

# KNOWLEDGE, ATTITUDE AND PREVENTION PRACTICE AMONG THE VOLUNTEERS (HCPs) IN IMPLEMENTING 5M

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**Abstract.** Health care providers (HCP) are a group that has a high risk of being exposed to COVID-19. Due to the large number of personnel needed to handle COVID-19, in several hospitals, health volunteers were involved to assist in the treatment process. As workers who deal directly with COVID-19 patients, volunteers are the targets in this study. HCP's health behavior can influence the escalation of prevention and control cases at their level. Therefore, this study aims to examine the practice of knowledge, attitudes, prevention (KAP) and factors related to the application of 5M on volunteers (HCP) at Hospital "X", Jakarta, Indonesia. This type of research is a quantitative study, with a cross-sectional research design. A cross-sectional study, with multiple logistic regression analysis conducted on 232 volunteers (HCP) in 2021. The instrument used was a modified questionnaire from 7 previous studies, both regional and international, which have been tested for validity and reliability in the same study. group (30 volunteers) and the same hospital. Based on the results, it was found that the implementation of 5M volunteers were categorized as "poor prevention practices" (67.7%), "inadequate knowledge" (58.2%) and "negative attitudes" (55.2%), with R square through multivariate test of 0.630 which means that the influence of the independent variable on the dependent variable is 63% and the variables related to 5M behavior (p-value <0.05) are knowledge and attitudes. Attitude is known as the most dominant variable with a p-value of 0.014.

**Keywords:** knowledge; attitude; prevention practice; volunteers (HCPs); 5M.

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## INTRODUCTION

The escalation of COVID-19 cases in Indonesia until December 23, 2021 amounted to 4,261,072 cases and has reached 144,034 thousand (3,4%) people who have been declared dead. Indonesia is a country with the highest daily addition of cases and the number of COVID-19 deaths in the world ([Lescure et al., 2020](#)) to be precise in September 2021, and is currently ranked 7th in the world out of 25 countries with the highest death rates. The area with the highest number of cases in Indonesia is Jakarta Province with a total of 864,825 cases (20.5%) (Report of the COVID-19 Handling Task Force, 2021).

The head of the Jakarta Provincial Health Office explained that the effective reproductive value (Rt) which is an indication of the transmission rate of COVID-19 has reached  $<1$  (0.96) as of November 17th, 2021. However, almost in all islands have an increasing Rt value of 0,98, where the achievement target is 0.5-0,7. Therefore, the government recommends adherence to preventive behavior, one of which is the implementation of 5M behaviors we called that consisting of wearing masks, washing hands, maintaining distance, avoiding crowds and reducing mobilization, which is contained in KEPMENKES (Indonesian Ministry of Health) No. HK.01.07/Menkes/413/2020 Regarding Guidelines for Prevention and Control of COVID-19.

Based on international research, hand washing reduces the risk of transmission by 35% ([Stangerup et al., 2021](#)). Other literature also states that frequent hand

washing reduces the risk of transmission by 55%. The use of surgical masks can reduce 70% of the spread of COVID-19 (WHO, 2020). Maintaining a minimum distance of 2 meters can minimize the risk of spreading by up to 85% Regarding to avoid crowds and to reduce mobility, the research results from the WGS (whole genome sequencing) of Faculty of Medicine, Public Health, and Nursing Department of Universitas Gadjah Mada (UGM), Yogyakarta stated that the higher of the social interaction, the higher the chance of a spike in cases (Report of the COVID-19 Handling Task Force, 2021).

Concentration of COVID-19 and/or RNA (ribonucleic acid), it is known the concentration of virus is higher in health facilities, which can provide the potential for indirect transmission of COVID-19 through the surrounding environment or objects contaminated with the virus from an infected person (for example, a stethoscope or a thermometer ([Chen et al., 2020](#))).

This shows that the hospital is one of the environments that have great potential for transmission. Data from the Ministry of Health (KEMENKES) in 2004 stated that transmission in hospitals was one of the highest contributors to disease with a percentage value reaching 93.4%. Research related to disease transmission in hospitals in the United States, England, and Kuwait also shows that hospitals are places for the spread of germs/viruses/bacteria, especially from carriers (from patients to officers or from officers to patients and from patients to visitors or vice versa) ([Miller et al., 2020](#)).

CDC (Center of Disease Control and Prevention) in its weekly report issued a

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study on the characteristics of health workers who were confirmed positive for COVID-19 and the WHO then estimated that around 80,000 to 180,000 health workers worldwide died from COVID-19 in the period of January 2020 to May 2021. A study in Qatar revealed that COVID-19 transmission to health workers occurred in 45% of co-workers and 29% of patients ([Alajmi et al., 2020](#)). In addition, research by ([Yang et al., 2020](#)) in East Java regarding the behavior of volunteers (HCPs) towards health protocols was found almost entirely, namely 87% of health workers did not comply with the COVID-19 handling and prevention protocol. However, this is likely coupled with the fact that some HCPs have inadequate knowledge of infection prevention practices.

