancing	10 (1)	11 (1)	44 (6)	340 (44)	366 (48)
5.	I always carry a hand sanitizer with me wherever I go	34 (4)	63 (8)	82 (11)	238 (31)	354 (46)
6.	I changed immediately my clothes when I returned home	17 (2)	47 (6)	60 (8)	308 (40)	339 (44)
7.	I soak my clothes directly with detergent when coming back home from outside	58 (7)	97 (12)	151 (20)	260 (33)	205 (27)
8.	I always take a shower using warm water when returning home from outside	110 (14)	219 (28)	150 (20)	179 (23)	113 (15)
9.	I use special treatment on footwear at home	103 (13)	238 (31)	196 (25)	153 (20)	81 (1)
10.	I always spray packages/items using disinfectant received from the postman	41(5)	105 (14)	145 (19)	247 (32)	233 (30)

Table 5. Bivariate analysis of sociodemographic characteristics associated with mass exodus and type of work.

Table 6. Bivariate analysis of sociodemographic characteristic associated with positive behavior of personal hygiene.

[illegible]

Table 6. Cont.

	A		B		C		D		E	
	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value
Education										
Lower education	1.060 (0.311–3.618)	0.926	1.074 (0.672–1.717)	0.766	1.574 (1.008–2.458)	0.047	1.331 (0.840–2.108)	0.219	1.611 (1.015–2.559)	0.040
Higher education										
Occupational Status										
Unemployment	1.097 (0.466–2.578)	0.833	1.220 (0.882–1.687)	0.232	1.055 (0.777–1.458)	0.696	1.118 (0.818–1.528)	0.484	1.231 (0.958–1.680)	0.189
Employment										
Main Islands										
Java	0.768 (0.334–1.763)	0.538	0.933 (0.673–1.292)	0.675	0.822 (0.601–1.124)	0.221	1.099 (0.806–1.498)	0.552	1.071 (0.787–1.457)	0.663
Non-Java										
Domicile in JA-BODETABEK										
Yes	0.365 (0.156–0.857)	0.016	0.702 (0.519–0.949)	0.022	0.766 (0.573–1.025)	0.073	0.700 (0.524–0.935)	0.016	0.849 (0.638–1.130)	0.262
No										
	F		G		H		I			
	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value		
Age										
>35 Years	1.178 (0.869–1.595)	0.290	1.127 (0.843–1.507)	0.419	1.480 (1.090–2.011)	0.011	1.469 (1.097–1.967)	0.010		
<=35 Years										
Gender										
Male	1.098 (0.819–1.473)	0.531	1.749 (1.315–2.326)	0.000	1.436 (1.070–1.927)	0.016	1.864 (1.400–2.481)	0.000		
Female										
Education										
Lower education	0.998 (0.629–1.583)	0.992	1.155 (0.740–1.804)	0.525	0.917 (0.581–1.447)	0.711	1.282 (0.819–2.005)	0.276		
Higher education										
Occupational Status										
Unemployment	0.930 (0.676–1.279)	0.654	1.155 (0.849–1.573)	0.618	0.986 (0.717–1.356)	0.930	1.100 (0.808–1.496)	0.546		
Employment										
Main Islands										
Java	1.112 (0.809–1.528)	0.513	1.081 (0.795–1.470)	0.618	1.105 (0.805–1.517)	0.537	1.164 (0.856–1.583)	0.332		
Non-Java										
Domicile in JA-BODETABEK										
Yes	0.716 (0.532–0.965)	0.028	0.813 (0.612–1.081)	0.154	0.756 (0.562–1.016)	0.063	0.779 (0.586–1.306)	0.086		
No										

A. The use of masks; B. The use of disinfectant; C. The use of hand sanitizer; D. Handwashing after going toilet; E. Handwashing before eating; F. Handwashing after returning home; G. Handwashing every time touching face; H. Handwashing (others); I. Overall handwashing. $p < 0.05$ significant correlation.

