Knowledge, Attitude, and Practice of Nurses Toward COVID-19: A Cross-Sectional Study in a Referral Hospital of Indonesia

Abstract

Background: Limited study has been conducted on the Indonesian nurses' knowledge, attitude, and behavior toward Coronavirus disease 2019. We investigated the Knowledge, Attitude, Practice (KAP) of nurses working in the referral hospital toward the COVID-19 disease. **Materials and Methods:** Using a questionnaire on KAP toward COVID-19, a cross-sectional online data collection was conducted in the mid of 2020 to examine the nurses' KAP, perception, and experience toward COVID-19. **Results:** The correct rate of knowledge was 85.60%. No significant difference of all KAP items between the COVID-19 and regular nurses was observed ($P>0.05$). They had positive attitudes regarding the pandemic and good practices for virus transmission prevention. Most nurses were worried that they will be infected by COVID-19 (91.53%). **Conclusions:** The Indonesian nurses have good knowledge, a positive attitude, and good practices regarding the virus, transmission, and prevention. The fact that the majority of nurses feel worried demands further investigations.

Keywords: *Attitude, COVID-19, knowledge, nursing staff*

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Introduction

The COVID-19 pandemic affects various sectors globally. In Indonesia, more than 172,000 infections and more than 7,300 deaths have been reported.[1] The majority of the victims were non-healthcare professionals. However, the Indonesian National Nurse Association recorded that some 70 nurses had passed away by the end of August 2020.[2] The shortage of nurses is already a global burden, and the COVID-19 pandemic makes it even worst.[3] The nurses have a high vulnerability to COVID-19, and therefore, require special attention and protection during this pandemic.[4] Assessing their knowledge attitude and practice toward COVID-19 is significant, not only to identify the gaps for prevention and control but also to predict the outcome of planned behavior.[5] It also serves as one of the indicators of the nurses' readiness in dealing with the virus transmission.

A previous study among the Pakistani Health Care Workers (HCWs) suggests that they had excellent knowledge, positive attitude, and good behavior regarding COVID-19.[6] A majority of Chinese HCWs also has sufficient knowledge and followed correct practices regarding COVID-19.[5] In India, the HCWs have a moderate knowledge of COVID-19 and no statistical difference of knowledge level between medical doctors, nurses, and dental surgeons was observed.[7] The Knowledge, Attitude, and Practice (KAP) study among the Indonesian frontline nurses working with COVID-19 patients is still limited, hence, this study was undertaken.

Materials and Methods

This cross-sectional study was conducted from July to August 2020 in Zainoel Abidin General Hospital, which also served as the referral hospital for COVID-19 treatment in the province of Aceh. During data collection for this study, the hospital had 738 beds and 62 beds had been allocated for the COVID-19 cases. A total of 159 nurses were assigned to work in the COVID-19 wards. This hospital also serves as the main referral hospital for a total population of 5.2 million in the province.

A census that involved a total number of 745 workings in the clinical settings with the patients was invited to participate in the study. However, only 484 responded and

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completed the questionnaire (response rate 64.96%). The nurses working in managerial settings were excluded from the study.

The survey instrument consists of sociodemographic information of the participants and questions on KAP. The sociodemographic information includes the age, gender, latest nursing education level, employment status, duration of working in the hospital, and marital status. The KAP of the nurses regarding COVID-19 was accessed using the modified version of the questionnaire by Zhong *et al*.[8] with additional questions on their perception of COVID-19, the experience of rejection, feeling worried if they will be infected, and sources of information on COVID-19.

The survey instruments were written in the Google Form. The link of the Google Form was distributed to the nurses via the WhatsApp group of hospital nurses. The reminders to fill in the form were also sent via the WhatsApp private message. The completed questionnaires was extracted from the Google Form and exported to a Microsoft Excel program for cleaning and coding. The cleaned data were then imported to the Stata statistical software for further analysis. The categorical data were summarized as proportion and frequency. The numerical data were summarized as means and standard deviation (SD). The association between the categorical variables was tested using the Chi-square test.