Indeed, protection of HCPs and their working environment are relevant aspects in pandemic responses. This requires that HCPs must have up-to-date knowledge and optimistic attitude towards the many aspects of the pandemic. In addition, increasing the awareness and preventive behavior of HCPs with continuous updates about COVID-19 is relevant. Health behaviors of HCPs can influence prevention and control actions implemented in response to the pandemic.

Since HCPs are vital in the fight against COVID-19 pandemic, their prevention behavior takes a lion share of containing the infection among themselves. This notably depends on their knowledge, attitude and practice in dealing with this highly transmissible virus. As part of the pandemic response therefore, exploring HCP's knowledge, attitude and prevention practice (KAP) is very important. These

helps to notice deficiencies in COVID-19 understanding, related perceptions and prevention practices and thereby justify the significance to train frontline vulnerable HCPs on IPC skills ([Ashebir et al., 2022](#)).

Studies in various settings have indicated that there are huge differences in terms of the KAP of HCPs in the fight against the pandemic. Different factors like socio-demographic, knowledge and attitude were also identified to be associated with COVID-19 prevention practice. Despite the fact that HCPs play a central role in the response to COVID-19, to our knowledge information on HCPs/HCW for COVID-19 is still very limited. Even research for volunteers has not been found in Indonesia, particularly in assessing the KAP of volunteers (HCPs) to implement the prevention practice of COVID-19 that means 5M.

## **METHODS**

This type of research is a quantitative research, with a cross-sectional study design. This research was carried out in November 2021 at a hospital in Jakarta for 232 (samples) of 1.636 (populations) volunteers (HCPs) whom acted in red zone, which had been calculated using two-proportion difference hypothesis test formula with the help of sample size software. The sampling technique in this study used purposive sampling.

The dependent variable in this study is the COVID-19 prevention practice namely 5M and the independent variables consist of knowledge, attitude, and social demographics (sex, age, education categories, length of work as a volunteer,

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and previous work experience before volunteering). Age of volunteers (HCPS) was divided in two categories: 1) 19-32 years and (2) 33-45 years. Education category of volunteers (HCPS) was divided in two categories: (1) Medical that consist of physician and military/police physician; (2) Non-Medical that consist of nurses, medical laboratory technologist (MLT), pharmacist, and medical record specialist. The length of work as a volunteer was divided in two categories; (1) <6 months and (2) ≥6 month), also the previous work experience was divided in two categories; (1) Ever (divided in <5 years and ≥5 years) and (2) Never.

The data related to KAP of volunteers (HCP's) and socio-demographic characteristics that collected using a questionnaire (adapted and modified from 7 previous regional and international studies), which has been tested for validity and reliability on 30 participants in the same hospital and on the same research subject.

The instrument (questionnaire) was assessed using a total of 45 items (13 knowledge items, 12 attitude items and 20 prevention practice items) of 5M. The different number of items used to categorize KAP were then modified from the theory of Olum et al., Bloom et al. and Goni et al, (2021). Accordingly, a cut-off ≥80% ( ≥11 points out of 13), ≥80% (≥10 points out of 12), and ≥75% (≥18 points out of 20) was used to determine adequate knowledge, positive attitude, and good prevention practice.

Volunteers' knowledge of COVID-19 prevention practice is based on a 13-items scale. Every knowledge questions have a

possibility "True" and "False" answers. The correct answer (True) was coded as 1, while the wrong answer (False) was coded as 0 during analysis. Accordingly, the total score ranged from 0–13, with an overall greater score indicated adequate knowledge. For who scored ≥80% of the correct knowledge questions was considered as having "*adequate knowledge*" and for who scored <80% was considered as having "*inadequate knowledge*".

Attitudes toward the implementation of the prevention practices (5M) was based on a 12-items scale. Responses to each statement were shown on a 4-point Likert scale as follows: 4 ("Strongly agree"), 3 ("Agree"), 2 ("Disagree"), and 1 ("Strongly Disagree"). Thus, the total score ranges from 0–12, with a larger overall score indicating a positive attitude. Based on Bloom's modified cut off, scoring 80% of the attitude statements (≥10 points out of 12) considered to have a "positive attitude" and those who scored <80% (<10 points) was considered as having "negative attitude".

