

Impact of the COVID-19 Pandemic on Nurses Mental Health Status: A Descriptive Study

COVID-19 Pandemisinin Hemşirelerin Ruh Sağlığı Durumuna Etkisi: Tanımlayıcı Bir Çalışma

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ABSTRACT Objective: To assess the impact of the pandemic on mental health status for nurses in Iraq. The coronavirus disease-2019 (COVID-19) pandemic is a major health crisis that has changed the life of millions globally. Coronaviruses are viruses' group that can contract animals and humans and the cause of severe acute respiratory syndrome, Middle East respiratory syndrome, and COVID-19. Nurses are the primary service providers in the healthcare, nurses who are in close contact with infectious patients need to get their mental health checked and supervised on a regular basis, particularly with regard to stress, anxiety and suicidal ideation, so that they can provide optimal quality of life and healthy mental health to have good care for patients. **Material and Methods:** A total of sample study (1,000) nurses in Iraq completed an online questionnaire between March to May 2021. Psychological impact was assess using the Depression Anxiety Stress Scale-21. **Results:** The study revealed impact COVID-19 on mental health status (anxiety stress) and no impact COVID-19 on mental health status (depression) for nurses was ($p=0.040$, $p=0.045$ respectively). **Conclusion:** The impact COVID-19 on mental health status for nurses. **Recommendation:** Protecting the nursing staff from chronic stress, anxiety and depression, which constitutes a psychological burden on health during the outbreak of the COVID-19 pandemic, by clarifying the disease and how to prevent it, as well as providing the personal protective equipment to decrease stress, anxiety and depression during the pandemic.

Keywords: COVID-19 pandemic; nurses; mental health status; pandemic; psychological effects

ÖZET Amaç: Bu çalışmanın amacı, pandeminin Irak'taki hemşirelerin ruh sağlığı durumu üzerindeki etkisini değerlendirmek. Koronavirüs hastalığı-2019 [coronavirus disease-2019 (COVID-19)] pandemisi, dünya çapında milyonlarca insanın hayatını değiştiren büyük bir sağlık krizidir. Koronavirüsler, hayvanlara ve insanlara bulaşabilen ve şiddetli akut solunum sendromu, Orta Doğu solunum sendromu ve COVID-19'a neden olabilen virüs grubudur. Hemşireler, sağlık hizmetlerinde birincil hizmet sağlayıcılarıdır. Enfeksiyöz hastalarla yakın temasta olan hemşirelerin ruh sağlıklarını, özellikle stres, kaygı ve intihar düşüncesi açısından düzenli olarak kontrol ettirmeleri ve gözetim altında tutmaları gerekir. Böylece hastalara iyi bakım sağlamak için optimum yaşam kalitesi ve ruh sağlığına sahip olabilirler. **Gereç ve Yöntemler:** Irak'taki toplam örnek çalışma (1.000) hemşire, Mart-Mayıs 2021 arasında çevrim içi bir anket doldurdu. Psikolojik etki, Depresyon Kaygısı Stres Ölçeği-21 kullanılarak değerlendirildi. **Bulgular:** Çalışma, COVID-19'un ruh sağlığı durumu üzerindeki etkisini (anksiyete stresi) ve COVID-19'un hemşireler için ruh sağlığı durumu (depresyon) üzerinde hiçbir etkisi olmadığını ortaya koydu (sırasıyla $p=0,040$, $p=0,045$). **Sonuç:** COVID-19'un hemşirelerin ruh sağlığı durumu üzerindeki etkisi. **Öneri:** COVID-19 pandemisinin patlak vermesi sırasında sağlık üzerinde psikolojik bir yük oluşturan kronik stres, anksiyete ve depresyondan, hastalığın ve nasıl önenebileceğinin aydınlatılarak hemşirelerin korunması ve hastalara kişisel koruyucu donanımların sağlanması. Pandemi sırasında stres, kaygı ve depresyonu azaltır.

Anahtar Kelimeler: COVID-19 pandemisi; hemşire; ruh sağlığı durumu; pandemi; psikolojik etkiler

Coronaviruses are viruses group that can contract animals and humans and the cause of severe acute respiratory syndrome (SARS), Middle East respiratory syndrome (MERS), and coronavirus disease-2019 (COVID-19).¹ Despite of the decrease mortality

rate of that as 2%, the COVID-19 virus has a very high transmission rate and a higher mortality rate more than both SARS and MERS.² The unmatched pandemic has drove many countries to announce it as a common health emergency with the application of

