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Assessing knowledge and behavioral pattern of nurses working in wards of four major specialties in Colombo South Teaching Hospital during the COVID-19 outbreak

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ABSTRACT

In the latter part of 2019, a severe respiratory disease was reported in China and was found to be an outbreak of Coronavirus. In March 2020, with the rapid increase of patients in many other countries, World Health Organization (WHO) declared COVID-19 as a pandemic.

As one of the frontline workers providing care to patients with COVID-19, nurses are at risk of developing the illness, if not geared up with appropriate Personal Protective Equipment (PPE). The infected number would rise rapidly if no adequate knowledge on basic preventive measures or no appropriate behavior patterns are adopted by the nurses. A descriptive cross-sectional study was conducted from 1st to 31st December 2020, in Colombo South Teaching Hospital to assess knowledge and the impact of the pandemic on the behavioral pattern of nurses using a self-administered questionnaire. The total number of nurses who responded to the study was 155.

Study indicates that nurses have sufficient knowledge of COVID-19, its contagiousness, transmission, prevention, and educating patients. The measures taken by the administration along with the relevant authorities in the institution during the initial phase of the pandemic were helpful to acquire such knowledge. Comprehensive training on donning and doffing of PPEs and other infection prevention practices is recommended as a Continuous Professional Development program.

Key words: COVID-19, Nurses, Behaviour patterns

INTRODUCTION

In the latter part of 2019, a severe respiratory disease was reported in Wuhan city, China, and had features suggestive of an outbreak which would be a major threat to public health[1]. A new type of Coronavirus (novel coronavirus, nCoV) was identified and isolated on 7th January 2020 by Chinese authorities. All suspected cases identified through retrospective review and active case finding were tested for novel coronavirus and ruled out other respiratory pathogens as the cause[2]. As there was a rapid increase in the number of cases in China and in many other countries in the world, on the 11th of March the WHO declared that COVID-19 has reached a pandemic situation [3].

On the 10th of March, the first Sri Lankan national tested positive for COVID-19[4]. An increased number of COVID-19 cases were reported especially from the Western Province. Initially, patients were managed only at the Infectious Disease Hospital (IDH). In March 2020, a ward of the Colombo South Teaching Hospital (CSTH) was closed after an in-house patient tested positive for the nCoV. Accordingly, measures were taken to strengthen the triage system of CSTH to identify patients suspicious of COVID-19 and to transfer them to Base Hospital Homagama (BHH)[5]. At the same

time, an isolation/respiratory ward was assigned to admit the most likely cases of COVID-19, until the receipt of Polymerase-Chain-Reaction (PCR) test results from the Medical Research Institute (MRI)[6]. On the 29th of April, the Director General of Health Services, Sri Lanka identified BHH as a treating centre[7]. Thereafter, the CSTH was allowed to transfer, only PCR test-positive patients, and the suspicious cases had to be admitted to the isolation/respiratory ward at CSTH.

However, in October 2020, there was pandemonium among the staff of CSTH after a healthcare worker tested positive for COVID-19. He was a member of the Peliyagoda fish market cluster. By the 15th of November 2020, there were 13 staff members inclusive of doctors, nurses, and health assistants who tested positive for Covid-19.

On the 10th of January 2020, WHO published a comprehensive package of online technical guidance for the detection, testing, management, prevention, and control of COVID-19 to protect healthcare providers when caring for patients, and also precautions to be taken when conducting aerosol-generating-procedures[8]

JUSTIFICATION

The growing incidence of COVID-19 continued to cause fear and anxiety, amongst the healthcare providers in CSTH, as the most vulnerable groups were at risk of contracting new virus infection. Like many other healthcare institutions in Sri Lanka, the CSTH also faced unforeseen challenges whilst providing care for patients.

The nurses are one of the frontline workers who provide care to patients and are at risk, if not geared up with appropriate Personal Protective Equipment (PPE). Also, the number infected would rise rapidly, if no adequate knowledge on basic preventive measures or no appropriate behavior patterns have been adopted by the nurses.

This study was conducted to assess the knowledge and the impact of the pandemic on the behavioral pattern of nurses in Colombo South Teaching Hospital, Sri Lanka.

