



Publisher

University of Kufa, Faculty of Nursing

Knowledge of Nurses Toward Covid-19 at Primary Health Care

Mansour A. Falah

Community Nursing Department, Faculty of Nursing, University of Kufa, AL-Najaf, Iraq.

ABSTRACT

Background: Nurses' COVID-19 knowledge in primary health care is vital for managing the pandemic, including prevention, detection, and patient education. As we know, the danger of Covid-19 is not limited to workers in health centers only, but it may develop and spread to all members of society due to the lack of knowledge of health workers about methods of prevention and protection from this disease.

Objectives: This study assesses nurses' COVID-19 knowledge at primary healthcare centers to control the spread of the virus.

Methodology: A descriptive study was conducted on the knowledge of nurses about COVID-19 at PHCs in Al-Najaf city. The study spanned from March to the end of July 2023. A total of 122 samples were collected from nine PHCs in AL-Najaf quarters. using a two-part questionnaire. The first part consisted of demographic information (6 items), and the second part involved scale questions to assess nurses' knowledge (35 items).

Results: The study revealed that more than half of the nurses possess moderate knowledge (53.28%), while less than half demonstrated good knowledge (40.72%). It was found that demographic information does not correlate with nurses' knowledge of COVID-19., with the exception of variations across primary healthcare centers.

Conclusion: The majority of nurses working in health centers have a moderate level of knowledge about COVID-19.

Keywords: Knowledge; Covid-19; nurses; PHCs.

CORRESPONDING AUTHOR: Mansour A. Falah,
Community Nursing Department, Faculty of Nursing,
University of Kufa, AL-Najaf, Iraq.
Email: mansura.alfatiawi@uokufa.edu.iq

INTRODUCTION

The COVID-19 pandemic, caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), has presented unprecedented challenges to global healthcare systems. Primary health care (PHC) settings, often the first point of contact for individuals seeking medical care, play a critical role in managing public health crises. Nurses, as frontline healthcare providers, are integral to the delivery of effective and timely care in these settings. Understanding the knowledge level of nurses regarding COVID-19 is essential to ensure they are

well-equipped to handle the pandemic, implement infection control measures, and educate patients and the community ⁽¹⁾.

Studies have highlighted the crucial role of nurses in the early identification, isolation, and management of COVID-19 cases. Adequate knowledge of the virus, its transmission, symptoms, and preventive measures is vital for nurses to protect themselves and others, reduce the spread of the virus, and provide accurate information to the public. The effectiveness of nurses in these roles is

significantly influenced by their level of knowledge and preparedness (2).

Despite the rapid dissemination of information about COVID-19, there remain gaps in knowledge among healthcare workers, including nurses in PHC settings. This can be attributed to the evolving nature of the virus, misinformation, and the challenges of keeping up with the latest guidelines and protocols. Assessing and addressing these knowledge gaps is critical for improving healthcare outcomes during the pandemic (3).

AIMS OF THE STUDY

This study assesses nurses' COVID-19 knowledge at primary healthcare centers to control the spread of the virus.

METHODOLOGY

Study Design and Setting

Descriptive design study was conducted from first of February 2023 to the end of July 2023. The settings of the study include 122 nurses and study was carried out in Nine primary health care centers in Al-Najaf city.

Sample of the study

probability technique (Cluster sampling) was to select the nurse's worked primary health care centers in Al-Najaf city.

The study instruments

A questionnaire was Adopted to designed from the relevant literature for the Knowledge of nurses toward covid-19. The questionnaire was distributed on nurses to fill it.

Methods of data collection

Data were collected by using interview and the questionnaire techniques. The tool was comprised of two main parts; the first part was concerning socio-demographic characteristic of age, level of education and occupation. The second part was concerning nurse's administrative ' Knowledge of nurses toward covid-19.

Validity And Reliability

• Validity

Content Validity: Ensure that the survey or assessment tool comprehensively covers all aspects of the knowledge about COVID-19 that are relevant to nurses in primary health care settings. This can be achieved by consulting with experts in nursing, infectious diseases, and public health to review the instrument.

• Reliability

Internal Consistency: Measure the consistency of results across items within the test. Cronbach's alpha is commonly used for this purpose. An alpha value of 0.7 or higher is generally considered acceptable.

Data analysis

Descriptive statistical measures (frequency and percentage). Inferential statistical approach of chi-square was used data analysis. The degree of significance is (0.5).