The prevention practice in this study is based on a 20-items scale that assesses the behavior of volunteers in implementing the 5M. Each behavior-related statement was responded with 4 points "Constantly" a score of 4, "Frequently" a score of 3, "Rarely" a score of 2 and "Never" a score of 1. Thus, the total score ranges from 0–20, with the overall greater scores indicate good prevention practices. Based on Bloom's modified intersection, scored ≥75% of the total of practice items (≥18 points out of 20) considered to have "*good prevention practices*" and who scored <75% (<18 points) is deemed to have "*poor*

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*preventive practices*".

Data checked by google form, entered into microsoft excel, coded and exported to SPSS version 23.0 for windows analysis. Descriptive statistics such as frequency, percentage, average, and standard deviations were calculated to summarize the categorical data. The modified by Bloom about cut-off point was used to determine adequate knowledge (80%), positive attitude (80%) and good preventive practice (75%).

The collected data is then processed through 3 stages of analysis, namely (1) Univariate (where the normality test in this study uses the skewness value and standard error. If the skewness value is divided by the standard error value, it results in a number  $<2$  then the data is normally distributed); (2) Bivariate (Using Pearson correlation test to see the relationship between variables, chi square test to select candidate variables with a reference p-value  $<0.25$ . For independent variables with p-value  $>0.25$ , but substantially important, then these variables can be entered into the multivariate model); (3) Multivariate (Performing elimination by maintaining the variables that have a statistical significance determined by p value  $< 0.05$  and the presence of associations was described using the odds ratio (OR) or relatif risk (RR) with their confidence intervals (CI) 95%).

Ethical approval were obtained from

the Ethics Review committee of the Universitas Indonesia and the hospital under study in Jakarta. After the research objectives are clearly explained, written and inform consent was obtained from all study participants. Consent form documenting research objectives, benefits, and procedures. Privacy and confidentiality information is also strictly guaranteed by all data collectors and researchers.

## RESULTS AND DISCUSSION

### Socio-demographic Characteristics of Respondents Related

From a total of 232 volunteers (HCPs), the average age was 27 years ( $SD \pm 5.39$ ), which concludes that the age range of respondents is dominated by the age of 19-32 years (81,9%). 60,3% of the respondents were women. Most of the them were non-medical (65.1%) who were nurses (42.7%), and from the total of all respondents, 71.6% who have been activated volunteers for  $<6$  months. Specifically, 44% of volunteers (HCPs) have no previous work experienced, while of the total 41,9% have a previous work experienced for  $\geq 5$  years. The majority of professions that had work experienced before becoming a COVID-19 volunteers were the nursing profession (43,8%) and followed by the medical profession (30,8%) out of a total of 130 volunteers who had work experienced table 1.

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**Table 1.** Distribution of Respondents Based on Socio-Demographic Variables (n=232)

Variable	Categories	n	(%)
Sex	Male	92	39,7
	Famale	140	60,3
Age	19 – 32	190	81,9
	33 – 45	42	18,1
Education Categories	Non Medical	<b>151</b>	<b>65,1</b>
	▪ Physician	68	29,3
	▪ Millitary/Police Physician	13	5,6
		<b>81</b>	<b>34,9</b>
	Medical	99	42,7
	▪ Nurses	10	4,3
	▪ Medical laboratory technologist (MLT)	30	12,9
	▪ Pharmacist	12	5,2
	▪ Medical record specialist		
Length of Work as a Volunteer	< 6 months	166	71,6
	≥ 6 months	66	28,4
Previous Work Experience Before Volunteering	Ever	<b>130</b>	<b>56,0</b>
	▪ <5 years	75	58,1
	▪ ≥5 years	54	41,9
	Never	<b>102</b>	<b>44,0</b>
<b>Total</b>		<b>232</b>	<b>100</b>

Knowledge of Volunteers (HCPs) About Prevention Behavior (5M). The findings of this result of study showed that more than half of the volunteers (HCPs) were 135 respondents (58,2%) had "inadequate knowledge" about 5M. The average cumulative score of knowledge obtained by volunteers (HCPs) about 5M was <80% (72.26) with the minimum scores was 46 and the maximum scores was 92. From each question item, it was found that >80%

of volunteers knows the indicators of 5M, the moment of using mask, the distance to avoid physical distancing, the right standing position in the elevator, and how to avoid high mobility (Table 3). Only 59,5% of volunteers knows how to wash the hands with soap and running water, 57,3% of volunteers who knows the effective time of wearing mask, and 53,9% who knows about social distancing table 2.

