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Public knowledge and attitude towards medications and dietary supplements used during COVID-19 self-isolation: a cross sectional survey in Surabaya, Indonesia

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ABSTRACT: Coronavirus disease 2019 (COVID-19) has been declared a global pandemic for more than two years. People who are confirmed positive for COVID-19 or had close contact with COVID-19 patients are suggested to self-isolate to prevent the transmission. Some medications and supplements are recommended to be taken during self-isolation. The aim of the study was to investigate the public knowledge and attitude towards medications and dietary supplements used during COVID-19 self-isolation such as paracetamol, vitamin C, vitamin D, zinc, and antiretroviral favipiravir. A survey of 380 participants in Surabaya, Indonesia using a self-developed questionnaire carried out online using *Google form* was conducted. The results showed that most participants had good knowledge (80.3%) and a positive attitude (89.5%). Furthermore, the good public knowledge about medications and dietary supplements used in COVID-19 self-isolation was correlated with a positive attitude (p=0.029). Therefore, continuous education and information campaign about medications and dietary supplements used during COVID-19 self-isolation which involving related parties is still needed.

KEYWORDS: COVID-19; self-isolation; knowledge; attitude.

1. INTRODUCTION

Coronavirus disease 2019 (COVID-19) is a respiratory infection caused by a novel coronavirus first reported in China, in December 2019 [1]. The reported COVID-19 symptoms vary from mild common cold to serious illnesses like Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS) [2]. The World Health Organization (WHO) declared the emerging COVID-19 as a global pandemic on 11 March 2020 [3]. Until May 2022, approximately 526 million cases were reported [4]. In Indonesia, the first COVID-19 case was reported in March 2020. In the last three years, Indonesia faced a three-wave of diseases in February 2021, July 2021, and January 2022 [5].

People who confirmed positive for COVID-19 or suspected are suggested to self-isolate to prevent transmission. Self-isolation was recommended to end in 5 days if the fever absent for 24 hours without the use of fever-reducing medication or continue up to 10 days if the patients experience shortness of breath or had breathing difficulties [6]. WHO and the Indonesian government have established measures to combat the COVID-19 pandemic, including self-isolation treatment guidelines. WHO suggests taking paracetamol to reduce fever while the Indonesian Ministry of Health recommends various dietary supplements including vitamin C, vitamin D, herbal medication, etc. and medications such as paracetamol as over the counter (OTC) and prescriptions-only medication such as favipiravir for self-isolated patients depends on the symptoms severity and the comorbidities [7, 8]. However, it is advised to consult with physicians before taking the OTC. Easy access to information resources including the internet, and the lack of knowledge about medications and dietary supplements during COVID-19 promotes the panic buying phenomenon. A study by Fadliyah *et al.* revealed that during the COVID-19 pandemic in Indonesia, 74.4% of survey participants utilized traditional medicines and supplements more regularly, with internet purchases occurring 0–2 times per month [9]. Unrequired medications used during COVID-19 pandemic could lead to irrational drug use and potential adverse events.

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In Dhaka city, Bangladesh, a survey to 626 respondents who had taken medications for COVID-19 showed that only 132 (21.08%) were documented as positive by RT-PCR test for COVID-19 and the rate of self-medication of antimicrobial agents such as azithromycin and doxycycline were much higher than before the pandemic (40.25-54.15% compared to 21-25% respectively) [10, 11]. This phenomenon could contribute to the increase of antimicrobial resistance and unwanted potential adverse events. Hence, this study aimed to investigate the public's knowledge and attitude toward medications and dietary supplements used during COVID-19 self-isolation. The findings of this study is expected to provide helpful information for public health officials to take further interventions for public awareness about medications and dietary supplements used for COVID-19 self-isolation.

2. RESULTS

A total of 485 participants agreed to join the study. However, only 380 participants submitted the *Google form*. Of those who filled out the *Google form*, the majority of participants were female (71.8%) and aged ≤25 years (54.7%) and had secondary level background (62.9%). Nearly half of the participants were employed (46.1%) and earned 1 to 3 million Indonesian Rupiah (IDR) per month* (47.6%). The sociodemography characteristics of participants are presented in Table 1.

