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## Nurses' experiences during the COVID-19 pandemic in Duhok City

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### ABSTRACT

**Background and Objectives:** Covid-19 is one of the health issues that has had a major impact on health services all around the world. It was declared a pandemic on March 11, 2021. The nurses were on the frontline of the fight against the Covid-19, which had physical, psychological, social, and economic effects on health and health outcomes. It is crucial that nurses' experiences during the pandemic are identified. This study aimed to explore nurses' experiences, knowledge, and practices regarding the pandemic.

**Methods:** A cross-sectional study was conducted among nurses in the Duhok City in the Kurdistan Region of Iraq. The online survey was distributed to nurses using a structured questionnaire. The number of nurses who participated in the study was 110. The data collection was conducted from 10th May to 10th August 2021. Data analysis was conducted using SPSS statistical software (version 23.0). Descriptive statistical analysis was conducted using frequency, percentage, mean, and standard deviation.

**Results:** The study revealed that the mean age of nurses was 30 years with a standard deviation of 7 years. The highest percentage of the nurses (44.5) were a Bachelor's degree holders. The nurses had concerns regarding their employment status, workload, and threatened to leave their job. Having sufficient personal protective devices and work protocols to help decrease the risk of infection and stress and anxiety were important issues. Nurses need more training and support systems from leaders and employers to go forward and work safely and comfortably.

**Conclusions:** The study highlighted essential points regarding the nurses' experiences during the pandemic such as the impact of workload, shortage in staffing, threatened termination of employment, and having to do non-nursing activities or tasks. It was clear that the nurse managers have a significant role in providing efficient support to nurses. Creating a safe work environment and essential guidelines is crucial for promoting a better quality of care during the pandemic.

**Keywords:** Covid-19; Nursing Care; Pandemic

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### INTRODUCTION

The Covid-19 outbreak was reported for the first time in Wuhan, China, in December 2019[1]. It quickly became an international health crisis impacting physical, psychological, social, and economical

status of people around the world [2, 3]. The virus is transmitted from person to person through respiratory droplets, un-sanitary and highly crowded places, and enclosed environments[1]. The rapid

spread of Covid-19 resulted in a major risk to public health and economic systems globally. It changed the daily life of people significantly [4], becoming a public health emergency with a high rate of deaths, hospitalizations, and socio-economic disruption. The lack of hospital capacity, insufficient numbers of personal protective equipment, and insufficient ventilators were significant issues among the affected countries [5]. The pandemic impacted all health care providers, but especially nurses [6]. Nurses are a crucial part of the health care system in responding to health crises, pandemics, and epidemics. The nurses were in the frontline to fight the Covid-19 pandemic [7]. Nurses provide direct patient care and play a key role to reduce the risk of exposure to infectious disease [8]. However, they are vulnerable to being infected because of their direct contact with the infected patients and their family members [9]. Nurses' knowledge of disease influences their attitudes and practices as any incorrect attitudes or practices increase the risk of disease transmission [6]. As a result of the pandemic, the health care workers get exhausted, impacted financially, and psychologically, often suffering from uncertainty, fear, anxiety, and dread, which have been reported globally [10]. Furthermore, the health care system increases the demand for manpower and resources for prevention and treatment requirements [1]. Nurses are the main members of a health care system who must control, treat, and prevent the spread of infectious diseases. Moreover, they are responsible for providing care, and a variety of procedures in responding to patient needs that enhance the health of individuals as a result of the Covid-19 virus [1]. Despite the professional obligation of nurses toward their patients and the community during the pandemic, their concerns regarding their work and the risk of being infected or transmitting

the disease to family members and friends increased significantly [8]. Therefore, this study was conducted to identify nurses' experience of the pandemic and to understand and identify the implications of the pandemic on their knowledge, access to personal protective equipment, nursing care and employment status. The purpose of this study was to explore nurses' experiences during the pandemic and identify its impact on themselves and patient outcomes.

## METHODS

The cross-sectional study design was conducted among nurses at teaching hospitals in Duhok City. A total of 300 nurses were invited to participate in this study. The survey was distributed through an online link. The inclusion criteria encompassed all male and female nurses with different degrees in a nursing specialty, have one year and more of experience, and worked in different units of hospitals. The nurses who had less than one year of experience and worked at out-patient clinics were excluded from the study. The study was undertaken between May and August 2021 at the teaching hospitals in Duhok City in the Kurdistan Region of Iraq. After obtaining approval from the Scientific Committee of the College of Nursing of University of Duhok, the survey link was sent through emails and Viber groups to the nurses. The informed consent was obtained from the nurses. Nurses who agreed to participate in the study were asked to click on the survey link and respond to the survey. A total of 110 nurses participated in the study. The sample size was estimated based on Slovin's Formula which is a random sampling technique formula to measure sampling size. The formula is:  $n = N / (1 + Ne^2)$ .

n = no. of samples

N = total population

e = error margin / margin of error (0.05)  
 In our study, the total number of nurses at three public hospitals is 556.  
 $556 / (1 + 556 * 0.5^2) = 233$  nurses. The response rate in this study was estimated at  $233/556*100= 20\%$ . The questionnaire was adapted and modified for the study purpose[3]. The modified survey consisted of two parts: Part I was related to the participants' demographics and Part II involved the survey items. Part II contained three subscales: the nurses' professional experiences subscale included seven items, the nurses' knowledge of Covid-19 pandemic contained six items, and the nurses' clinical practice subscale included six items. The response to all items was done by either yes or no. Data analysis was conducted using SPSS version 23. Descriptive statistics were applied to analyse the demographics, nurses' experience, knowledge, and practices such as the frequency, percentage, mean, and standard deviation.