RESULTS

Table (1) A total of 122 nurses were included in the study sample, their demographic data are shown in Table 1, the majority of the study sample is female (62.3%); nurses who live in urban area were (91.8%); while technical nurse were (56.6%);

Table (2) The responses to general knowledge questions regarding Covid-19 are presented in Table1. This shows that the majority of the nurses have (moderate) knowledge regarding Covid-19 including the items: (1,5,13,14,17,20-23,26,27,28-32), the assessment was (good) for the items numbered (2-4, 6-12 ,15, 16, 24, 27, and 33), while for items numbers (19, 34 and 35) their knowledge is (poor). The total knowledge assessment is (moderate).

Table 3 and figure 1 show the percentage of nurses' subgroups according to their overall knowledge assessment about Covid-19, they show about (46.72%) of the nurses have good knowledge, (53.28 %) of them have moderate knowledge; while (0 %) have poor knowledge.

Table (4) However, the association between the overall assessment of nurses' knowledge regarding Covid-19 and their demographic data are shown in Table 4, there is a non-significant difference association ($P>0.05$) between the overall assessment of nurses' knowledge regarding Covid-19 and their demographic data.

DISCUSSION:

Covid-19 is not only causing a health risk to the general population but unquestionably to healthcare workers as they have a high exposure and chances of contracting the Covid-19 (4). Therefore, it is important that the risk factors for contracting Covid-19 are known in order to prevent high occupational transmission amongst HCWs, their family members and community members at large. The importance of assessing the knowledge, of healthcare workers was to confirm that our frontline HCWs are taking the essential precautions to avoid transmission amongst their colleagues (5). thereby ensuring that our healthcare facility has satisfactory healthy staff for efficient operation. To the best of our knowledge, this study is among of first studies in Iraq that assessed the knowledge of the health care worker toward Covid-19.

Knowledge greatly reflects the practice of individuals as it provides a base for good practice (6). The Nurses are the professionals who are in direct contact with the Covid-19 infected patients and they must be fully aware of the associated risks with this infection. In the presented study the correct knowledge response rate was good (46.72%), while (53.28 %) of them have moderate knowledge, this finding was inconsistent with studies conducted in Jordon (40%) (Khader, 2020) which was in line with our study, but studies have shown good knowledge in China (90%) (7). (88%) (8).

The present study demonstrated that most of the respondents showed a positive attitude toward COVID-19. Almost 80–90% of the respondents agreed that infection can be prevented by wearing

masks, washing hands, using sanitizer and soap, restricting travel to infected areas, isolation of infected patients and avoiding touching nose, eyes, and mouth, which was consistent with studies reported from China (7). Another study from China stated the participant agreed with the statements that COVID-19 transmission can be prevented by washing hands with soap frequently, isolation of COVID-19 positive patients and acceptance of isolation after getting COVID-19 (9).

In the table 1 which includes descriptive statistics (frequency and percentage) of the demographic data of nurses, the results showed that the vast majority were females more than males, Also, the majority of ages were between 21-29 years old, Likewise, most of the sample population were urban residents, As for the job title, most of them were technical nurses, And years of experience, the largest percentage was between 1-12 years, Finally, most of the study population was from the Imam Al-Hassan Health Center.

In the table 2 that follows, which includes assessment and mean of scores of nurses' knowledge Covid-19 in primary health care centers, the results showed that the majority of the nurses have (moderate) knowledge regarding Covid-19 including the items: (1,5,13,14,17,20-23,26,27,28-32), On the contrary the assessment was (good) for the items numbered (2-4, 6-12 ,15, 16, 24, 27, and 33), while for items numbers (19, 34 and 35) their knowledge is (poor).

In the table.3 and figure 1 which presents the final study result, includes frequency and percentage of nurses' subgroups according to their knowledge assessment about Covid-19, the results showed that more than half of the sample population had moderate knowledge, while less than half of them had good knowledge, but no sample population had weak knowledge. This result similar in Jordanian (10).

In the table 4, which includes the association between the overall assessment of nurses' knowledge regarding Covid-19 and their demographic

data, the statistical results showed that there is no correlation for (gender, age, residence, years of experience and job title) between the general assessment of nurses' knowledge about Covid-19, except for the primary health care center where there is a significant correlation between the general assessment of nurses' knowledge regarding Covid-19. This result comparable in Australasian ⁽¹¹⁾.

CONCLUSIONS:

This intermediate knowledge of this study may be for the lack of guidance from the Ministry of Health and training workshops, other reason may be the lack of practice with the world's pandemics.

Acknowledgments

I would like to thank everyone who participated and contributed to participating in the research.

Author contribution

There is no contribution.

Conflict of interest

There is no conflict of interest among the authors.

Funding: The author(s) received no financial support for the research, authorship, and/or publication of this article.