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far-reaching measures to decrease its spread including travel limitation, emergency response techniques, and even complete country lockdowns.¹ The Iraq on record first COVID-19 cases on February 24, 2020, in Governorate of Najaf, the country has already been facing a combination of challenges and emergency.³ In this regard, to decrease the rate of spread, the government of Iraq in March 2020 wanted all people members to stay put on residence, except essential needs. Because fear, anxiety and unsureness of the spread of infections, publics faced other defy that could affect their psychological and mental health and well-being as well as restriction them in home, lifestyle changes, living status and jobs, closed of schools and university.⁴ The World Health Organization (WHO) defines mental health as a state of well-being in which the person knows his or her own abilities, can handle normal life pressures, work productively and efficiently, and is able to contribute to his or her society.⁵ Thus, in the sense of its own value system, mental wellbeing gives an individual the opportunity to enjoy life, to identify a balance between activities, everyday living and psychological adjustment efforts.⁶ Mental wellbeing, according to the WHO, encompasses subjective well-being, a sense of self-efficacy, autonomy, competence, and intergenerational dependency, self-realization of intellectual and emotional capacity, among others.⁷ Mental health status disorder is any condition that affects the feelings, perceptions or actions of individuals that does not adhere to their cultural values and personalities and has a detrimental impact on their lives or the lives of their families.⁸ The unpredictable and rapid nature of the outbreak and the virus's infectious capacity would eventually lead to anxiety, stress, and other symptoms of mental health among individuals. Indeed, fear has been reported of contacting individuals who may be infected with COVID-19.⁹ The vicious pandemic and rapid spread, the advent of COVID-19 has heightened worldwide concerns resulting in mental health issues, high levels of anxiety, stress and depression have already been observed in the general population, and in some cases even stigma and discrimination.¹⁰ Disease of any type has a major effect on mental health, either non-communicable or communicable. Based

on the spread of the epidemic, as today as COVID-19 is in control of the whole world and countries such as the China, US, France and Italy etc. Are helpless for the face of this pandemic crisis.¹¹ Emotional pain and anxiety may be triggered by either the COVID-19 epidemic or other public health incidents.¹² COVID-19-related mortality and mortality rates, anxiety of taking the virus home to family members, and the reality of losing health workers to the sickness. These variables elevated health care workers' (HCWs) psychological burden to levels they have never experienced before.¹² The change in working hours, the inability to see family and friends, anxiety of spreading the virus to relatives, unhealthy working environments in resource-constrained places, over-enthusiastic media reporting and projection of healthcare staff as COVID-19 warriors, and paradoxical social stigma all lead to the emergence of different mental problems.¹¹ Healthcare professionals faced this new virus, they have faced its potential impact on their psychological health, including depressive symptoms, fear, insomnia, and grief, as well as the emergence of post-traumatic stress disorder.^{12,13} Evidence from past report indicates that this psychological impact influences the long- and short psychological health of healthcare professionals.¹⁴ In the other hand, the workload of the nurse is high, the COVID-19 pandemic has had a severe effect on HCWs all over the world.^{9,15} Nurses play important role in providing health services by paying close attention to health and environmental quality, educating the staff, maintaining the health system and enhance the quality of life of patients. Nevertheless, challenges such as lack of staff numbers, stress and heavy workloads are challenges of providing nurses' care to patients.^{4,6}

MATERIAL AND METHODS

RESEARCH DESIGN

A Descriptive-Cross-Sectional Online Study Design is Use in This Quantitative Research

Using the technique in the assessment to impact mental health status and quality of life among nurses in Iraq through the COVID-19 pandemic.

Research Setting and Participants

The research was carried out on all levels of nurses who work at the hospitals within the Iraqi Ministry of Health in all Iraqi governorates. A non-probability sample of 1,000 nurses from south to north in Iraq. The sample size was calculated using the Stephen Thompson equation. The criteria of the study sample: the nurses working in the ministry of health. Excluding nurses working outside the nursing wards (who do not provide direct nursing care to the patient and have administrative responsibilities), the study was carried out in accordance with the principles of the Declaration of Helsinki.

Approves the Study

Formal administrative approvals to perform the study were obtained prior to data collection; the official agreement was obtained from the Department of Mental Health Nursing after the presentation of the project, then permission from the University of Babylon/College of Nursing/Research Ethics Committee to conduct the study, the reference number of the ethical approval 16, ethical date February 15, 2021. Informed consent "approval was obtained by the participants before the questionnaire began".