Ethical considerations

Due to the implementation of the social distancing policy in Indonesia, online data collection through Google Forms was conducted. The link of the online questionnaire was sent to the phone number—WhatsApp Messenger of each nurse working in the hospital. The hospital and Universitas Syiah Kuala ethical board approved the study (Ethical Approval Number: 096/EA/FK-RSUDZA/2020, Date: 25 June 2020). The participation in this study was voluntary. All the participants gave their consent by clicking the "give my consent to participate in this study" option in the questionnaire.

Results

Sociodemographic characteristics

The majority of the participants were females (72.52%), married (75.41%), and had been working in the hospital for less than 10 years (75.83%). The mean age was 32.64 (SD = 5.92) years old. Much of the age group was below 40 years old (90.50%). The main sources of information regarding COVID-19 were the Internet—social media (94.62%), television (44.80%), and others (below 5.00%). A total of 97 (20.04%) participants of this study were nurses in the COVID-19 team of the hospital. Further statistical analyses confirm that the majority of the nurses selected to be part of the COVID-19 team of the hospital were males, of a younger age, with a non-permanent status of employment, and had worked less than 10 years in the

hospital ($p< 0.05$). The marital status and latest education were not significant ($p> 0.05$). Table 1 summarizes the sociodemographic and the differences of the demographic characteristics between the COVID-19 team and the regular nurses.

Knowledge

Almost all the items of the questions had the correct rate of more than 91%, except for the questions on the symptoms of COVID-19, and knowledge on eating or contacting wild animals that would result in infection by the COVID-19 virus which had 56.20% and 21.07% correct answers, respectively. The overall correct rate of knowledge was 85.60%. Furthermore, no significant difference in the level of knowledge (right vs. wrong answers) of all the items of knowledge between the COVID-19 team and the general nurses was found ($p >0.05$). The details of the proportion of the nurses' knowledge toward COVID-19 are presented in Table 2.

Attitude, practice, and experience

The majority of the nurses agreed that the current COVID-19 pandemic would be finally controlled (88%), and were certain that the Indonesians can win the battle against the COVID-19 virus (70%). On the other hand, most of them (86.36%) also felt anxious about the current COVID-19 pandemic. The vast majority also worried that they (91.53%) and their family (94.21%) will be infected by the COVID-19 virus. The nurses have good practices toward prevention, where the vast majority (98.97%) wear a mask when they go to and from the hospital to home. More than half (60.74%) did not go to crowded places like the market. A small number of rejections by the family (9.09%) and neighbors (12.81%) because of working in the hospital was also found. Further analysis confirmed that the rejection from the family was statistically higher among the COVID-19 team (15.45%) than the regular nurses (7.49%) ($\chi^2 = 5.90$, df = 1, $p = 0.015$). The rejection from the neighbors was also statistically higher among the COVID-19 team (26.80%) than the regular nurses (9.30%) ($\chi^2 = 21.30$, df = 1, $p < 0.0001$).

Discussion

The present study reveals that, overall, the nurses working in this referral hospital, either the COVID-19 nurses or the regular ward nurses, have a good knowledge regarding the COVID-19 infection, symptoms, and transmission. The government and hospital management seem to have provided sufficient information and socialization regarding COVID-19. Concerning the attitude, overall, the nurses also have a positive attitude, where 88% of them believe that the current COVID-19 pandemic will be controlled and 70% assured that the Indonesians can win the battle against COVID-19. The nurses also performed appropriate practices where the majority of them wore a mask whenever they went out (98.97%), and avoided the crowd (60.74%). Furthermore, the vast majority (91.53%) of the

Table 1: Demographic characteristics of the participants (n=484)