Declaration of conflicting interests:

The author(s) declared no potential conflicts of interest with respect to the research, authorship, and/or publication of this article.

REFERENCES:

1. Kang, L., Li, Y., Hu, S., Chen, M., Yang, C., Yang, B. X., ... & Liu, Z. (2020). The mental health of medical workers in Wuhan, China dealing with the 2019 novel coronavirus. *The Lancet Psychiatry*, 7(3), e14. [https://doi.org/10.1016/S2215-0366\(20\)30047-X](https://doi.org/10.1016/S2215-0366(20)30047-X).
2. Olum, R., Chekwech, G., Wekha, G., Nassozi, D. R., & Bongomin, F. (2020). Coronavirus Disease-2019: Knowledge, attitude, and practices of health care workers at Makerere University Teaching Hospitals, Uganda. *Frontiers in Public Health*, 8, 181. <https://doi.org/10.3389/fpubh.2020.00181>.
3. Zhou, M., Tang, F., Wang, Y., Nie, H., Zhang, L., You, G., & Zhang, M. (2020). Knowledge, attitude and practice regarding COVID-19 among health care workers in Henan, China. *Journal of Hospital Infection*, 105(2), 183-187. <https://doi.org/10.1016/j.jhin.2020.04.012>.
4. Mani, N. S., Budak, J. Z., Lan, K. F., Bryson-Cahn, C., Zelikoff, A., Barker, G. E. C., ... & Calfee, C. S. (2020). Prevalence of Coronavirus Disease 2019 Infection and Outcomes Among Symptomatic Healthcare Workers in Seattle, Washington. *Clinical Infectious Diseases. Advance online publication*. <https://doi.org/10.1093/cid/ciaa761>.
5. Sikkema, R. S., Pas, S. D., Nieuwenhuijse, D. F., O'Toole, Á., Verweij, J. J., van der Linden, A., ... & van Kasteren, P. (2020). COVID-19 in health-care workers in three hospitals in the south of the Netherlands: A cross-sectional study. *The Lancet Infectious Diseases*, 20(10).
6. Ajilore, K., Atakiti, I., & Onyenankeya, K. (2017). College students' knowledge, attitudes and adherence to public service announcements on Ebola in Nigeria: Suggestions for improving future Ebola prevention education programmes. *Health Education Journal*, 76(6), 648–660.
7. Zhong, B. L., Luo, W., Li, H. M., Zhang, Q. Q., Liu, X. G., Li, W. T., ... & Liu, X. J. (2020). Knowledge, attitudes, and practices towards COVID-19 among Chinese residents during the rapid rise period of the COVID-19 outbreak: A quick online cross-sectional survey. *International Journal of Biological Sciences*, 16(10), 1745–1752.
8. Wado, Y. D., Austrian, K., Abuya, B. A., Kangwana, B., Maddox, N., & Kabiru, C. W. (2022). Exposure to violence, adverse life events and the mental health of adolescent girls in Nairobi slums. *BMC Women's Health*, 22(1).
9. Fusco, F. M., Pisaturo, M., Iodice, V., Bellopede, R., Tambaro, O., Parrella, G., ... & Iatta, R. (2020). COVID-19 among healthcare workers in a specialist

infectious diseases setting in Naples, Southern Italy: Results of a cross-sectional surveillance study. *Journal of Hospital Infection*, 105(4), 596–600.

10. Khader, Y., Al Nsour, M., Al-Batayneh, O. B., Saadeh, R., Bashier, H., Alfaqih, M., ... & Khasawneh, A. G. (2020). Dentists' Awareness, Perception, and Attitude Regarding COVID-19 and Infection Control: Cross-Sectional Study Among

Jordanian Dentists. *JMIR Public Health and Surveillance*, 6(2), e18798.

11. Loch, C., Kuan, I. B., Elsalem, L., Schwass, D., Brunton, P. A., & Jum'ah, A. (2021). COVID-19 and dental clinical practice: students and clinical staff perceptions of health risks and educational impact. *Journal of Dental Education*, 85(1), 44-52.