Table 7 depicts the bivariate analysis of sociodemographics among study participants and touching object surfaces and face. Male participants were more likely to touch door handles and desks than women, with estimated OR of 2.01 (95% CI = 1.509–2.678, $p < 0.05$)

and OR of 1.49 (95% CI = 1.119–2.009, $p < 0.05$) each. Regarding face-touching behavior, males had the opportunity to touch ears 1.68 times (95% CI = 1.247–2.283, $p < 0.05$) and touch 1.38 times (95% C = 1.022–1.862, $p < 0.05$) more often as opposed to women. Further, study participants with low education tend to touch parts of the face more often than those with educational background of higher education, involving touching nose (OR = 2.14, 95% CI = 1.366–3.355, $p < 0.05$), cheek (OR = 1.65, 95% CI = 1.058–2.584, $p < 0.05$), chin (OR = 1.69, 95% CI = 1.084–2.661, $p < 0.05$), mouth (OR = 1.61, 95% CI = 1.026–2.527, $p < 0.05$), eyes (OR = 1.70, 95% CI = 1.092–2.669, $p < 0.05$), ears (OR = 1.86, 95% CI = 1.188–2.914, $p < 0.05$), forehead (OR = 2.16, 95% CI = 1.381–3.384, $p < 0.05$), hair (OR = 1.81, 95% CI = 1.152–2.848, $p < 0.05$), and all (OR = 2.19, 95% CI = 1.377–3.494, $p < 0.05$).

Table 7. Bivariate analysis of sociodemographic characteristics associated with touching objects and face.

	A		B		C		D		E	
	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value	OR (95% CI)	<i>p</i> Value
Age										
>35 Years	0.973 (0.728–1.301)	0.854	0.852 (0.631–1.150)	0.294	0.483 (0.359–0.648)	0.000	0.844 (0.627–1.136)	0.262	1.005 (0.744–1.357)	0.974
≤35 Years										
Gender										
Male	2.010 (1.509–2.678)	0.000	1.499 (1.119–2.009)	0.007	0.751 (0.676–1.206)	0.047	1.158 (0.868–1.545)	0.318	1.231 (0.918–1.650)	0.164
Female										
Education										
Lower education	0.903 (0.579–1.407)	0.651	0.653 (0.403–1.059)	0.078	1.574 (0.999–2.480)	0.048	2.141 (1.366–3.355)	0.001	1.653 (1.058–2.584)	0.028
Higher education										
Occupational Status										
Unemployment	1.070(0.786–1.456)	0.667	0.920 (0.669–1.265)	0.608	1.065 (0.782–1.449)	0.690	1.187 (0.869–1.622)	0.283	1.033 (0.752–1.421)	0.840
Employment										
Main Islands										
Java	1.227 (0.902–1.668)	0.193	0.877 (0.673–1.292)	0.414	0.895 (0.658–1.270)	0.048	0.818 (0.599–1.117)	0.207	0.686 (0.501–0.940)	0.019
Non-Java										
Domicile in JA-BODETABEK										
Yes	1.242 (0.943–1.651)	0.136	1.127 (0.519–0.949)	0.424	0.935 (0.700–1.249)	0.648	0.935 (0.700–1.249)	0.648	0.777 (0.579–1.043)	0.093
No										
F										
OR (95% CI)		<i>p</i> Value	G		H		I			
OR (95% CI)		<i>p</i> Value	OR (95% CI)		<i>p</i> Value		OR (95% CI)		<i>p</i> Value	
Age										
>35 Years	1.011 (0.756–1.352)	0.943	1.105 (0.631–1.150)	0.501	0.891 (0.658–1.206)	0.454	0.951 (0.704–1.302)	0.781		
≤35 Years										
Gender										
Male	1.292 (0.973–1.716)	0.076	1.238 (0.933–2.642)	0.139	1.165 (0.869–1.563)	0.307	1.688 (1.247–2.283)	0.001		
Female										

Table 7. Cont.