Characteristics	Total n (%)	COVID-19 team, n (%)	Regular nurses, n (%)	x^2	df	p
Gender				19.50	1	0.001
Male	133 (27.48)	44 (33.08)	89 (66.92)			
Female	351 (72.52)	53 (15.10)	298 (84.90)			
Age group				6.50	2	0.039
21-30	219 (45.25)	53 (24.20)	166 (75.80)			
31-40	219 (45.25)	40 (18.26)	179 (81.74)			
41 and above	46 (9.50)	4 (8.70)	42 (91.30)			
Education				1.36	1	0.243
Nursing Diploma	279 (57.64)	61 (21.86)	218 (78.14)			
Bachelor of Nursing	205 (42.36)	36 (17.56)	169 (82.44)			
Employment status				9.60	1	0.002
Non-permanent	298 (61.57)	73 (24.50)	225 (75.50)			
Permanent	186 (38.43)	24 (12.90)	162 (87.10)			
Employment duration				7.67	1	0.006
≤10 years	367 (75.83)	84 (22.89)	283 (77.11)			
≥11 years	117 (24.17)	13 (11.11)	104 (88.89)			
Marital Status				1.84	1	0.174
Unmarried	119 (24.59)	29 (24.37)	90 (75.63)			
Married	365 (75.41)	68 (18.63)	297 (81.37)			
Rejection by the family				5.96	1	0.015
Yes	44 (9.09)	15 (34.09)	29 (65.91)			
No	440 (90.91)	82 (18.64)	358 (81.36)			
Rejection by the neighbor				21.30	1	0.0001
Yes	62 (12.81)	26 (41.94)	36 (58.06)			
No	422 (87.19)	71 (16.82)	351 (83.18)			
Are you worried that you will be infected with COVID-19?				10.10	1	0.002
Yes	443 (91.53)	81 (18.28)	362 (81.72)			
No	41 (8.47)	16 (39.02)	25 (60.98)			

Table 2: Participants' knowledge of COVID-19

Questions	True n (%)	False n (%)	Do not know n (%)
The main clinical symptoms of COVID-19 are fever, fatigue, dry cough, and myalgia	441 (91.32)	34 (7.02)	8 (1.65)
Unlike the common cold, stuffy nose, runny nose, and sneezing are less common in persons infected with the COVID-19 virus	272 (56.20)	196 (40.50)	16 (3.31)
There currently is no effective cure for COVID-2019, but early symptomatic and supportive treatment can help most patients recover from the infection	467 (96.49)	10 (2.07)	7 (1.45)
Not all persons with COVID-2019 will develop to severe cases. Only those who are elderly, have chronic illnesses, and are obese are more likely to be severe cases	465 (96.07)	10 (2.07)	9 (1.86)
Eating or contacting wild animals would result in the infection by the COVID-19 virus	271 (55.99)	102 (21.07)	111 (22.93)
Persons with COVID-2019 cannot infect the virus to others when a fever is not present	33 (6.82)	420 (86.78)	31 (6.40)
The COVID-19 virus spreads via respiratory droplets of infected individuals	464 (95.87)	15 (3.10)	5 (1.03)
Ordinary residents can wear general medical masks to prevent the infection by the COVID-19 virus	457 (94.42)	21 (4.34)	6 (1.24)
It is not necessary for children and young adults to take measures to prevent the infection by the COVID-19 virus	22 (4.55)	453 (93.60)	9 (1.86)
To prevent the infection by COVID-19, individuals should avoid going to crowded places such as market or taking public transportation	475 (98.14)	8 (1.65)	1 (0.21)
Isolation and treatment of people who are infected with the COVID-19 virus are effective ways to reduce the spread of the virus	477 (98.55)	4 (0.83)	3 (0.62)
People who have contact with someone infected with the COVID-19 virus should be immediately isolated in a proper place. In general, the observation period is 14 days	476 (98.35)	7 (1.45)	1 (0.21)

nurses were afraid of becoming infected at work, higher than that reported among the Chinese HCWs (85%).[5]

The presence of rejection by family and neighbors is another significant finding in this study. The issue of neighbor

rejection because of hospital work has been reported previously and it is associated with a higher depression rate among the HCWs.[9] The higher rejection rate among the COVID-19 nurses might be explained by the higher perceived fear of transmission. Nevertheless, the issue of rejections, either by family, friend, or neighbor because of working for COVID-19 patients demands further investigations.

There are some limitations to this study. First, it was conducted only in one COVID-19 referral hospital, thus, it could not entirely represent the condition in the other settings of Indonesia. Second, the response rate was low, even after several reminders. Last, the cross-sectional design of this study does not allow us to observe the changes of the nurses' KAP toward the COVID-19 disease at different points in time.

Conclusion

This study reveals that the Indonesian nurses working in a COVID-19 referral hospital have good knowledge, a positive attitude, and good practices regarding the virus, transmission, and prevention. No statistical difference was found in the knowledge regarding COVID-19 between the COVID-19 frontline nurses and the regular nurses. The fact that the majority of nurses feel worried that they could be infected demands further investigations and interventions.

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Conflicts of interest

Nothing to declare.

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