Table 1. Sociodemography characteristics of participants

Variables	n = 380	%
Gender		
Female	273	71.8
Male	107	28.2
Age (years)		
17-25	174	45.8
26-35	142	37.4
>35	64	16.8
Educational Status		
Secondary level	239	62.9
Tertiary level	141	37.1
Occupation		
Non-healthcare worker		
Not employed	106	27.9
Employed	175	46.1
Self-employed	52	13.7
Health workers	47	12.4
Income*		
<1.000.000	84	22.1
1.000-000-3.000.000	181	47.6
>3.000.000	115	30.3
Previous COVID-19 diagnosis		
Yes	121	31.8
No	259	68.2
Self-isolated before		
Yes	145	38.2
No	235	61.8

*(exchange rate 1 American Dollar = 14.525.7 Indonesian Rupiah)

The participants' knowledge of medications and dietary supplements used during COVID-19 self-isolation is described in Figure 1. Most participants had good knowledge (80.3%) with an average score of 12.2±3.7. However, most participants had a misconception that paracetamol and zinc should be taken until five days of self-isolation or continue up to 10 days if the patients experience shortness of breath or had breathing difficulties (53.2% and 92.6% respectively). In addition, 56.1% of participants thought that favipiravir could be obtained without prescriptions. Approximately one third of participants did not know about the recommended dosage of vitamin C and vitamin D (36.8% and 26.1%, respectively) during

quarantine. The participants' response to questionnaire on knowledge of medications used during COVID-19 self-isolation are detailed in Table 2.

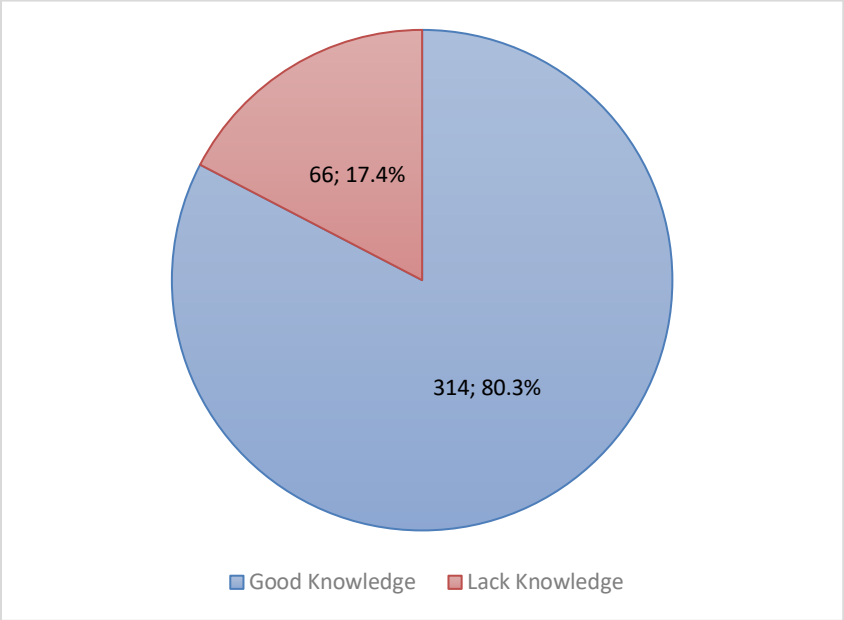

Figure 1. Participants' categories of knowledge (n=380).

Table 2. The participants' response to questionnaire on knowledge of medications and dietary supplements used during COVID-19 self-isolation.