	F		G		H		I	
	OR (95% CI)	p Value	OR (95% CI)	p Value	OR (95% CI)	p Value	OR (95% CI)	p Value
Education								
Lower education	1.698 (1.084–2.661)	0.020	1.610 (1.026–2.527)	0.037	1.707 (1.092–2.669)	0.020	1.861 (1.188–2.914)	0.007
Higher education								
Occupational Status								
Unemployment	1.093 (0.803–1.487)	0.574	0.909 (0.668–1.238)	0.546	0.941 (0.683–1.298)	0.713	1.030 (0.744–1.426)	0.860
Employment								
Main Islands								
Java	0.769 (0.565–1.046)	0.095	0.760 (0.558–1.033)	0.080	0.789 (0.575–1.083)	0.143	0.715 (0.520–0.985)	0.041
Non-Java								
Domicile in JA-BODETABEK								
Yes	0.859 (0.646–1.143)	0.297	0.878 (0.661–1.167)	0.371	0.990 (0.737–1.330)	0.948	0.894 (0.662–1.207)	0.464
No								
	J		K		L		M	
	OR (95% CI)	p Value	OR (95% CI)	p Value	OR (95% CI)	p Value	OR (95% CI)	p Value
Age								
>35 Years	0.904 (0.657–1.244)	0.534	0.996 (0.733–1.354)	0.981	0.816 (0.610–1.092)	0.172	0.944 (0.706–1.262)	0.699
≤35 Years								
Gender								
Male	1.311 (0.961–1.789)	0.087	1.380 (1.022–1.862)	0.035	1.278 (0.963–1.696)	0.090	1.199 (0.904–1.591)	0.207
Female								
Student								
Lower education	1.420 (0.892–2.260)	0.145	2.162 (1.381–3.384)	0.001	1.811 (1.152–2.848)	0.009	2.193 (1.377–3.494)	0.001
Higher education								
Occupational Status								
Unemployment	0.898 (0.803–1.487)	0.534	1.050 (0.759–1.452)	0.770	1.090 (0.801–1.483)	0.585	1.084 (0.797–1.474)	0.609
Employment								
Main Islands								
Java	0.712 (0.512–0.990)	0.045	0.825 (0.598–1.138)	0.242	0.772 (0.567–1.050)	0.099	0.777 (0.571–1.057)	0.107
Non-Java								
Domicile in JA-BODETABEK								
Yes	0.848 (0.621–1.156)	0.297	1.065 (0.788–1.439)	0.682	0.978 (0.736–1.300)	0.877	0.866 (0.652–1.151)	0.322
No								

A. Holding a handle door B. Holding a desk C. The use of handphone D. Touching nose E. Touching cheek F. Touching chin G. Touching mouth H. Touching eyes I. Touching ears J. Touching neck k. Touching forehead L. Touching hair M. Touching face (all). $p < 0.05$ significant correlation.

4. Discussion

This cross-sectional survey on 771 respondents found that the majority of the Indonesian community have been practicing good personal hygiene behavior in their daily life

towards the prevention of COVID-19 transmissions. Several of the best personal hygiene factors that reduce the transmission of COVID-19 have been implemented, including the majority of the participants choosing not to travel to home towns during the long holiday. Indeed, the participants know that someone undergoing frequent traveling will increase the risk of coronavirus exposure [21]. This result is consistent with the findings from previous studies, that reduced mobility of people will reduce the transmission of COVID-19 [22,23]. It is indicated that the massive and aggressive health education performed by the government of Indonesia has been received well by the communities, especially the education and information shared daily by the Indonesian COVID-19 taskforce in collaboration with media pool press release. In line with the Health Belief Model, in order to avoid risks for diseases, people must believe in at least four aspects. First, they are liable to be influenced by diseases (perceived susceptibility), and those diseases have detrimental impacts on their life (perceived severity). Second, positive behavior or particular action will decrease the susceptibility of health problems (perceived benefit). Third, certain actions will effectively reduce the threat, where barriers can prevent the involvement in health behavior (perceived barrier). Fourth, self-efficacy affects the changes of outcomes (perceived self-efficacy) [14].

Working from home policy has been effectively implemented since March 2020 after the pandemic declaration by the Indonesian President. Activities in the workplace have also been affected since the employees have had to work from home. This research indicates that 67.3% of Indonesian people are performing their job remotely from home or working from home. The International Labor Organization estimates that approximately 7.9% (260 million workers) of the world's workforce worked from home. Although working from home can cause decrease of physical activity and increase to high-risk exposure to screens, which affects sleep deficiencies [24], this type of work is one of the means to further physical distancing and strategy for mitigation in unemployment and keeping the dwellers safe [25]. Moreover, the quarantines, involving staying at home, can effectively minimize the peak of the pandemic as well as contribute to decreasing the number of cases by 25% [26]. However, outdoor activities can be found in society, such as shopping for groceries in the market or mall. At the beginning, the government implemented a regulation of large social restriction, a part of enterprises and stores that provides a basic community's consumption. In managing COVID-19 prevention in this sector, the Ministry of Trade has set up a circular instruction No. 12 of 2020 regarding the recovery of trading activities carried out during the coronavirus disease 2019 pandemic and the new normal. When the communities want to fulfil household needs, even for those who cannot work from home, the way communities travel by using means of transportation is very important. Our findings identified that the majority of participants preferred to drive using their private car (46.9%) or motorcycle (48.5%). Yet, it also has identified those who took a public transportation such as online taxi, bus, and commuter line rail. Transportation is a concern in the transmission of COVID-19. In addition, public transportation has an important role in the spread of COVID-19, particularly the risk in accordance with the connectivity, distance, and destination [27]. In Indonesian context, the Minister of Transportation Regulation No. 18 of 2020 on Transportation Control to Prevent the spread of Coronavirus was issued on 9 April 2020. One of the rules is the use of private and public motor cycles, involving application-based motorcycle taxis. It was implemented with strict requirements due to PSBB by consideration of health protocols in preventing COVID-19 transmission [28].

