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## Introduction

- Coronavirus disease 2019 (COVID-19) was declared a global pandemic as of 11 March 2020 [1]. Immediately, the Malaysian government initiated a nationwide Movement Control Order (MCO) of various phases (starting 18 March 2020) to stop the spread of this potentially deadly infection.
- Having adequate knowledge regarding COVID-19 is paramount, especially for healthcare workers (HCWs).
- This study aims to assess COVID-19 knowledge, attitude and practice (KAP) among HCWs in Perlis and recognize the challenges they faced while working during the MCO period.

## Materials and Methods

- **Study design:** Multicentric cross-sectional web-based survey
- **Study population:** HCWs in Perlis
- **Data collection period:** 29<sup>th</sup> May to 27<sup>th</sup> July 2020
- **Study site:** Government and private healthcare facilities in Perlis
- **Data collection tool:** A 4 knowledge, 9 attitude and 4 practice item validated questionnaire (Cronbach's alpha=0.71, 0.72, 0.72 respectively). 14 items assessed the MCO challenges. The survey consists of 6 sections (**Table 1**). Links to the online questionnaire were later generated and shared to WhatsApp groups of HCWs in Perlis. Each eligible and consenting participant completed an online informed consent form before answering the questionnaire.
- **Data analysis:** Using the Statistical Package for the Social Sciences (SPSS) software version 20.0 [2]. Descriptive analysis focused on frequencies and percentages. Chi-square and Fisher's exact test used to determine association between selected demographic variables and KAP scores. Statistical significance level was set at  $p < 0.05$ .

**Table 1 : Questionnaire construct**

Section	Total no of items	Valid items	Answer options
A : Socio-demographic information	12	N/A	N/A
B : COVID-19 knowledge	15	4	True, False, Don't know
C : Attitude towards COVID-19	11	9	Likert scale (Strongly disagree, Disagree, Neutral, Agree, Strongly agree)
D : Practice during COVID-19 pandemic	5	4	Likert scale (Never, Rarely, Sometimes, Often, Always)
E : Challenges working during MCO	14	N/A	Likert scale (Strongly disagree, Disagree, Neutral, Agree, Strongly agree)
F : Challenges working during CMCO/RMCO	14	N/A	Likert scale (Strongly disagree, Disagree, Neutral, Agree, Strongly agree)

## Results

- 373 respondents (**Table 2**) were included in the final analysis, of which 48.0% (n=179) were nurses, 14.8% (n=55) doctors, 10.7% (n=40) administrative staffs and others (26.5%, n=99). HCWs from various government and private health sites participated.
- Pearson's chi-square test indicated significant association between KAP scores and occupational status ( $p < 0.001$ ) and KAP scores and working hours ( $p < 0.001$ ).
- Respondents were mostly 82.3% (n=307) females, aged  $35.5 \pm 7.69$  years old, married; n=299 (80.2%) with spouse's working in the government sector; n=211 (56.6%), having at least 2 children; n=76 (20.4%), residing; n=324 (86.9%) and having hometown; n=159 (42.6%) in Perlis, working at the hospital; n=306 (82.0%) during office hours (without on-calls); n=123 (33.0%) and having > 10 years of working experience; n=179 (48.0%).
- **KAP scores:** Majority of HCWs (69.7%, n=260) had good knowledge (mean score= $2.9 \pm 1.01$ ), optimistic attitude (52.3%, n=195) and good practice (56.0%, n=209) towards COVID-19.
- **Knowledge:** Almost all HCWs obtained correct responses for all knowledge item questions. Most knew that COVID-19 was not transmitted via airborne; n=220 (59.0%), the virus cannot penetrate the skin of your hands and infect you; n=239 (64.1%), many infections were not caused by having contact with positive COVID-19 animals; n=283 (75.9%) and social distancing is important in preventing the spread of the disease; n=356 (95.4%).

- **Attitude:** 145 (38.9%) of HCWs did not fear of getting infected by COVID-19 when they go to work, were confident that Perlis will be able to maintain its green zone status (n=173, 46.4%), were strongly confident Malaysia will win the battle against COVID-19 (n=181, 48.5%), were confident that one day there will be a cure for this infection (n=189, 50.7%), agreed that we should still have roadblocks located within the city to help reduce movement of people in the state of Perlis (n=134, 35.9%), strongly agreed that we should improve our inter-state boarder security and control (n=229, 61.4%), agreed that we should extend our MCO (n=142, 38.1%) and strongly agreed that good health is more valuable than good economy (n=161, 43.2%).
- **Practice:** Most HCWs who participated always practice hand hygiene (n=262, 70.2%), mask wearing (n=232, 62.2%), use of hand sanitizer (n=217, 58.2%) and social distancing (n=238, 63.8%) when necessary.