Medications or Dietary Suplements used during Self-isolation COVID-19	Questionnaire	n (%) of Participants who know	n (%) of Participants who do not know
Paracetamol	Paracetamol needs to be consumed during COVID-19 self-isolation to reduce fever.	363 (95.5)	17 (4.5)
	Paracetamol could be obtained without any prescriptions.	341 (89.7)	39 (10.3)
	For adults, paracetamol should be taken 500 mg three times a day if you get a fever during COVID-19 self-isolation.	319 (84.0)	61 (16.1)
	Paracetamol does not have to be taken continuously until the duration of COVID-19 self-isolation is complete.	178 (46.8)	122 (53.2)
Favipiravir	Favipiravir is recommended to be consumed during COVID-19 self-isolation to combat infections.	207 (54.5)	173 (45.5)
	Favipiravir could not be obtained without any prescriptions.	167 (44.0)	213 (56.1)
Vitamin C	Vitamin C needs to be consumed during COVID-19 self-isolation to strengthen the immune system.	355 (93.4)	25 (6.6)
	Vitamin C could be obtained without any prescriptions.	345 (90.8)	35 (9.2)
	Vitamin C should be taken continuously during COVID-19 self-isolation.	314 (82.6)	66 (17.4)
	For adults, vitamin C should be taken 500 mg three times a day during COVID-19 self-isolation.	240 (63.2)	140 (36.8)
Vitamin D	Vitamin D needs to be consumed during COVID-19 self-isolation to strengthen the immune system.	334 (87.9)	46 (12.1)
	Vitamin D could be obtained without any prescriptions.	317 (83.4)	63 (16.6)
	Vitamin D should be taken continuously until the duration of COVID-19 self-isolation is complete.	286 (75.3)	94 (24.7)
	For adults, vitamin D should be taken 400-1000 IU once a day during COVID-19 self-isolation.	281 (74.0)	99 (26.1)
Zinc	Zinc needs to be consumed during COVID-19 self-isolation to strengthen the immune system.	309 (81.3)	71 (18.7)
	Zinc could be obtained without any prescriptions.	284 (74.7)	96 (25.3)
	For adults, zinc should be taken 8-40 mg once a day during COVID-19 self-isolation.	262 (69.0)	118 (31.1)
	Zinc does not have to be taken continuously until the duration of COVID-19 self-isolation is complete.	28 (7.4)	352 (92.6)

Furthermore, most participants (89.5%) showed a positive attitude about medication used during COVID-19 self-isolation (Figure 2). The participants who strongly agreed or agreed that every medication or supplement for COVID-19 self-isolation should be consumed under prescriptions was 66.3%. About 82.3% of participants strongly agreed or agreed that medications or supplements for self-isolation COVID-19 were easily obtained from the pharmacy. Most participants (77.1%) also strongly agreed or agreed that the medications and supplements are available and easily obtained from the online marketplace. More than half of participants (67.4%) concured or strongly concured that the internet provided complete information about medications used for COVID-19 self-isolation. However, only 62.4% of the participants were sure that not all of the

information about medications used for COVID-19 self-isolation available on the internet was correct. The participants' attitudes are depicted in Table 3.