**Table 2.** Description of Volunteers' (HCPs) Length of Work and Previous Work Experience Before Volunteering Based on The Professions Specification (n=232)

Education Categories	Profession Specification	Total		Length of Work as a Volunteers						Previous Work Experience Before Volunteering									
		n	%	<6 months		≥6 months		Total		Ever				Never		Total			
				n	%	n	%	n	%	n	%	n	%	n	%	n	%		
Medical	Physician	68	29,3	47	20,3	21	9,05	68	29,3	37	15,9	3	1,29	40	17,2	28	12,1	68	29,3
	Military/Police Physician	13	5,6	13	5,60	0	0	13	5,6	3	1,29	5	2,16	8	3,45	5	2,16	13	5,6
Non Medical	Nurses	99	42,7	70	30,2	29	12,5	99	42,7	23	9,91	33	14,2	57	24,6	42	18,2	99	42,7
	MLT	10	4,3	8	3,44	2	0,86	10	4,3	5	2,16	1	0,43	6	2,59	4	1,72	10	4,3
	Pharmacist	30	12,9	18	7,76	12	5,17	30	12,9	4	1,72	6	2,59	10	4,31	20	8,62	30	12,9
	Medical Record Specialist	12	5,2	10	4,31	2	0,86	12	5,2	3	1,29	6	2,59	9	3,88	3	1,29	12	5,2
<b>Total</b>		<b>232</b>	<b>100</b>	<b>166</b>	<b>71,6</b>	<b>66</b>	<b>28,4</b>	<b>232</b>	<b>100</b>	<b>75</b>	<b>32,3</b>	<b>55</b>	<b>23,7</b>	<b>130</b>	<b>56,0</b>	<b>102</b>	<b>44,0</b>	<b>232</b>	<b>100</b>

**Table 3.** Description of Knowledge, Attitude and Prevention Practice (5M) Among Volunteers (HCPs) Based on The Professions Specification (n=232)

Variables		Knowledges				Attitudes				Prevention Practice			
		Adequate		Inadequate		Positive		Negative		Good		Poor	
		n	%	n	%	n	%	n	%	n	%	n	%
Medical	Physicians	31	13,4	37	15,9	29	12,5	39	16,8	2	10,5	43	18,5
	Military/Police Physicians	1	0,43	12	5,17	7	3,02	6	2,5	6	2,5	7	3,02
Non Medical	Nurses	42	18,1	57	24,7	42	18,1	57	24,7	2	9,9	76	32,8
	MLT	2	0,86	8	3,45	8	3,45	2	0,86	2	0,86	8	3,45
	Pharmacist	14	6,03	16	6,9	11	4,74	19	8,2	1	6,4	15	6,47
	Medical record specialist	7	3,02	5	2,16	7	3,02	5	2,2	4	1,72	8	3,45
<b>Total</b>		<b>97</b>	<b>41,8</b>	<b>135</b>	<b>58,2</b>	<b>104</b>	<b>44,8</b>	<b>128</b>	<b>55,2</b>	<b>7</b>	<b>32,5</b>	<b>157</b>	<b>67,5</b>

**Table 4.** Distribution of Respondents Based on Knowledge Items About 5M (n=232)

Items	Response			
	True		False	
	n	%	n	%
Indicators of 5M.	210	90,5	22	9,5
The correct steps of washing hands	167	72,0	65	28,0

Items	Response			
	True		False	
	n	%	n	%
How to wash the hands properly with soap and running water rightly	138	59,5	94	40,5
Duration of hand washing with soap and running water.	143	61,6	89	38,4
Duration of hand washing with hand sanitizer.	154	66,4	78	33,6
The right technique of using mask correctly.	150	64,7	82	35,3
The effective time duration for using mask.	133	57,3	99	42,7
The moment of wearing mask.	218	94,0	14	6,0
An example of implementating social distancing.	125	53,9	107	46,1
Provisions for physical distancing distance	199	85,5	33	14,2
The right position when in the elevator during pandemic conditions.	203	87,5	29	12,5
Definition of avoiding crowds.	138	59,5	94	40,5
One feature of the behavior to reduce mobility.	196	84,5	36	15,5

### Attitudes of Volunteers (HCPs) in Implementing 5M

As indicated by the findings of this study, 128 volunteers (HCPs) (55,2%) had a "negative attitude" towards the implementation 5M (Table 3). The average of volunteers score was 77,19 (<80%) to achieve a positive attitude standart, with the minimum percentence scores was 58 and the maximum was 92.

The standard by Bloom which is also adjusted to the professional background and of course adjusted to the acquisition of training and information related to COVID-19 prevention practice organized by the hospital before becoming a volunteers and

with the increasing escalation of COVID-19 cases. However, it turns out that this is not enough to provide support for volunteers (HCPs) to have a positive attitude.

Most respondent "strongly agree" that 5M is the best way to prevent the transmission of COVID-19 (84,1%); shaking hands or interacting physically can increase the transmission (76,7%); utilizing online platforms to reduce outside activities; hand washing is a basic thing in preventing the spread of COVID-19 (69%) and trying to not leave the hospital/mess area (64,7%) table 5.