TABLES:

Table (1): Descriptive statistics (frequency and percentage) for the demographic data of nurses

Demographic data	Sub-groups	Frequency (N=122)	Percentage
Gender	men	46	37.7
	women	76	62.3
Ages	21-29	46	37.7
	30-38	32	26.2
	39-47	27	22.1
	48-56	13	10.7
	57-66	4	3.3
Residence	Urban	112	91.8
	Rural	10	8.2
Occupational Title	Technical nurse	69	56.6
	nurse	53	43.4
Years of experience	1-12	68	55.7
	13-24	32	26.2
	25-36	22	18.0
Primary health care centers	Wafaa	12	9.8
	Mishkhab	15	12.3
	Hani bin Orwa	11	9.0
	Kinda	11	9.0
	Al-mutanabi	10	8.2
	Al-Imam AL-Hasan	22	18.0
	Al-Jamiaa	16	13.1
	Muslim bin Akeel	14	11.5
	Al-Haydariya	11	9.0

Table (2): Assessment and mean of scores of nurses' knowledge Covid-19 in primary health care centers

No.	Items	MS	SD	Assess.
1	Can the Corona virus be transmitted in the air?	2.07	0.82	Moderate
2	Can the Corona virus be transmitted through droplets?	2.98	0.20	Good
3	Can the Corona virus be transmitted by touch?	2.84	0.43	Good
4	Can the Corona virus be transmitted during a blood transfusion?	2.39	0.78	Good
5	Can humans catch the new coronavirus from an animal source?	2.17	0.71	Moderate
6	Can coronaviruses be transmitted from one person to another?	2.68	0.56	Good
7	Is there a vaccine for the new corona virus?	2.48	0.75	Good
8	Is there a cure for a new corona virus?	1.66	0.80	Good
9	Can the virus infect a person twice?	2.86	0.43	Good
10	Are health personnel more at risk of infection with the new Corona virus?	2.98	0.16	Good
11	Do you recommend always wearing masks to prevent the spread of infection?	2.84	0.47	Good
12	Is the Corona virus more dangerous to people with chronic diseases?	2.91	0.34	Good
13	Can COVID-19 spread mainly through close person-to-person contact?	2.90	0.35	Moderate
14	Is it safe to seek care for other medical conditions during the time of the injury?	2.59	0.66	Moderate
15	Should blood donation centers conduct routine checks to ensure that they are not infected with the Corona virus?	2.74	0.59	Good
16	Does the emerging corona virus lead to acute pneumonia?	2.90	0.38	Good
17	Do you think bats are the source of the emerging corona virus?	2.07	0.76	Moderate
18	After this epidemic, do you continue to take precautions (preventive measures)?	2.66	0.61	Good
19	Do antibiotics have an effect in treating complications of the Corona virus?	1.59	0.75	Poor
20	Is a swab better than a scan in diagnosing the Corona virus?	1.99	0.89	Moderate
21	Does age affect the incubation period of the virus?	2.33	0.83	Moderate
22	Is quarantine better than home quarantine?	1.86	0.82	Moderate
23	Is there a difference in the death rate of infected people between women and men?	2.17	0.85	Moderate
24	Who has recovered from the Corona virus, is it possible to get infected again?	2.87	0.34	Good
25	Is there a difference in the severity of virus symptoms between women and men?	1.88	0.84	Moderate
26	Does rinsing the nose with saline reduce infection with the Corona virus?	2.24	0.75	Moderate
27	Is air hand dryer effective in getting rid of corona?	2.53	0.66	Good
28	Does sterilization with ultraviolet rays kill the virus?	2.10	0.73	Moderate
29	Can a thermal scanner identify infected people even though they have no symptoms?	2.20	0.74	Moderate
30	Does spraying the body with alcohol or chlorine help eliminate the Corona virus?	2.05	0.79	Moderate
31	Do anti-pneumococcal vaccines provide protection from the Corona virus?	2.16	0.76	Moderate
32	Does eating garlic prevent infection with corona virus?	2.16	0.72	Moderate
33	Should the COVID-19 vaccine be taken even if a person has previously had it?	2.55	0.71	Good
34	Is it possible to stop following safety measures after taking the Covid-19 vaccine?	1.31	0.66	Poor
35	Can pregnant and breastfeeding women receive the COVID-19 vaccine?	1.66	0.85	Poor
Total Knowledge assessment		2.33	0.64	Moderate

MS: Mean of Scores; SD: Standard Deviation; Poor : MS = 1-1.66 ; Moderate : MS =1.67-2.33 ; Good : MS≥2.34.

Table (3): Frequency and percentage of nurses' subgroups according to their knowledge assessment about Covid-19

Nurses' subgroups	Poor	Moderate	Good
Frequency	0	65	57
Percentage	0	53.28	46.72

Table (4): Association between the overall Assessment of Nurses' Knowledge Regarding Covid-19 and their demographic data

Demographic data	Chi Square	df	P value	Sig.
Gender	1.73	1	0.18	NS
Age / Years	1.13	4	0.88	NS
Residence	0.2	1	0.65	NS
Years of Experience	0.74	2	0.73	NS
Occupational Title	2.41	1	0.12	NS
Primary Health Care Center	21.93	8	0.005	HS