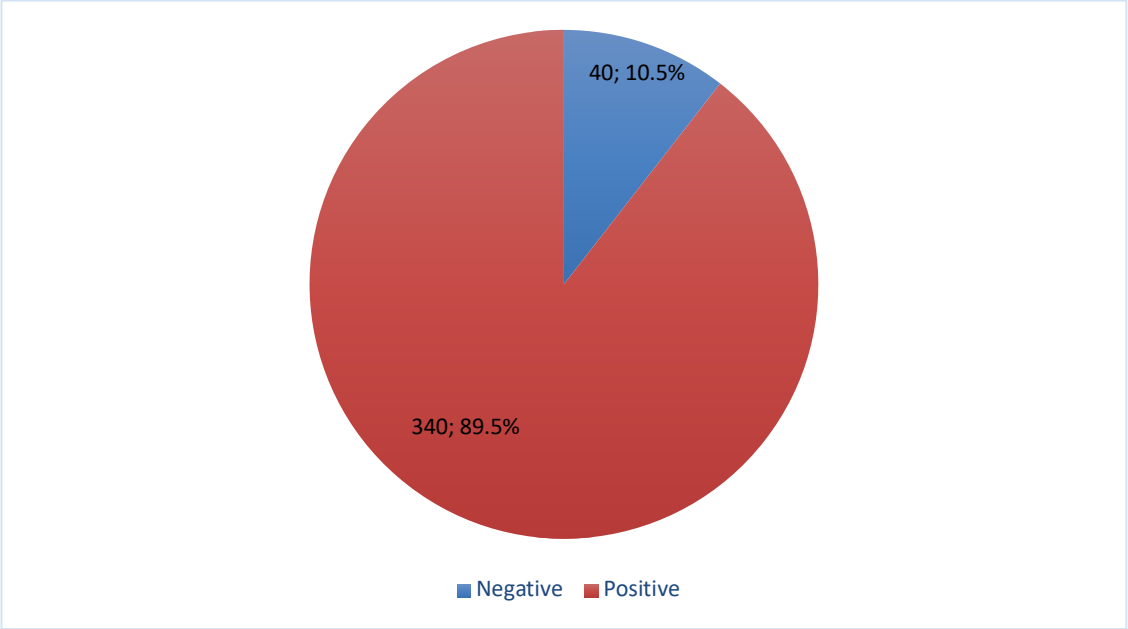

Figure 2. Participants' attitude on medications and dietary supplements use in COVID-19 self-isolation (n=380).

Table 3. The participants' response to questionnaire on attitude of medications and dietary supplements used during COVID-19 self-isolation.

Attitude on Medications used during Self-isolation COVID-19	Likert scale	n	%
Every medication or supplement for COVID-19 self-isolation should be consumed under prescriptions.	Strongly Agree	166	43.7
	Agree	86	22.6
	Neutral	84	22.1
	Strongly Disagree	23	6.1
	Disagree	21	5.5
The medications and supplements are available and easily obtained from a pharmacy.	Strongly Agree	200	52.6
	Agree	113	29.7
	Neutral	59	15.2
	Disagree	5	1.3
	Strongly Disagree	3	0.8
The medications and supplements are available and easily obtained from E-commerce.	Strongly Agree	190	50.0
	Agree	103	27.1
	Neutral	76	20.0
	Strongly Disagree	6	1.6
	Disagree	5	1.3
Information about medications used for COVID-19 self-isolation available on the internet is complete.	Strongly Agree	152	40.0
	Agree	104	27.4
	Neutral	100	26.3
	Disagree	19	5.0
	Strongly Disagree	5	1.3
Not all information about medications used for COVID-19 self-isolation available on the internet is correct.	Strongly Agree	150	39.5
	Neutral	111	29.2
	Agree	87	22.9
	Disagree	21	5.5
	Strongly Disagree	11	2.9

The bivariate logistic regression analysis showed that gender ($p = 0.000$), educational status ($p = 0.004$), occupations ($p = 0.018$), income ($p<0.001$), previously diagnosed with COVID-19 infections ($p = 0.000$), and experience in self-isolation ($p = 0.000$) significantly associated with participants' knowledge (Table 4). Further statistical analysis using the multivariate logistic regression analysis revealed that the significant predictors of good knowledge toward medications and dietary supplements used for COVID-19 self-isolation were only gender ($p = 0.001$) and participants income ($p = 0.002$) respectively (Table 4). Female participants were 3.2 times more likely to have good knowledge than male participants (AOR: 3.210; 95% CI: 1.651-6.241). Based on participants' income, those who earned more than 3 million IDR* and ranged 1-3 million IDR* were 7.2 times and 3.1 times more knowledgeable than participants with earning less than one million (AOR: 7.243; 95% CI: 2.351-22.317, and AOR: 3.113; 95% CI: 1.299-7.458, respectively).

Table 4. Sociodemographic association to knowledge about medications and dietary supplements used during self-isolation COVID-19.