DATA COLLECTION

Data collection is selected by the snowball sampling methods. This is done by sending the Google Form link to nurses identified by the researcher to fill out the questionnaire and then the participants send the link to nurses identified by them for the purpose of participating in the questionnaire, also known as chain-referral sampling, is a non-probability sampling technique in which the samples have difficult characteristics. This is a technique for recruiting samples for a research project in existing individuals refer new subjects. Set in 17th March 2021 to 17th May 2021. By-using Google samples forms online to self-reported questionnaire. One of the tools that was used to build the questionnaire to measure impact COVID-19 pandemic on mental health among nurses in Iraq. The researcher depended also on Depression, Anxiety Stress Scale-21 (DASS-21) the Arabic version.^{16,17} The following details of each scale used as follow: part one: sociodemographic variables such as (age, education level,

years of work in ministry of health and workplace in the health institution). Part two: DASS-21 questionnaire, in this section, 21 questions. Mental health status levels was measured using the DASS-21 and calculations of scores were based on the stander scale and divided into: depression subscale: it consist 7 items (3, 5, 10, 13, 6, 17, 21) and anxiety subscale: it consist 7 items (2, 4, 7, 9, 15, 19, 20) and stress subscale: it consist 7 items (1, 6, 8, 11, 12, 14, 18), using 4 levels Likert rating scale. Cronbach's alpha value=0.91.

DATA ANALYSIS

The researchers are used descriptive statistics to describe the results of data and determine the achievements of the study goals or not by using computer programs [SPSS v.25 (version 25, IBM SPSS Statistics English, USA) and Microsoft Office Excel (2019)] to reveal the results.

RESULTS

Table 1 shows that the higher present (61.9%) of the sample were from age group (20-29) years, regarding education level (41.3%) of the sample were bachelor's degree, regarding years of work in ministry of health (36.8%) of them have (7-12) year work in ministry of health.

Table 2 shows there is significant relationship between COVID-19 and stress and anxiety levels. While there is non-significant relationship between COVID-19 and depression level.

Table 3 show that there is significant relationship between depression level with age, education level, years of work in ministry of health at $p \leq 0.05$. And show that there is significant relationship between anxiety level with age, education level and years of work in ministry of health at $p \leq 0.05$. And show that there is significant relationship between stress level with age, education level and years of work in ministry of health at $p \leq 0.05$.

DISCUSSION

THE DEMOGRAPHIC DATA OF THE STUDY SAMPLE TABLE 1

According to the age the result, indicate that (61.9%) of the sample were from the age group (20-29) year,

TABLE 1: Distribution of the sample according to socio-demographic variables.

Variable	Categories	Frequency	Percent
Age	20-29	619	61.9
	30-39	261	26.1
	40-49	97	9.7
	50-59	23	2.3
	Total	1,000	100.0
Education level	Secondary degree	140	14.0
	Diploma degree	339	33.9
	Bachelor's degree	413	41.3
	Post graduate	108	10.8
	Total	1,000	100.0
Years of work in ministry of health	1-6	109	10.9
	7-12	368	36.8
	13-18	221	22.1
	19-24	144	14.4
	25-30	114	11.4
	31-36	44	4.4
Total	1,000	100.0	

in recent years, a large number of nursing colleges have been opened in all governorates of Iraq due to the shortage of nurses in hospitals, so we found this age group (20-29) years more than other ages. And as our research reached this result, there are other researchers who found similar results in their research such as Khanal et al. the found that (68%) of the study sample were age group (20-29) years and Elhadi et al. the found that (66%) of the study sample were age group (20-29) years.^{11,18}

About education level, the findings of the study refer that there is relationship of significant among

depression levels and the education level for nurses at the probability value (0.047). Because of the modernity of nursing colleges in Iraq, a high percentage of bachelor's degrees appeared, and this linked to the lack of experience and expertise in facing pandemic lead to increase depression levels. And as our research reached this result, there are other researchers who found similar results in their research such as Chowdhury et al. the found the study sample were significant relationship between depression level and education levels for nurses at the probability value (0.030) and Xing et al. the found the study sample were significant relationship between depression levels and education level for nurses at the probability value (0.01).^{19,20}

About years of work in ministry of health, the study found that (36.8%) of the sample study of work duration in ministry of health between (7-12) year. Because of the expansion of recruitment in the nursing profession after the change of the system in Iraq and the increase in the demand for the profession. And as our research reached this result, there are other researchers who found similar results in their research such as Elhadi et al. the found that (26%) of the study sample were work duration in ministry of health between (7-12) year and Abu-Snieneh, the found that (31%) of the study sample were work duration in ministry of health between (7-12) year.^{18,21}

Concerning workplace in the health institution, the study found that (58.1%) of the nurse's workplace in other places such as surgical, children and women wards. Because of the large sample size, and the

TABLE 2: Regression analysis for the impact of COVID-19 on mental health status (depression, anxiety, stress).