**RESULTS**

The mean age of nurses was 30 years with  $\pm 7$  SD. The percentage of female nurses was 41.8%, while the percentage of male nurses was 58.2%. Regarding the level of education of the participants, less than 10% of nurses had post-graduate degrees, almost half of the nurses had Bachelors' degrees (44.5%). The percentage of nurses who have graduated from the nursing institute was 42.7%, and only five nurses were graduated from nursing high school. Results of the present study show that more than half of the nurses were married 51.8%, and 47.3% were single. Regarding the unit of work 42.7 % of the nurses work in the intensive care unit, the number of participants who worked in the medical wards was 30%, and only three nurses were working in the emergency room. The calculated mean of experience years was 7

years with an SD of 6. Results of Table 1 show the mean score of weekly working hours that was 38 hours before the pandemic decreasing to 30 hours during the pandemic.

**Table 1: Nurses Demographics**

Demographics		F	(%)
Age Mean $\pm$ SD = 30 $\pm$ 7		110	(100)
Gender	Male	64	(58.2)
	Female	46	(41.8)
Level of Education	Post- Graduate	9	(8.20)
	Bachelor-Degree	49	(44.5)
	Nursing Institute	47	(42.7)
	School of Nursing	5	(4.5)
Marital Status	Married	57	(51.8)
	Single	52	(47.3)
	Divorced	1	(0.9)
	Critical care units (ICU,	47	(42.7)
Area of Work (Unit)	CCU, HDU) Surgical	21	(19.1)
	Units Medical	33	(30)
	Units Maternal and Pediatric Units	6	(5.5)
	Emergency Room	3	(2.7)
	Total	110	(100)

Mean  $\pm$ SD

Years of Experience

7 $\pm$ 6

Weekly working hours before covid pandemic

38 $\pm$ 28

Weekly working hours during covid pandemic

30 $\pm$ 25

Table 2 shows that majority of nurses responded with yes for the experience items. The highest percent of the nurses (77.3%) declared the issue with the workload, understaffing, and lack of resources. The percentage of nurses who never had experience with chronic infectious diseases was

42.7%, and 53.6 % of the nurses experienced an increase in their employment hours during the pandemic. A high percentage of the nurses (59.1%) threatened to terminate their job and 47.3% were thinking about leaving their job. In addition, 70.9% of the nurses stated that they did non-nursing duties.

**Table 2:** Nurses’ Experiences after the Covid-19 pandemic

Nurses’ Experiences	Yes		No	
	F	(%)	F	(%)
1. Experience with Infectious illnesses (e.g., Hepatitis virus)	63	(57.3)	47	(42.7)
2. Increased hours of employment per week because of the pandemic	59	(53.6)	51	(46.4)
3. Threatened termination of employment because of the pandemic	65	(59.1)	45	(40.9)
4. Did you face workload, Understaffing and lack of resources	85	(77.3)	25	(22.7)
5. Reductions in nursing role (fewer tasks to do).	60	(54.5)	50	(45.5)
6. Additional tasks within nursing role doing non-nursing duties.	78	(70.9)	32	(29.1)
7. Did you think about leaving your job because of the pandemic?	52	(47.3)	58	(52.7)

Table 3 shows nurses’ knowledge regarding Covid-19. Most of the nurses (91.8%) were knowledgeable regarding protecting themselves and their patients from the infection. The study results demonstrate that 90.9% of the nurses understand the risk of

Covid-19 on health care workers including nurses. Furthermore, 84.5% of the nurses knew that they were working in a high-risk environment. More than half of the participants (60.9%) stated that they got support from their employers.

**Table 3:** Nurses’ Knowledge Regarding Covid-19 pandemic

Nurses’ Knowledge	Yes		No	
	F	(%)	F	(%)
1. At present, I have sufficient knowledge of Covid-19	77	(70)	33	(30)
2. Understand the risks of Covid-19 on patients and healthcare workers	100	(90.9)	10	(9.1)
3. I understand how to protect myself during the pandemic	101	(91.8)	9	(8.2)
4. I understand how to protect my patients during the pandemic	101	(91.8)	9	(8.2)
5. I feel that my work put my health at risk during the pandemic.	93	(84.5)	17	(15.5)
6. I feel well supported in my clinical role by my employer.	67	(60.9)	43	(39.1)

Table 4 reveals that 88.2% of the nurses knew the importance of wearing personal protective equipment during work. Also, 70% of the nurses understood the importance of social distancing and wearing

personal protective equipment. Moreover, the percentage of nurses who never got trained to work for Covid-19 patients was 50.9%. The results show that 77.3 of nurses followed infection protection measures.