It is strongly advised in the emergence of coronavirus to implement the health protocols and a strict self-protection. Personal protection equipment (PPE) is one of the hierarchy controls that can be applied to eradicate COVID-19 [29]. Furthermore, the previous study reported that coronavirus might spread through aerosols from respiratory droplets [30]. The common protection used for respiratory infections, such as novel coronavirus, are masks and respirators with different indications for healthcare employees, ill patients, and societies [31]. The masks are also worn to forbid pathogens entering respiratory tract by cutting the droplet's transmission path directly [32]. Our findings show that 96.8% of respondents wore masks during their activities. This mask-wearing rate was similar to

findings in a study conducted in Japan, with 99.4%, while in South Korea, it was cited at 85.5% [33]. As far as types of masks used, cloth masks were the most dominant masks worn by individuals (73%), while surgical masks and N95 were also identified at 22% and 3%, respectively. In fact, the effectiveness of cloth masks is still debatable, as there is few research conducted on it. Some research findings show that cloth masks caused a higher rate of infection as opposed to medical masks. Hence, it is not recommended for health workers [34]. In addition, cloth masks may raise the infection risk due to their physical properties such as reuse, frequency, effectiveness of washing, and moisture [35]. The study showed that cloth masks had a higher penetration of particles as opposed to medical masks; it was cited at 97% and 44%, respectively. Based on this study, the cloth mask has much higher potential to cause illness than medical masks [35]. On the other hand, cloth masks can reduce the virus particles into the air when people have conversations, sneeze, or cough. It also can minimize the spread of COVID-19 [36]. According to Adelantanti [37], cloth masks can be worn as a last alternative in protecting from the spread of COVID-19 on humans, particularly in a crisis situation. Hence, at the population level, the use of masks is very important to minimize the exposure to droplets, aerosols and particles, and spread of the infection to others [38].

Regarding the use of disinfectant in handling COVID-19, 67.7% of respondents carried out disinfectant spraying for at least once a month with chlorine-based products. Environmental surfaces are likely to be possibly contaminated with SARS-CoV-2, both in healthcare and nonhealthcare settings such as walls, chairs, electronic equipment, and tables. Hence, these surfaces must be disinfected in preventing and controlling the hazards and risks of transmission [39]. Furthermore, the transmission has been associated between individuals and contacts with surfaces in the environment [40]. In fact, as disinfectant has detrimental effects such as irritation and/or allergens [41], safety of operation should be considered, such as wearing PPE during the use of disinfectants in order to minimize the risk of infection on the human body [42]. It was found in the current study that the respondents performed treatment on packages or items, using disinfectant, received from the postman as infection prevention during the pandemic situation.

Another crucial strategy for communities in prevention of the risk of COVID-19 is the use of portable hand sanitizer. The majority of participants (61%) bought this item to protect from virus transmission. The hand sanitizer, or antiseptic hand sanitization, is known as antiseptic hand rubs which are alcohol-based. It is used as one of the protections in minimizing the transmission of infection among communities as well as health professionals [43]. In addition, this item usually is effective and helpful in situations where hand-washing facilities are not available in public places or at work.