**Table 5.** Distribution of Respondents Based on Attitude's Items in Implementing 5M (n=232)

Items	Responses							
	Strongly Agree		Agree		Disagree		Strongly Disagree	
	n	%	n	%	n	%	n	%
5M practices is the best way to prevent the transmission of COVID-19	195	84,1	33	14,2	4	1,7	0	0
Washing hands is a basic thing in preventing the spread of COVID-19	160	69,0	71	30,6	1	0,4	0	0
Shaking hands or interacting physically can increase the transmission	178	76,7	47	20,3	4	1,7	3	1,3
Using hand sanitizer even when using a handsocon at work is important.	68	29,3	0	0	105	45,3	59	25,4
Feeling lazy when wearing mask during activities	56	24,1	34	14,7	91	39,2	51	22,0
Feeling tired and having difficult breathing when wearing mask	29	12,5	43	18,5	84	36,2	76	32,8
Using double masks is very stifling	20	8,6	19	8,2	141	60,8	52	22,4
Hospital police regarding the prohibition of gathering outside the room is very important	136	58,6	90	38,8	6	2,6	0	0
Try to minimize activities outside (gatherings, visiting or something like that) if not needed.	71	30,6	147	63,4	14	6,0	0	0
Do not use the elevator when it over capacity	83	35,8	84	36,2	55	23,7	10	4,3
Utilizing online platforms to reduce outside activities such as grab/gofood, online shop, etc.	164	70,7	56	24,1	1	0,2	11	4,7
Try to not leave the hospital/mess area.	150	64,7	60	25,9	12	5,2	10	4,3

### Preventive Practices Carried Out by Volunteers (HCPs) Related To 5M

Based on the findings of this study, there were 67,7% of the volunteers (HCPs) (157 respondents) that had "poor prevention practices" of 5M (Tabel 3). The

average percentage of prevention practice of the 5M volunteers (HCPs) was <75% (68,32) with minimum percentence scores was 52 and the maximum was 80.

From the result, 86,2% of respondents stated doing "frequently" in taking positions back to back in the elevator adapt

to the cycle in hospital that very crowded; 76,3% stated "always" never do activities outside the hospital/mess area as long as it's not a work thing; 72,4% stated "always" washing hands with soap and running water according to 6 steps; 72,8% stated "always" washing hands with hand sanitizer before and after touching patients even when using handscoon. Aside from that, 71,1% stated "rarely" minimizing direct

contact with patients according to treatment needs even when using a PPE (Personal Protective Equipment), because of time mangement cycle; 74,1% stated "frequently" using the same mask more than once; <45% stated "rarely" washing hands with the right duration; and 31,5% stated "never" maintain the distance when doing activities outside table 6.

**Table 6.** Distribution of Respondents Based on Prevention Practices (5M) (n=232)

Items	Responses							
	Constantly		Frequently		Rarely		Never	
	n	%	n	%	n	%	n	%
Washing hands according to 6 steps	168	72,4	45	19,4	12	5,2	7	3,0
Bringing and washing the hands with hand sanitizer when no facilities are available	141	60,8	65	28,0	22	9,5	4	1,7
Washing hands with handsanitizer in 20-40 seconds	105	45,3	20	8,6	101	43,5	6	2,6
Washing hands with soap and running water in 40-60 seconds	125	53,9	12	5,2	95	40,9	0	0
Using hand sanitizer before and after touching the patient even when using a handscoon	169	72,8	63	27,2	0	0	0	0
Do not touch the face area during working time	126	54,3	82	35,3	10	4,3	14	6,0
Minimizing direct contact with patients even when using a PPE.	8	3,4	59	25,4	165	71,1	0	0
Do not take off the mask while outside	41	17,7	135	58,2	46	19,8	10	4,3
Sometimes take off the mask during work	9	3,9	5	2,2	59	25,4	159	68,5
Using the same mask more than once	33	14,2	172	74,1	6	2,6	21	9,1
Change the mask when it feels tight, wet/humid, or dirty	0	0	98	42,2	134	57,8	0	0
Change the mask when it has been used >4-5 hours except during working times (8 hours)	98	42,2	97	41,8	31	13,4	6	2,6
The mask is removed only when eating.	55	23,7	112	48,3	51	22,0	14	6,0

Items	Responses							
	Constantly		Frequently		Rarely		Never	
	n	%	n	%	n	%	n	%
Always using mask when going outside	114	49,1	49	21,1	53	22,8	16	6,9
Maintain the distance (1-2 meters) with others	7	3,0	140	60,3	12	5,2	73	31,5
Adjusting the distance from the patient at work and during the treatment process.	101	43,5	73	31,5	43	18,5	15	6,5
Standing back to back in the elevator.	32	13,8	200	86,2	0	0	0	0
Do not hold meetings or swarming activities in the park if it's not necessary	118	50,9	95	40,9	19	8,2	0	0
Maximizing online platform to reduce social activities outside	145	62,5	27	11,6	49	21,1	11	4,7
Minimize activities outside the hospital/mess area	177	76,3	54	23,3	1	0,4	0	0