Variable	Model	Squares sum	df	Mean square	F	p value	Significant
Depression	Regression	12.258	3	4.086	2.055	0.105	N.S.
	Residual	1979.861	996	1.988			
	Total	1992.119	999				
Anxiety	Regression	17.872	3	5.957	2.788	0.040	S
	Residual	2127.984	996	2.137			
	Total	2145.856	999				
Stress	Regression	20.381	3	6.794	2.685	0.045	S.
	Residual	2519.810	996	2.530			
	Total	2540.191	999				

TABLE 3: One-way ANOVA relationship between mental health status and demographic characteristics of the study sample.

Variables depression	Sources of variance	Sum of squares	df	Mean square	F	p value	Significant
Age	Between groups	43.381	3	14.460	7.391	0.000	H.S.
	Within groups	1948.738	996	1.957			
	Total	1992.119	999				
Education level	Between groups	13.614	3	4.538	2.284	0.047	S.
	Within groups	1978.505	996	1.986			
	Total	1992.119	999				
Years of work in ministry of health	Between groups	24.468	5	4.894	2.472	0.031	S.
	Within groups	1967.651	994	1.980			
	Total	1992.119	999				
	Within groups	1988.327	995	1.998			
	Total	1992.119	999				
Anxiety variables	Sources of variance	Squares sum	df	Mean square	F	p value	Significant
Age	Between groups	62.849	3	20.950	8.423	0.000	H.S.
	Within groups	2477.342	996	2.487			
	Total	2540.191	999				
	Within groups	2507.879	996	2.518			
	Total	2540.191	999				
Education level	Between groups	12.862	3	4.287	2.690	0.042	S.
	Within groups	2527.329	996	2.537			
	Total	2540.191	999				
	Within groups	2500.362	990	2.526			
	Total	2540.191	999				
Years of work in the ministry of health	Between groups	39.034	5	7.807	3.103	0.009	S.
	Within groups	2501.157	994	2.516			
	Total	2540.191	999				
	Within groups	2486.244	993	2.504			
	Total	2540.191	999				
	Within groups	2532.741	995	2.545			
	Total	2540.191	999				
Within groups	2534.097	996	2.544				
Total	2540.191	999					
Stress variables	Sources of variance	Squares sum	df	Mean square	F	p value	Significant
Age	Between groups	46.996	3	15.665	7.434	0.000	H.S.
	Within groups	2098.860	996	2.107			
	Total	2145.856	999				
	Within groups	2114.861	996	2.123			
	Total	2145.856	999				
Education level	Between groups	14.551	3	4.850	2.267	0.049	S.
	Within groups	2131.305	996	2.140			
	Total	2145.856	999				
	Within groups	2111.921	990	2.133			
	Total	2145.856	999				
Years of work in the ministry of health	Between groups	30.849	5	6.170	2.900	0.013	S.
	Within groups	2115.007	994	2.128			
	Total	2145.856	999				
	Within groups	2107.564	993	2.122			
	Total	2145.856	999				
	Within groups	2142.048	995	2.153			
	Total	2145.856	999				
Within groups	2141.644	996	2.150				
Total	2145.856	999					

small number of working numbers in the isolation wards and the COVID-19 hospitalization. And as our research reached this result, there are other researchers who found similar results in their research such as Aksoy and Koçak, the found that (80%) of the study sample were the nurse's workplace in other places and Temsah et al. the found that (44%) of the study sample were the nurse's workplace in other places.^{4,22}

REGRESSION ANALYSIS FOR THE IMPACT OF COVID-19 ON MENTAL HEALTH LEVELS STATUS NURSES [TABLE 2](#)

The study results of the shows that there was no relationship of significant between COVID-19 and the nurses depression levels. Because nurses are more susceptible to infection with COVID-19 than the public and because of the job hardship. Significant impact of COVID-19 health facilities have been overwhelmed with COVID-19 patients who need treatment in hospital and care of intensive. The high threats of infected and an exhausting work environment may help to the increased impacts on mental health between nurses and mental health outcomes among health workers affect their work performance. Perceived higher risk and having to stay in quarantine during an epidemic may not only have a short-term effect, but also have long-term mental health consequences among nurses. And as our research reached this result, there are other researchers who found similar results in their research such as Si et al. the found the study sample were no significant relationship between COVID-19 and depression levels for nurses and Chowdhury et al. the found the study sample were no significant relationship between COVID-19 and depression levels for nurses.^{19,23}