Several studies have shown that COVID-19 exists and is persistent on various surfaces. Chin et al. [44] reported that the novel coronavirus can survive up to 1 day on wood and cloth, and 2 and 4 days on glass and stainless steel and plastic, respectively. Van Doremalen et al. [45] also pointed out that this virus remained for up to 4 h on copper and 24 h on cardboard. For this reason, societies have a potential risk for exposure to the virus. Our findings reveal that the majority of respondents hold a door handle and a desk for at least more than six times for three to seven seconds in a day. In fact, the use of mobile phones is massively frequent, averaging more than six hours in a day. When COVID-19 is present on different surfaces, it is possible to be infected by touching that surface, including door handles, mobile phones, and public transport handholds, and subsequently transmitting to the body through our hand, mouth, nose, or eyes [46].

The findings of our study found that males are less likely to perform better hand hygiene as opposed to females. In addition, participants with low education tend to touch parts of the face more often than those who had higher education. The previous study reported that girls tend to have frequent best practice in handwashing behavior, and those with educational background of higher education were reported to practice better behavior in personal hygiene [32]. Our study also found that 38.5% of subject respondents performed hand-washing for three times before eating. Almost 23.2% of respondents declared hand-

washing twice per day upon every return home. Moreover, 35.5% and 27% of respondents declared hand-washing for six times after going the toilet and every time they touched an object. The Polish study showed that it has been indicated that approximately 40% of respondents performed hand-washing after handshaking, while this basic hygiene behavior was also indicated in the subjects performing hand-washing after touching parts of their bodies such as nose (39%), sneezing (44%), and coughing (40%) [47].

This study is an early detection to obtain an overview of positive behaviors of personal hygiene for the prevention and control towards COVID-19 among dwellers in Indonesia. It contributes to delivering information and giving better understanding regarding how communities can support the government in handling the pandemic situation. These findings contribute to shareholders, particularly for the Task Force for Rapid Response to COVID-19, in providing a data regarding community behavior. Our study also indicates that in handling and mitigating the spread of COVID-19, the Indonesian governments should continually consider the potential of at-risk behavior among residents and strengthen the intervention and health promotion, vaccination, and close-contact control. This study, however, has several limitations. First, the sample size is limited. Second, online questionnaire may not reflect the real situation of the communities. Third, the study was conducted during the large-scale social restrictions, which may not reflect the real situation during the release of large-scale social restrictions where the public may have varied activities where they may no longer implement positive behavior of personal hygiene. Further studies are needed to explore whether the positive behavior may reduce or change after the release of large-scale social restrictions. Fourth, the majority of respondents came from Java Island, while the representativeness of the population might not be covered, and this might be a bias factor. Finally, the data was administrated in bivariate analysis to assess association, but it does not control for potential confounding variables, hence, multivariate analysis is needed for further analysis.

5. Conclusions

The COVID-19 pandemic has a huge impact on societies around the world, including Indonesia. Our study found that Indonesian communities performed positive personal hygiene behavior, especially practicing frequent hand-washing, wearing masks, using hand sanitizer if the hand-washing facilities are not available, using disinfectant, avoiding face-touching, avoiding crowds, and avoiding close contact with individuals. People aged over 35 years were less likely to practice hand-washing compared to respondents who are under or equal to the age of 35 years. Moreover, the male respondents were less likely to practice washing their hands after going to the toilet compared to women, and male participants tend to touch more door handles and desks than women. With respect to educational level, our study also found that people with low education are less likely to utilize antiseptics than people with higher education. Moreover, respondents with low education are less likely to perform hand-washing after going to the toilet compared to highly educated people.

To summarize, our findings demonstrate that behavioral practices have had an integral part in reducing the risk of COVID-19 escalation. Hence, the positive behavior of personal hygiene needs to be maintained during the pandemic in order to control the COVID-19 spread. There should be a good role model in this respect.

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Institutional Review Board Statement: The study was conducted according to the guidelines of the Declaration of Helsinki, and approved under the Ethics Approval Letter from Ethics Committee Faculty of Public Health, Universitas Indonesia Number: Ket- 435/UN2.F10.D11/PPM.00.02/2020.

Informed Consent Statement: Inform consent was obtained from respondents by agreeing to fulfil the terms and conditions to participate in the study. The researchers applied the informed consent during the study with the principles of beneficial, no harm, confidentiality, justice, and voluntary participation. Hence, several pieces of information should be agreed to by participants prior to data collection. Particularly, those participants under 18 years old, have to ask permission from their parent or legal guardian. If they do not meet the criteria, the system automatically stops the survey.

Data Availability Statement: The datasets utilized and/or analyzed during the present study are available on reasonable request from the corresponding author.

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