**Table 4:** Nurses’ Practice Regarding Covid-19 pandemic

Nurses’ Practices	Yes		No	
	F	(%)	F	(%)
1. Have you been trained to work for Covid-19 patients?	54	(49.1)	56	(50.9)
2. Have you followed social distancing?	77	(70)	33	(30)
3. Have you been wearing a mask and gloves during the hospital practice?	97	(88.2)	13	(11.8)
4. Do you regularly follow infection protection measures?	85	(77.3)	25	(22.7)
5. I have sufficient personal protective equipment in my workplace	69	(62.7)	41	(37.3)
6. Do you have guidelines about the use of personal protective equipment?	65	(59.1)	45	(40.9)

## DISCUSSION

The Covid-19 pandemic affected the Kurdistan Region of Iraq with a large number of suspected and confirmed cases and the transmission of the virus to the health care providers [11]. Providing health care services during the pandemic had significant impact on nurses [12]. They were aware of the danger of working in an environment that endangers their lives, family members, friends, and colleagues. Based on our results, nurses’ working hours increased during the pandemic. It might be related to the shortages in nurses at Duhok hospitals and the admission of a high numbers of Covid-19 patients to the hospitals for treatment. In addition, there was an increase in nurses’ time off work because of the home quarantine when they were infected or had direct contact with infected people [13]. In comparison, a study that was conducted in Australia showed that the working hours of nurses decreased during the pandemic[3]. This shortage was connected to the threatened termination of employment, and it was identified by the nurses in this study. It might be there-sult of the stress of the pandemic and

fear of getting infected. Also, nurses were concerned about doing additional tasks that were not related to their profession. This had a negative impact on their work and made them think about leaving their job. Being threatened to lose or actual loss of employment during the pandemic was identified [3].It was clear that the nurses experienced a more stressful working environment because of increase in workload, lack of resources, nursing shortages, non-nursing tasks, and burnout. The virus adversely affected health care providers’ job commitment and made them more anxious [14]. Also, the anxiety and stress of the pandemic resulted in work dropout [14, 15]. It impacted nurses’ work and their thoughts to quit their job because of the pandemic. While, in another study, nurses did not intend to leave their job because of the pandemic[16]. Protecting nurses who are in high-risk areas requires local, national, and international strategies to provide sufficient protective devices [11, 13]. Moreover, having information and sufficient understanding related to the pandemic risk and using protective measures

is required to protect them and mitigate psychological distress [16, 17]. Nurses sacrificed their lives during the pandemic to care for patients [5]. However, in our study, some nurses were not satisfied with their employer's support despite their hard work in high-risk environment. To alleviate the challenges related to working in high-risk settings, nurses need adequate support from hospital leaders and managers to continue their work and reduce that burden [18]. Support systems and healthy work environments enhance the quality of care and commitment to work during critical times [19]. To ensure that the nurses are protected and able to provide nursing care, nurses must receive mental health support [3]. An unsafe environment during the pandemic increases turnover and retention issues [20]. The support system is important to be considered by the nursing leaders through the pandemic outbreak, especially for younger or less experienced nurses [12, 21, 22]. To help those nurses who provided direct care for suspected or confirmed cases of Covid-19, it is suggested to give them formal leave days [21]. Having guidelines regarding the safety measures is helpful for the nurses to feel more comfortable and supported in their work. The nurse leaders should ensure that the nurses' work is based on a guidelines and consistent with protocols to provide health care efficiently. Nurses require governments, policymakers, and nursing groups to engage in supporting nurses during the pandemic [8]. Because increased risk of nurses being infected, it is important to develop specific protocols to reduce the risk of infection and interactions with Covid-19 patients [9]. Concerning nurses' health, the use of strict measures such as the practice of good personal hygiene, social distancing, using personal protective equipment appropriately involved wearing suits, masks, gloves, eye, and foot protective

barriers, and following infection control measures were factors considered by the nurses through their practices. The shortage of protective equipment and resources impacts negatively on the quality of care [18]. Moreover, nurses' education and training through the pandemic regarding protective measures are helpful to decrease infection transmission [9]. As it shows, the lack of nurses' experience about the pandemic increases the risk of infection [14]. Helping nurses to follow reliable sources for the care of a Covid-19 patients, for example, assessment of their condition, and possibilities to deliver them special nursing care are important. Furthermore, nurses need to participate in educational programs, and attend lessons that can greatly contribute to the development of their information and skills [7]. Working together as a team in protecting each other during the pandemic and appreciating their colleagues and sharing their experiences is valuable [8].

## CONCLUSION

The study concluded that the nurses gained valuable experience during the pandemic. They followed the infection control and social distancing measures to protect themselves from infection. To assist nurses and help them bear the difficulties they face while working, it is crucial to consider their protection through providing sufficient protective equipment. Nurses need leadership support to go forward and overcome the complexity of putting their health at risk during the pandemic. The majority of nurses were happy with their leaders' support.

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**CONFLICT OF INTEREST**

The authors declare that they have no conflict of interest.

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