The findings of the study show there is relationship of significant among COVID-19 and stress levels for nurses at the value of probability (0.045). This difference partially explained by the different isolation measures that countries have implemented to limit the spread of COVID-19. In addition, demographics and lifestyles with differing norms, beliefs, and cultural values between countries may influence stress among nurses. And as our research reached this result, there are other researchers who found similar

results in their research such as Xing et al. the found the study sample were significant relationship between COVID-19 and stress levels for nurses at the value of probability (0.001) and Si et al. the found the study sample were significant relationship between COVID-19 and stress levels for nurses at the value of probability (0.001).^{20,23}

RELATIONSHIP BETWEEN DEPRESSION AND DEMOGRAPHIC CHARACTERISTICS OF THE STUDY SAMPLE [TABLES 3](#)

In terms of gender, the study's findings show found a statistically relationship of significant among depression levels and gender for nurses (0.000). When comparing male and female nurses, we found that the high percentage of depression levels among female nurses, because women are more sympathetic to patients, feeling insomnia, thinking about illness and fear of the unknown future, addition the physiological composition of women playing a significant role in not bearing the difficulties of life. And as our research reached this result, there are other researchers who found similar results in their research such as Al Maqbali et al. the found the study sample were significant relationship between depression level and gender for nurses at the probability value (0.001) and Xing et al. the found the study sample were relationship of significant among depression level and gender of nurses at the probability value (0.001).^{20,24}

About education level, the findings of the study refer that there is relationship of significant among depression levels and the education level for nurses at the probability value (0.047). Because of the modernity of nursing colleges in Iraq, a high percentage of bachelor's degrees appeared, and this linked to the lack of experience and expertise in facing pandemic lead to increase depression levels. And as our research reached this result, there are other researchers who found similar results in their research such as Chowdhury et al. the found the study sample were significant relationship between depression level and education levels for nurses at the probability value (0.030) and Xing et al. the found the study sample were significant relationship between depression levels and education level for nurses at the probability value (0.01).^{19,20}

Concerning years of work in ministry of health, the result of the study indicates that there is relationship of significant among depression levels and the years of work in ministry of health at the probability value (0.031). The number of years of service in the ministry of health playing major roles in limit changes in the psychological state of nurses by acquiring practical experience and skills in how to deal with crises. And as our research reached this result, there are other researchers who found similar results in their research such as Zhu et al. the found the study sample were significant relationship between depression levels and years of work in ministry of health at the probability value (0.001) and Jemal et al. the found the study sample were significant relationship between depression levels and years of work in ministry of health.^{1,15}

One of the most important ways and strategies to reduce stress and anxiety among nurses is to provide them with psychological support and provide them with self-protection equipment as well as give them scientific lectures on strategies to cope with stress in the pandemic

CONCLUSION

Mental health status of nurses (anxiety and stress) impacted by the COVID-19 pandemic and no impact COVID-19 on mental health status (depression) for nurses. There is a highly significant relationship between mental health with socio-demographic variables such as (age, level of education, years of work in the ministry of health). The mental health status of more nurses (anxiety and stress) affected by the COVID-19 pandemic and the lack of impact of COVID-19 on the mental health status (depression) of nurses. There is a statistically significant relationship between mental health and social and demographic variables such as (age, level of education, years of work in the ministry of health).

RECOMMENDATION

1. Protecting the nursing staff from chronic stress, anxiety and depression, which constitutes a psychological burden on health during the outbreak of the COVID-19 pandemic, by clarifying the disease and how to prevent it, as well as providing the personal protective equipment to decrease stress, anxiety and depression during the pandemic.

2. Develop and improve the Iraqi health system and provide health supplies that reduce the risk of transmission of infectious diseases to nursing staff during the spread of the epidemic, which affects the psychological and mental health of nurses.

3. Support social systems play major role in protecting nurses and reducing the prevalence of psychological distress through, assist their families to handle daily life requirements and securing their financial status the establishment of timely.

Source of Finance

During this study, no financial or spiritual support was received neither from any pharmaceutical company that has a direct connection with the research subject, nor from a company that provides or produces medical instruments and materials which may negatively affect the evaluation process of this study.

Conflict of Interest

No conflicts of interest between the authors and / or family members of the scientific and medical committee members or members of the potential conflicts of interest, counseling, expertise, working conditions, share holding and similar situations in any firm.

Authorship Contributions

Idea/Concept: Burhan Hadi; **Design:** Saja H. Mohammed; **Control/Supervision:** Saja H. Mohammed; **Data Collection and/or Processing:** Burhan Hadi; **Analysis and/or Interpretation:** Saja H. Mohammed; **Literature Review:** Saja H. Mohammed; **Writing the Article:** Burhan Hadi; **Critical Review:** Burhan Hadi; **References and Fundings:** Burhan Hadi; **Materials:** Burhan Hadi.

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