### Factors Associated With COVID-19 Prevention Practice (5M)

Through the results of multiple logistic regression analysis, it is known that attitude and knowledge are variables that significantly influence the implementation of prevention practices (5M) with a p value <0.05 (0.014 and 0,017). The results of R square showed 0.630, which means that the attitude and the knowledge variables had an effect of 63% on the implementation of prevention practices (5M) and the remaining (37%) is influenced by other variables outside the variables studied. The attitude variable was tested as the most dominant (OR = 4.840) variable that influencing the practice of prevention (5M) (Table 7,10).

On the other hand, the results of the chi square test, were also carried out to see the relationship between others variables. It was found that the variable of the length of

work as a volunteers and the variable of the knowledge were significantly corellated to attitude which were assessed from a p value <0.05 (0.026 and 0.045) (Table 9).

Judging from the RR value, it is known that volunteers (HCPs) who working <6 months were possibility having positive attitude towards the implementation of prevention practices (5M) 7.59 times greater than the volunteers (HCPs) who working ≥6 months. As for the knowledge variable, it is known that the value of volunteers (HCPs) with adequate knowledge were 7.89 times more possible to have a positive attitude towards prevention practices than the volunteers (HCPs) who having inadequate knowledge. Likewise, volunteers (HCPs) who had a positive attitude were 8.01 times more possible to have adequate knowledge than volunteers (HCPs) who having a negative attitude (Table 8, 9,10).

**Table 7.** Distribution of Respondents Based on Sex, Age, Education Categories, Length of Work, Previous Work Experience, Knowledge, and Attitude of Volunteers' (HCPs) Prevention Practices (5M) (n=232)

Variables		Prevention Practice of 5M				n	p-Value	OR (95% CI)
		Good prevention practices		Poor prevention practices				
		n	%	n	%			
Sex	Male	24	26,1	68	73,9	92	0,099	0,910 – 2,896
	Female	51	36,4	89	63,6			
Age	19 – 32	62	32,6	128	67,4	190	0,833	0,450 – 1,903
	33 – 45	13	31,0	29	69,0			
Education categories	Medical	31	38,3	50	61,7	81	0,156	0,375 – 1,172
	Non medical	44	29,1	107	70,9			
Length of Work as a Volunteer	<6 months	50	30,1	116	69,9	166	0,254	0,778- 2,572
	≥6 months	25	37,9	41	62,1			
Previous Work Experience	Ever	35	26,9	95	73,1	130	<b>0,047</b>	0,328 – 0,995
	Never	40	39,2	62	60,8			
Knowledge	Adequate	24	24,7	73	75,3	97	0,036	0,304 – 0,965
	Inadequate	51	37,8	84	62,2			
Attitude	Positive	26	25,0	78	75,0	104	<b>0,031</b>	0,304 – 0,950
	Negative	49	38,3	79	61,7			

**Table 8.** Distribution of Respondents Based on Sex, Age, Education Categories, Length of Work, Previous Work Experience, and Attitudes of Volunteers' (HCPs) Knowledge About 5M (n=232)

Variables		Knowledge of 5M				n	p-Value	OR (95% CI)
		Adequate Knowledge		Inadequate Knowledge				
		n	%	n	%			
Sex	Male	38	58,7	54	41,3	92	0,899	0,607 – 1,765
	Female	59	42,1	81	57,9			
Age	19 – 32	80	42,1	110	57,9	190	0,846	0,474 – 1,846
	33 – 45	17	40,5	25	59,5			
Education categories	Medical	32	39,5	49	60,5	81	0,602	0,668 – 2,005
	Non medical	65	43,0	86	57,0			
Length of Work	<6	73	44,0	93	56,0	166	0,289	0,404 –

	months	24	36,4	42	63,6	66		1,310
	≥6 months							
Previous Work Experience	Ever	56	43,1	74	56,9	130	0,659	0,665 – 1,906
	Never	41	40,2	61	59,8	102		
Attitude	Positive	36	34,6	68	65,4	104	<b>0,045</b>	0,341 – 0,990
	Negative	61	47,7	67	52,3	128		

**Table 9.** Distribution of Respondents Based on Sex, Age, Education Categories, Length of Work, Previous Work Experience, and Knowledge of Volunteers (HCPs) Towards Attitude in Implementing 5M (n=232)