Variables	Knowledge					
	COR (95% CI)	P		AOR (95% CI)	P	
Gender						
Male	R	-	**0.000***	R	-	**0.001*)**
Female	2.822 (1.631-4.885)	0.000		3.210 (1.651-6.241)	**0.001*)**	
Age (years)						
17-25	R	-	0.518	-	-	-
26-35	0.860 (0.474-1.560)	0.619		-	-	
>35	0.656 (0.319-1.349)	0.252		-	-	
Educational Status						
Secondary level	R	-	**0.004***	R	-	0.340
Tertiary level	2.523 (1.341-4.744)	0.004		1.420 (0.691-2.921)	0.340	
Occupations						
Non-healthcare worker Not employed	R	-	**0.018***	R	-	0.191
Employed	1.436 (0.770-2.678)	0.256		0.872 (0.354-2.146)	0.766	
Self-employed	0.646 (0.302-1.384)	0.261		0.457 (0.162-1.290)	0.139	
Health workers	5.893 (1.325-26.203)	0.020		2.123 (0.395-11.406)	0.380	
Income						
<1.000.000	R	-	**0.000***	R	-	**0.002*)**
1.000-000-3.000.000	2.087 (1.146-3.803)	0.016		3.113 (1.299-7.458)	0.011	
>3.000.000	5.996 (2.551-14.090)	0.000		7.243 (2.351-22.317)	0.001	
Previous COVID-19 diagnosis						
No	R	-	**0.000***	R	-	0.159
Yes	5.779 (2.421-13.794)	0.000		2.475 (0.702-8.718)	0.159	
Self-isolated before						
No	R	-	**0.000***	R	-	0.210
Yes	4.777 (2.284-9.988)	0.000		2.005 (0.676-5.945)	0.210	

R: Reference; COR: crude odds ratio; AOR: Adjusted Odd Ratio; CI: confidence interval; *statistically significant in bivariate; *) statistically significant in multivariate. *(exchange rate 1 American Dollar = 14.525.7 Indonesian Rupiah

Table 5. Sociodemographic association to attitude about medications and dietary supplements used during self-isolation COVID-19.

Variables	Attitude					
	COR (95% CI)	P		AOR (95% CI)	P	
Gender						
Male	R	-	0.155	-	-	-
Female	1.642 (0.829-3.253)	0.155		-	-	
Age (years)						
17-25	R	-	0.162	-	-	-
26-35	1.173 (0.541-2.545)	0.686		-	-	
>35	0.522 (0.230-1.184)	0.120		-	-	
Educational Status						
Secondary level	R	-	**0.048***	R	-	0.263
Tertiary level	2.186 (1.009-4.738)	0.048		1.594 (0.704-3.610)	0.263	
Occupations						
Non-healthcare worker						
Not employed	R	-	0.495	-	-	-
Employed	0.897 (0.412-1.955)	0.785		-	-	
Self-employed	0.744 (0.271-2.047)	0.567		-	-	
Health workers	2.605 (0.554-12.248)	0.225		-	-	
Income						
<1.000.000	R	-	**0.046***	R	-	0.129
1.000-000-3.000.000	1.145 (0.540-2.428)	0.724		1.157 (0.545-2.458)	0.704	
>3.000.000	3.667 (1.239-10.849)	0.019		3.070 (0.996-9.461)	0.051	
Previous COVID-19 diagnosis						
No	R	-	0.925	-	-	-
Yes	0.967 (0.480-1.947)	0.925		-	-	
Self-isolated before						
No	R	-	0.458	-	-	-
Yes	1.302 (0.649-2.613)	0.458		-	-	

R: Reference; COR: crude odds ratio; AOR: Adjusted Odd Ratio; CI: confidence interval; *statistically significant in bivariate; *) statistically significant in multivariate. *(exchange rate 1 American Dollar = 14.525.7 Indonesian Rupiah

In Table 5, it is shown that educational status (p = 0.048) and income (p = 0.046) were associated with participants' attitude toward medications and dietary supplements used during COVID-19 self-isolation. Subsequently, the multivariate logistic regression analysis results showed that the factors associated with participants' attitudes in bivariate analysis (educational status and income) were not significantly associated in multivariate analysis (p>0.05). Lastly, bivariate binary logistic regression analysis showed a significant association (p = 0.029) between knowledge and attitude. The participants with good knowledge were 2.3 more likely to have a positive attitude (OR: 2.270; 95% CI: 1.087-4.739; Table 6).