OBJECTIVES

1.To assess the knowledge of nurses in Medical, Surgical, Paediatrics, and Obstetrics & Gynecology wards of CSTH in relation to basic preventive measures of COVID-19

2.To assess the behavior pattern of nurses in Medical, Surgical, Paediatrics, and Obstetrics & Gynecology wards of CSTH during the COVID-19 outbreak

3.To compare the behavior pattern of nurses in Medical, Surgical, Paediatrics, and Obstetrics & Gynecology wards during the pre and post-quarantine period

METHODOLOGY

A descriptive cross-sectional study was carried out from 1st to 31st December 2020 in CSTH. Two hundred nurses were selected

using the purposive sampling technique out of which only 155 responded. The study instrument was a self-administered questionnaire.

RESULTS

Of all the respondents, 64.4% of nurses were less than 39 years old. Out of the respondents, 36.6% had more than 10 years of service experience. Table 1 illustrates that 96.7% of nurses had knowledge on COVID-19 disease and its highly contagious nature. Of all the respondents, 79.4% of nurses stated that the knowledge gained from the training programs conducted at CSTH and from outside sources/training with respect to COVID-19 and its spread, was very useful when handling COVID-19 patients. The knowledge on COVID-19 and its high contagiousness of COVID-19 has improved to 100% among the respondents after their quarantine period.

It was observed that there was a significant difference between more experienced and less experienced nurses on certain domains related to knowledge (knowledge gained from the hospital training, knowledge gained from outside sources & training, awareness of the contagiousness), and on behavioral practices such as home hygienic practices.

When considering the behavior pattern adopted (Table 2), 94.2% of nurses used masks and shields while on duty. About 77.4% of nurses stated that they wear KN95 masks and appropriate PPE while attending aerosol-generating procedures. Almost 96.1% of nurses claimed that they have never taken meals together after the occurrence of

Table 1: Assessment of Nurses' knowledge on COVID-19

		Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
1.	Knowledge on COVID-19 and its high contagiousness (pre-quarantine)	63.1%	33.5%	1.5%	1.9%	-
2.	Knowledge gained from CSTH training on COVID-19, and its spread was useful when handling COVID-19 patients	40%	39.4%	11%	4.7%	4.9%
3.	Knowledge gained from outside sources/training on COVID-19, and its spread was useful when handling COVID-19 patients	44.7%	39.4%	13%	2.6%	-
4.	knowledge on COVID-19 and its highly contagiousness (post-quarantine)	73.3%	26.7%	-	-	-

Table 2: Assessment of behavior patterns of Nurses during COVID-19 pandemic (pre-&-post-quarantine)

		Strongly agree (%)	Agree (%)	Neutral (%)	Disagree (%)	Strongly disagree (%)
1.	Wear surgical-mask and face-shield when on duty	52.3%	41.9%	2.9%	2.9%	_
2.	Wear KN95 mask with appropriate PPE during aerosol-generating-procedures	42.6%	34.8%	6.5%	12.9%	3.2%
3.	Since the occurrence of Brandix-Cluster never take meals in groups	54.2%	41.9%	2.6%	1.3%	_
4.	Washing hands frequently as a habit	80.6%	19.4%	_	_	_
5.	Educate in-patients on COVID-19 and preventive measures	52.3%	39.4%	6.5%	1.8%	_
6.	Hospital training on donning-and-doffing is useful	26.5%	32.5%	24.3%	12.8%	3.9%
7.	Hygienic measures are practiced at home as well	67.1%	32.3%	0.6%	_	_
8.	No fear in handling patients when geared-up with appropriate PPE	57.7%	33.8%	4.5%	_	4%
9.	Wear surgical-mask and face-shield when on duty ((post-quarantine)	66.7%	20%	13.3%	_	_
10.	Wear KN95mask with appropriate PPE during aerosol-generating-procedures (post-quarantine)	60%	6.7%	20%	10%	3.3%
11.	Never take meals in groups (post-quarantine)	86%	14%	_	_	_
12.	Washing hands frequently as a habit (post-quarantine)	93.3%	6.7%	_	_	_

hand washing practices, during both pre-and post-quarantine situations.

DISCUSSION

The objective of this study was to assess the knowledge on COVID-19 and its contagiousness, and the hygienic behavioral practices of nurses that should be adhered to during a rapidly spreading contagious disease of COVID-19. The knowledge and behavioral practices of nurses in pre and post-quarantine periods were also assessed.