Variables		Attitudes toward 5M				n	p-Value	OR (95% CI)
		Positive Attitude		Negative Attitude				
		n	%	n	%			
Sex	Male	48	52,2	44	47,7	92	0,068	0,359 – 1,039
	Female	56	40,0	84	60,0	140		
Age	19 – 32	83	43,7	107	56,3	19	0,456	0,660 – 2,158
	33 – 45	21	50,0	21	50,0	42		
Education categories	Medical	36	44,4	45	55,6	81	0,932	0,595 – 1,763
	Non medical	68	45,0	83	55,0	151		

**Continue Table**

Length of Work	<6 months	<b>82</b>	<b>49,4</b>	<b>84</b>	<b>50,6</b>	<b>16</b>	<b>0,026</b>	<b>0,282 – 0,929</b>
	≥6 months	<b>22</b>	<b>33,3</b>	<b>44</b>	<b>66,7</b>	<b>66</b>		
Previous Work Experience	Ever	58	44,6	72	55,4	13	0,942	0,582 – 1,652
	Never	46	45,1	56	54,9	102		
Knowledge	Adequate	36	37,1	61	62,9	97	<b>0,045</b>	0,341 – 0,990
	Inadequate	68	50,4	67	49,6	135		

**Tabel 10.** The Final Results of The Chi Square and Multivariate Tests (n=232)

Test Type	X Variable	Y Variable	P value	RR	CI 95%	
Chi square	Knowledge	Attitude	0,045	7,590	0,341 – 0,990	
	Length of Work		0,026	7,890	0,282 – 0,929	
	Attitude	Knowledge	0,045	8,010	0,341 – 0,990	
Multivariate	Attitude	Prevention Practice	0,014	4,840	0,269 – 0,865	0,630
	Knowledge	(5M)	0,017	4,820	0,267 – 0,876	(63%)

### Discussion

This study assessed KAP among volunteers (HCPs) and identified factors associated with COVID-19 prevention practices in hospitals. Thus, it was found that the proportion of “inadequate knowledge”, “negative attitudes” and “poor prevention practices (5M)” towards COVID-19 among volunteers were 58,2%, 55,2%, and 67,7% respectively. This shows that volunteers (HCPs) do not yet competent enough in the knowledge, attitude and prevention practice about prevention behavior of COVID-19 that means 5M.

This study have a different result of the other research at two hospitals at once, namely Hospitals in Ankara and Bingol, Turkey, where it was found that volunteers (HCPs) had a high level of knowledge (85%) with a positive attitude (87%) and had a high level of prevention practice (89%) with a correlation value between knowledge and behavior through p value =0.001 (<0.05) (Yasin Uzuntarla and Sumeyra Ceyhan, 2021). But, the result of this study is supported by the research about HCPs in

Tanzania which concludes that adherence to prevent behavior during the pandemic is still inadequate (Powell-Jackson T, King JJC, Makungu C, Spieker N, Woodd S, Risha P, et al, 2020), that probably due to time constraints when conducting research with observational techniques that have not been maximized. That study was conducted by measuring compliance based on observations, so the level of validity still tends to be more valid (Xiong Y, Zhang Q, Sun D, Zhu W, 2020).

According to the research above, would like to emphasize that the differences in the results of this research of KAP (HCPs) may differ from the research technique and the time of the study, which was adjusted to the escalation of the case. If this research can be confirmed by observation over a certain period of time with a high case escalation, it will give better results.

This research found that there was 58,2% (135 respondents) volunteers (HCPs) have inadequate knowledge of prevention practice (5M) strongly conclude that volunteers (HCPs) do not fully understand

their duties and roles in their field, while the the remaining amount that 41,8% (97 respondents) volunteers (HCPs) having an adequate knowledge. So, in this case will be proved the Bloom's theory which states that knowledge is a domain that very important to shape one's actions (over behavior). The higher knowledge of HCPs about their field, the higher participation in high healthy behavior (Dewi, Adawiyah and Rujito, 2019).

The items of knowledge in detail explains the understanding of volunteers (HCPs), having added three times through previous studies, namely from 3M protocols, 5M to 6M which have been summarized in the Circular of the COVID-19 Handling Task Force No. 16, 2021.

From this reseach was found that there were only about 9.5% of the volunteers still do not understand the indicators in doing 5M, while just about 28-40% do not understand the right steps in washing hands, the duration needed to wash hands and the correct technique of using masks. On the other side, there were found that still 6% of volunteers do not understand the difference between social and physical distancing, 14.2% do not knew the correct distance measure in avoiding COVID-19 transmission, 12.5% do not understand the procedure for adjusting positions while in an elevator in a pandemic situation, 40.5% do not understand what is meant by avoiding crowds, and 15.5% do not understand how to minimize mobility.

The results of this study show in detail that the lack of knowledge of volunteers (HCPs) adjusted for the time of the study which lasted approximately a month, after going through a year of adaptation to the

COVID-19 condition, was still at the first level (know) of knowledge, which should have entered the third level (application) of knowledge is in accordance with Notoadmodjo's theory (2010).