Table 6. Knowledge and attitude on medications used during self-isolation COVID-19 association.

		Attitude	
		OR (95% CI)	**p**
Categories of Knowledge	**Lack**	R	-
	Good	2.270 (1.087-4.739)	**0.029***

R: Reference; OR: Odd ratio; CI: confidence interval; *bivariate binary logistic regression.

3. DISCUSSION

COVID-19 has been declared as a global pandemic for almost three years. People diagnosed with COVID-19 or who had been in close contact with patients are advised to conduct self-isolate. During self-isolation, taking some medications or supplements is recommended. However, easy and broader access to the internet and other resources could be misguiding, and potentially lead to irrational drug use, which is also affected by their knowledge and attitude. In the present study, we evaluated the public knowledge and attitude towards medications and dietary supplements used during COVID-19 self-isolation such as paracetamol, vitamin C, vitamin D, zinc, and antiretroviral favipiravir.

In general, most participants possessed adequate knowledge (80.3%) of medications and supplements taken during COVID-19 self-isolation, and their attitude was largely favorable (89.5%). This finding was in line with the study conducted in Southeast Ethiopia, in which 65.4% had a positive attitude toward global drug use in COVID-19. However, only 50.6% of the study participants had good knowledge of overall drug use in COVID-19, which is lower than this current study results [12]. Variations in the participants' sociodemographic profile, particularly gender, may account for the disparity. As mentioned in the study that their majority of participants were male (64.1%) while in this study the male participants only 28.2% of the total participants [12]. In addition to that, we found that female participants were more likely to have good knowledge. This finding was confirmed by the study in Chile showing that women had a higher level of worry and fear of the pandemic, so they tend to have more knowledge than men [13]. The caregiving task and the sense of responsibility to their family members gave women a higher level of worry and fear, resulting in the willingness to access more information [14, 15]. The more significant level of worry and their responsibilities in caregiving task could lead to the willing in accessing more information.

Beside gender, participants' income also significantly influenced (p = 0.002) their knowledge level. This finding was supported by a survey conducted in Saudi Arabia, Bangladesh and Malaysia that a higher-income was significant predictors of having good knowledge [16–18]. The higher-income individuals have easier access to information resources like the internet and social media, thus making them more knowledgeable [19]. On the other hand, lower-income people tend to access traditional information like televisions and radio [20]. In this study, educational background and occupation were determined not to affect participants' knowledge (p>0.05). In contrast, Mamo *et al.* stated that education was significantly associated with knowledge of drugs used for COVID-19 [12]. This discrepancy may be related to the fact that most participants were young adults (aged ≤25 years) with better accessibility to several information sources. In this digital era, everyone has access to a wealth of information, allowing them to expand their knowledge effortlessly. Convenient access to various information sources possibly accounts for the lack of association between participant knowledge and education or profession.

Among medications suggested for self-isolation treatments, approximately half of the participants did not know that favipiravir was recommended during self-isolation especially for those with mild symptoms. In addition, 56.1% of the respondents did not know that favipiravir should be obtained under prescriptions (Table 2). Indonesian Ministry of Health recommends favipiravir for patients with mild symptoms for five days with an oral dosage of 1600 mg/12 hours for the first day and 600 mg two times a day for the four remains

days [8]. The lack of knowledge of regulations for obtaining favipiravir could lead to the high non-prescription demand and the irrational use of favipiravir since in many developing countries, dispensing prescription-only-medication without prescription is quite evident [21]. Thus, education and information regarding the use of favipravir for COVID-19 self-evaluation are needed.