**Table 2 : Association between KAP scores and selected socio-demographic characteristics**

Variables	Total (N=373)	n (%)			p-value <sup>a</sup>		
		Good knowledge	Optimistic attitude	Good practice	K score	A score	P score
Gender					0.183	0.501	0.102
Male	66 (17.7)	51 (13.7)	32 (8.6)	31 (8.3)			
Female	307 (82.3)	209 (56.0)	163 (43.7)	178 (47.7)			
Age	35.5±7.69 <sup>c</sup>						
Marital status					0.084	0.031	0.082
Single	62 (16.6)	49 (13.1)	23 (6.2)	28 (7.5)			
Married	299 (80.2)	205 (55.0)	165 (44.2)	172 (46.1)			
Others	12 (3.2)	6 (1.6)	7 (1.9)	9 (2.4)			
Workplace					0.826 <sup>b</sup>	0.003 <sup>b</sup>	0.548 <sup>b</sup>
Hospital	306 (82.0)	212 (56.8)	173 (46.4)	177 (47.5)			
Health Clinic	34 (9.1)	26 (7.0)	12 (3.2)	17 (4.6)			
State Health Department	23 (6.2)	15 (4.0)	6 (1.6)	10 (2.7)			
District Health Office	5 (1.3)	4 (1.1)	1 (0.3)	2 (0.5)			
Others (Government and Private)	5 (1.3)	3 (0.8)	3 (0.8)	3 (0.8)			
Occupational status					< 0.001	< 0.001	< 0.001
Doctor	55 (14.7)	47 (12.6)	16 (4.3)	21 (5.6)			
Dentist	14 (3.8)	12 (3.2)	4 (1.1)	4 (1.1)			
Paramedic	16 (4.3)	14 (3.8)	8 (2.1)	9 (2.4)			
Nurse	179 (48.0)	107 (28.7)	114 (30.6)	131 (35.1)			
Pharmacist	26 (7.0)	22 (5.9)	9 (2.4)	9 (2.4)			
Allied Health Professional	35 (9.4)	29 (7.8)	19 (5.1)	12 (3.2)			
Administrative Staff	40 (10.7)	22 (5.9)	23 (6.2)	21 (5.6)			
Others	8 (2.1)	7 (1.9)	2 (0.5)	2 (0.5)			
Working hours					< 0.001	< 0.001	< 0.001
Working office hours with on-call	76 (20.4)	59 (15.8)	39 (10.5)	40 (10.7)			
Working office hours without on-call	123 (33.0)	99 (26.5)	46 (12.3)	52 (13.9)			
Working in a shift with on-call	79 (21.2)	47 (12.6)	45 (12.1)	49 (13.1)			
Working in a shift without on-call	84 (22.5)	47 (12.6)	58 (15.5)	57 (15.3)			
Others	11 (2.9)	8 (2.1)	7 (1.9)	11 (2.9)			
Working experience					0.617	0.078	0.007
Less than 1 year	25 (6.7)	16 (4.3)	12 (3.2)	18 (4.8)			
1 - 2 years	19 (5.1)	16 (4.3)	5 (1.3)	7 (1.9)			
3 - 4 years	22 (5.9)	18 (4.8)	8 (2.1)	5 (1.3)			
5 - 6 years	50 (13.4)	33 (8.8)	27 (7.2)	28 (7.5)			
7 - 8 years	46 (12.3)	33 (8.8)	30 (8.0)	31 (8.3)			
9 - 10 years	32 (8.6)	22 (5.9)	19 (5.1)	18 (4.8)			
More than 10 years	179 (48.0)	122 (32.7)	94 (25.2)	102 (27.3)			

Notes: <sup>a</sup>Pearson's chi-square test, <sup>b</sup>Fisher's exact test, <sup>c</sup>Mean±Standard deviation

- **MCO challenges:** Main challenges were difficulty going out shopping for daily essentials (36.5%, n=136), had less quality time with children due to work (22.5%, n=84) and difficulty meeting with family members (33.0%, n=123).

## Discussion / Conclusion

- **Discussion:** COVID-19 is a novel infectious disease. HCWs should constantly update their knowledge on COVID-19 based on current clinical evidences. Several Asian studies demonstrated high levels of COVID-19 knowledge among HCWs [3-4], similar to the results of our study. To the researchers' knowledge, this is the first study to investigate KAP towards COVID-19 in Perlis.
- **Conclusion:** In this study, HCWs had good COVID-19 knowledge, optimistic attitude and good practice. Main challenges identified working during the MCO were difficulty going out shopping for daily essentials, having less quality time with children due to work and difficulty meeting family members.

## References

1. The New York Times. Coronavirus Live Updates: W.H.O. Declares Pandemic as 3. Number of Infected Countries Grows. The New York Times. Available at <https://www.nytimes.com/2020/03/11/world/coronavirus-news.html#link-682e5b06>. March 11, 2020; Accessed: March 11, 2020.
2. IBM Corp, IBM SPSS Statistics for Windows, Version 20.0, Armonk, NY: IBM Corp, Released 2011.
3. Giao H, Nguyen TNH, Tran VK, Vo KN, Vo VT, Pham LA. Knowledge and attitude toward COVID-19 among healthcare workers at District 2 Hospital, Ho Chi Minh City. Asian Pac J Trop Med. 2020;13.
4. Zhou M, Tang F, Wang Y, Nie H, Zhang L, You G, Zhang M. Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China. Journal of Hospital Infection. 2020 Apr 9.