In this case, it is necessary to note that volunteers (HCPs) who will be accepted as part of the health workforce to assist the process of treating COVID-19 patients must be facilitated in increasing volunteers' knowledge regarding COVID-19 prevention, so that the on going treatment process is not necessarily about the routines and the cycle of cares, but volunteers (HCPs) will able to serve as a source of information for patients and also as a basis for taking academically capable in treatment actions regarding the health problems being treated.

Turning to description the attitude of volunteers (HCPs) in implementing prevention practices (5M), 55.2% of volunteers (HCPs) have a negative attitude category. This is similar to a study in Uganda, which stated that most HCPs has a negative attitude towards prevention practice of COVID-19 (Olum, et al., 2020).

It is clearly relate with the chi square test results that showed a significant relationship between attitudes and prevention pracrice (5M) through p-value 0.014 ( $<0.05$ ). This study have the same result by Wiranti, et al (2020) and the research about COVID-19 for the HCPs in Nepal and Pakistan which states that there was a significant relationship between attitude and prevention practice with a p value  $< 0.05$  (Saqlain et al. 2020).

Attitude is a predisposing factor for a person to perform certain behaviors. This study shows that the attitude of volunteers

(HCPs) is still in the negative category with the standard provided by Bloom. A positive attitude is a sign in a person to be able to do work, so that they are able to behave well. According to (Garner et al., 2020), this means that not all respondents are able to accept, respond, and responsible for the stimulus which in this case is COVID-19.

Other results studied was found that in addition to attitude affect prevention practices, was also influenced by length of work and knowledge. In this regard, there is no research that discusses the relationship between attitude and length of work (as volunteers). Then for the attitudes and the knowledge, known as variables was influence each other. This is equivalent to the theory which states that knowledge is one of the factors that influence the formation of individual's attitude. Based on theory and research, if someone has a good knowledge will have a good attitude as well (Jing et al., 2019).

The description of preventive practices (5M) of volunteers (HCPs) in this study was categorized as a "poor practice" (67.7%), which contrary to the results of a study in the Amhara Region, Northern Ethiopia that HCPs had good prevention practices (79.5%) (Tsehay et al., 2021). The results of the study showed that the practice of prevention (5M) in this case that means the indicators, summarized in the 5M is not fully implemented properly and correctly.

Several factors that significantly influence prevention practice (5M) are attitude and knowledge with a p value =0.014 and 0,017 ( $< \alpha$ ). R square states that attitude and knowledge 63% had a positive effect on the implementation of prevention practices (5M). This relates to research on

HCPs in the cities of Medan and Batam in the research by (Kim et al., 2022), where attitude had a significant relationship based on a p value (0.036) and the research of (Assefa et al., 2020) about KAP on HCPs in Silte Zone, Southern Ethiopia that significantly related with prevention practices that based on a p value (0.039).

Of each measured variable, attitude is the most dominant variable. Likewise, research by (Yanti et al., 2020) found that the attitude was the most dominant in influencing prevention practices significantly ( $F[2.1164] = 76.546$ ,  $p < 0001$ ) with a strong effect ( $f = 0.36$ ). In the analysis at the level of the linear coefficient of the regression model, if the attitude increases by 1 point, the prevention practice will increase by 0.287 points (Islam et al., 2020).

## CONCLUSIONS

Volunteer knowledge about COVID-19 prevention is not evenly understood. Even though COVID-19 has been going on for more than entering 2 years, understanding regarding COVID-19 is not only meant to be known. This is sought so that there is awareness and efforts to act healthy towards oneself while also acting healthy towards others or the environment.

This is further emphasized, because HCPs are the main actors in implementing healthy behavior.

Overall, this study concludes that from a socio-demographic point of view, there are no variables that affect prevention practices (5M). Knowledge and attitude are the factors that influence the implementation of 5M. While crosswise, the variables of attitude and knowledge are

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interrelated and influencing factors. By knowing the description of volunteers (HCPs) in this case knowledge about 5M and attitudes in implementing 5M, even the implementation of 5M behavior itself, actually it is still very minimal even among professionals.

This is an important note, that even though being a volunteer, actively participating in health care based on the field of health education requires being academically and artistically capable of doing care. IPC (Infection Prevention & Control) as an institution that supports the quality of the effectiveness of treatment compliance in hospitals needs to pay attention to SOP (standard operating procedures) in order to enable volunteers (HCPs) to know for sure and to carry out correctly, procedures in care, especially in the era of the COVID-19 pandemic which has not subsided. Even though COVID-19 will eventually become endemic, this will become a benchmark for the effectiveness of handling infectious diseases specifically in hospitals.

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