Furthermore, 92.6% of participants had a misconception that zinc should be taken until the duration of COVID-19 self-isolation was complete. Zinc has immunomodulatory and anti-viral properties that can help strengthen the immune system [22]. However, due to the lack of evidence, zinc does not need to be used until the end of the quarantine period. These findings pointed out that there is still a need to improve public knowledge of the drugs used during COVID-19 self-isolation. These findings pointed out that improving public knowledge on the drugs used during COVID-19 self-isolation is necessary. The government and related parties like pharmacists and self-isolation caregivers (healthcare professionals recruited by local public health community centers) must take more action to strengthen public education and information about medication used during COVID-19 self-isolation.

In regard to participants attitude, most participants strongly agreed or agreed about the five statements in the questionnaire, such as observing whether prescriptions were used in obtaining medications or dietary supplements for COVID-19 self-isolation, from where they purchased the medications or supplements, and their perspective about information available on the internet. However, only 62.4% respondents strongly agreed and agreed that not all of the information about medications and supplements used for COVID-19 self-isolation available on the internet was correct. These findings revealed that approximately one of three participants tended to believe any online information. Trust in online health information was positively related to preference for internet health-seeking behavior [23]. Therefore, increasing public knowledge and awareness about medications and dietary supplements used in COVID-19 through the internet could be effective. However, it needs to be supplemented by education on how to be selective in accessing information.

The educational status and income were independently associated with respondents' attitude toward medications and dietary supplements usage during COVID-19 self-isolation. However, when analyzed in multivariate model, the two sociodemographic factors had no significant association with attitude. This finding indicated the necessity for further analysis of other factors affecting the participant's attitudes, such as family members diagnosed with COVID-19 and their experience becoming volunteers in health and non-health sectors that reported had a significant association with participants attitude [24]. Besides educational status and income, participants attitude was significantly associated with knowledge. Participants with good knowledge were two times more likely to have a positive attitude. This finding was similar to the results of the previous studies in Indonesia and India that also found that knowledge was slightly positively correlated with attitude [24, 25]. Knowledge is a foundation for building beliefs, forming positive attitudes, and being the reason for taking good action, behavior or practice [26, 27]. Regular campaign to improve knowledge about medications and dietary supplements used in COVID-19 self-isolation will significantly raise the public attitude.

This study has strengths and limitations. This study's strengths are the specificity of medications and dietary supplements suggested during COVID-19 self-isolation, which had not been studied before. Furthermore, the questionnaire had previously been tested for its validity and reliability, thus further ascertaining the validity of our findings. The study limitations include the number and distribution of study participants, which could not represent the whole Surabaya city. It is because we recruited respondents in public places where people from other towns could visit. Future research using purposive or random sampling focused on specific citizen participants is suggested. Another limitation was the use of a self-reporting questionnaire which relies on the participants' honesty, understanding, and interpretation. However, the participants can fill out the questionnaire without being judged because there was no intervention from the investigator. In addition, conducting a study on the practice of other medications and dietary supplements during COVID-19 self-isolation is suggested so that more comprehensive education strategies can be designed.

4. CONCLUSION

The participants surveyed in Surabaya had considerably good and possitive attitude regarding medications and dietary supplements used during COVID-19 self-isolation. In addition, the good knowledge about medications and dietary supplements used in COVID-19 self-isolation was associated to a positive attitude. Therefore, it necessitates conducting continuous education and information campaign about medications and dietary supplements used during COVID-19 self-isolation involving related parties.

5. MATERIALS AND METHODS

5.1. Study design and participants

A cross-sectional survey was conducted among the general population in Surabaya, Indonesia, from March to May 2022. Ethical approval for this study was obtained from the University of Surabaya ethics committee with certificate number 220/KE/XII/2021. Data were collected online through a self-reported questionnaire using *Google form*. The potential participants met the inclusion criteria such as (1) aged 17-60 years; (2) previously diagnosed with COVID-19 or not; (3) had self-isolation experience or not; and (4) willing to join the study were directly recruited when visiting public places like pharmacies, markets, and convenience stores during the study periods. All the participants who agreed to join the study and signed the written informed consent in paper form were given the *Google form* link via a messaging app. The participants who did not complete the *Google form* submission or wished to withdraw after filling out the questionnaire were excluded from the study.