The results showed that most of the nurses practice proper hygienic behavioral measures (washing hands frequently as a habit) during duty hours and also when they get back home. They have given up the social practice of having meals in groups due to the outbreak situation. The frequent awareness of all staff to refrain from group meals could be the reason for the above practice. Similar findings were found in a study where nurses showed greater awareness, positive attitudes, optimal prevention, and positive perceptions during the COVID-19 outbreak in Saudi Arabia[9].

The nurses who were on quarantine as a result of close contact did not show any significant difference in their knowledge on COVID-19, its contagiousness, wearing surgical masks and face shields when on duty, having meals in groups, or hand washing as a frequent habit. However, a significant difference was

noted among post-quarantine nurses with respect to wearing KN95 masks and appropriate PPE during aerosol-generating procedures. It can be due to their perceived belief that they possess sufficient immunity against the disease, so they did not contract the disease even after close contact.

The study revealed that nurses are well aware of the COVID-19 infection and its management. They have understood its rapid spread, the symptoms of the disease, and the precautions to be taken by them when handling COVID-19 suspected and infected patients. Only 58.8% of nurses were satisfied with the training from CSTH on donning and doffing PPE. This was expected as only a limited number of nurses had the opportunity to undergo such proper training as it had to be conducted in smaller groups (15-20). The nurses' behavioral patterns related to frequent hand washing, and avoidance of having meals together are commendable.

CONCLUSION

The study reveals that the nurses have sufficient knowledge about COVID-19 disease, its contagiousness, its transmission, and preventive measures to be taken. The knowledge was adequate to educate patients too. The measures taken by the administration, specialists, nursing authorities, public health, and infection control teams in CSTH at the initial phase of the pandemic such as awareness sessions of the disease, preventive measures, provision of appropriate PPEs, appropriate decisions at the regular COVID-19 steering committee meetings were helpful to achieve the above. Comprehensive training on donning and doffing of PPE and other infection prevention and control practices is recommended as a continuous professional development program.

REFERENCES

1. Drosten, C. et al. Identification of a novel coronavirus in patients with severe acute respiratory syndrome. *N. Engl. J. Med*. 348, 1967–1976 (2003).

2. WHO. Emergencies preparedness, response. Disease outbreak news. Available from:https://www.who.int/csr/don/12-january-2020-novel-coronavirus-china/en/ [Accessed 15th November 2020]

3. WHO Regional officer for Europe. WHO announces COVID-19 outbreak a pandemic, Available from: https://www.euro.who.int/en/health-topics/health-emergencies/coronavirus-COVID-19/news/news/2020/3/who-announces-COVID-19-outbreak-a pandemic [Accessed 16th November 2020]

4. Press Trust of India. India Today. Sri Lanka announces first coronavirus case Available from: https://www.indiatoday.in/world/story/sri-lanka-coronavirus-italian- [Accessed 28th November 2020]

5. Staff, Writer. Ward at Kalubowila Teaching

Hospital closed off after the detection of a COVID-19 patient. Available From: https://www.newsfirst.lk/2020/03/30/ward-at-kalubowila-teaching-hospital-closed-off-after-the-detection-of-a-COVID-19-patient/ [Accessed 2nd December 2020]

6. Internal Circular. Guidelines for COVID-19 outbreak management Colombo South Teaching Hospital, Internal Arrangements: Colombo South Teaching Hospital AA/05/2020.

7. Zulfick, Farzan. Homagama Base Hospital added to list of hospitals providing treatment for COVID-19. Available from: https://www.newsfirst.lk/2020/04/29/homagama-base-hospital added-to-list-of-hospital-providing-treatment-for-COVID-19 [Accessed on 4th December 2020]

8. WHO. WHO Timeline - COVID-19. Available from https://www.who.int/news/item/27-04-2020-who-timeline---COVID-19 [Accessed on December 11th 2020]

9. Al-Dossary, R., Alamri, M., Albaqawi, H., Al Hosis, K., Aljeldah, M., Aljohan, M., Aljohani, K., Almadani, N., Alrasheadi, B., Falatah, R. and Almazan, J. (2020). Awareness, Attitudes, Prevention, and Perceptions of COVID-19 Outbreak among Nurses in Saudi Arabia. *International Journal of Environmental Research and Public Health*, 17(21), p.8269.