5.2. Data collection instruments

The self-reported online questionnaire used in this study was developed based on the Indonesian Ministry of Health guideline for self-isolation during the COVID-19 pandemic [8]. The questionnaire was made using Indonesian and consisted of a consent form and three sections. The first page of the questionnaire explained the purpose and background of the study and the informed consent (an online version of the written consent form signed by participant to confirm participants agreement). Participants who agreed to continue would be directed to the first section to fulfill the sociodemographic profile including age, gender, education level, occupations, income level, previous COVID-19 diagnosis, and self-isolation experiences. The second section comprised of 18 statements using options "Yes", "No", and "Do not know" to assess participants' knowledge of various drugs and dietary supplements that might be used in COVID-19 self-isolation along with their dosage and duration of use. The last section consisted of 5 statements to assess participants' attitudes toward medications and dietary supplements used during COVID-19 self-isolations using a five-point Likert scale "strongly disagree", "disagree", "undecided", "agree", and "strongly agree".

A pilot study included 53 participants was conducted to evaluate the validity and reliability of the questionnaire. The validity evaluation was carried out using Point Biserial Correlation for the knowledge section and Pearson Correlation for the attitude section. For the reliability test, Kuder-Richardson 20 (KR-20) was used for the knowledge section, while the attitude section was evaluated using Cronbach's α. The evaluation results of both knowledge and attitude section showed a valid instruments (r count of all statements observing knowledge > r table 0.2845 and sig.(2-tailed) for all statements observing attitude <0.05, respectively). Regarding the evaluation of reliability, both knowledge and attitude section also revealed a reliable results (Reliability Coeficient r 0.6 for all statements in knowledge sections and Cronbach's α 0.707 in attitude section respectively).

5.3. Data analysis

The sociodemographics of the participants were presented as frequencies and related percentages. The participants' response to questionnaire on knowledge and attitude of medications and dietary supplements used during COVID-19 self-isolation was displayed as frequencies and percentages. For the knowledge section, the participants' responses were classified into "participants who know" and "who do not know" based on the scoring system.

To score the 18 statements assessing knowledge, 1 point was given to correct response and 0 point for incorrect or "Do not know" response. The correct responses were classified as "participants who know" while the incorrect or "Do not know" response classified as "participants who don't know". The total score for knowledge ranged from 0 to 18. The participants' knowledge was then grouped into two categories: lack knowledge with the total score of 0-10 and good knowledge with the total score of 11-18 [12]. Concerning attitude categorization, responses were scored 0 for strongly disagree, 1 for disagree, 2 for undecided, 3 for

agree, and 4 for strongly agree. The total scores ranged from 0 to 20. The scores were then divided into two categories. Scores 0 to 10 denoted negative attitude, while scores 11-20 portrayed positive attitude [12].

This study employed SPSS version 22 (International Business Machine) for the statistical analysis. the association of knowledge and attitude, in particular to sociodemographic factors was examined using a bivariate binary logistic regression test. This crude odd ratios, p-values and 95% confidence intervals for the bivariate analysis were reported. The significant statistical level was set at $p<0.05$. The sociodemographic factors that statistically significant ($p<0.05$) associated to knowledge or attitude in bivariate analysis were further analyzed in a multivariate model to obtain the association of the factors together with knowledge and attitude respectively. The adjusted odds ratio (odd ratio obtained from multivariate logistic regression), p-values and 95% confidence intervals were reported. A bivariate binary logistic regression test also examined the association between knowledge and attitude. The crude odd ratios, p-values and confidence intervals for the bivariate analysis were also reported.

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