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Impact of the COVID-19 pandemic on nurses mental health status in Iraq

Burhan Hadi, Saja H. Mohammed[1]

Abstract:

BACKGROUND: The 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 (SARS), Middle East respiratory syndrome (MERS), and COVID-19. Nurses are the primary service providers in the health care; 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 to assess the impact of the pandemic on mental health status for nurses in Iraq.

MATERIALS AND METHODS: A total of sample study (1000) nurses in Iraq completed an online questionnaire between March and May 2021. Psychological impact was assessed using the depression anxiety stress scale (DASS21).

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* value = 0.040 and *P* value = 0.045, respectively).

CONCLUSION: The impact COVID-19 on mental health status for nurses. 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, mental health status, Nurses

Introduction

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 COVID-19.[1] Despite 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 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 defines mental health as a

Nursing Department, Al-Mustaqbal University College, Babil, Iraq, [1]Nursing Department, University of Babylon, Iraq

Address for correspondence:
Dr. Burhan Hadi, Nursing Department, Al-Mustaqbal University College, Babil, Iraq.
E-mail: m.s.burhan.hadi@mustaqbal-college.edu.iq

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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 World Health Organization (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' 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 Health-care staff as COVID-19 warriors, and paradoxical social stigma all lead to the emergence of different mental problems.[11] Health-care 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 health-care professionals.[14] In the other hand, In the other hand, the workload of the nurse is high, the Coronavirus Disease 19 (COVID-19) pandemic has had a severe effect on health care workers (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]

Materials and Methods

Study Design and Setting

A descriptive-cross-sectional online study design is use in this quantitative research. Using the technique in the assessment to assess mental health status and quality of live among nurses in Iraq through the COVID -19 pandemic.

Study participants and sampling

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 (except the Kurdistan region). A non-probability sample of 1000 nurses from south to north in Iraq. 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) and excluding nurses working in the Iraqi Ministry of Health and within the Kurdistan region, due to the language difference.

Data collection tool and technique

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 (DASS21) 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: Depression, Anxiety Stress Scale (DASS21) Questionnaire, in this section, 21 questions. Mental

health status levels was measured using the Depression, Anxiety and Stress Scale (DASS-21) and calculations of scores were based on the stander scale and divided into: Depression subscale: it consist 7 items (3,5,10,13,16,17,21) 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 four levels Likert rating scale.

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 and Microsoft Office Excel (2019)) to reveal the results.

Results

Table 1: Distribution of the sample according to socio-demographic variables: this table 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: Regression analysis for the impact of COVID-19 on mental health status: this table 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: One Way ANOVA relationship between mental health Status and demographic characteristics of the study, the sample 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 $P \leq 0.05$.

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	1000	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	1000	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	1000	100.0

Table 2: Regression analysis for the impact of COVID-19 on Mental Health Status

Variable	Model	Squares Sum	df	Mean Square	*F*	*P*	Sig.
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				

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, 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*.[11] the found that (68%) of the study sample were age group (20-29) years and Elhadi *et al*.[18] the found that (66%) of the study sample were age group (20-29) years.

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*.[19] 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*.[20] the found the study sample were significant relationship between depression levels and education level for nurses at the probability value (0.01).

About years of work in ministry of health, the study found that (36.8%) of the sample study of work duration

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*	Sig.
Age	Between Groups	43.381	3	14.460	7.391	0.000	
	Within Groups	1948.738	996	1.957			H.S.
	Total	1992.119	999				
Education level	Between Groups	13.614	3	4.538	2.284	0.047	
	Within Groups	1978.505	996	1.986			S.
	Total	1992.119	999				
Years of work in ministry of health	Between Groups	24.468	5	4.894	2.472	0.031	
	Within Groups	1967.651	994	1.980			S.
	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***	**Sig.**
Age	Between Groups	62.849	3	20.950	8.423	0.000	
	Within Groups	2477.342	996	2.487			H.S.
	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***	**Sig.**
Age	Between Groups	46.996	3	15.665	7.434	0.000	
	Within Groups	2098.860	996	2.107			H.S.
	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				

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*.[18]

the found that (26%) of the study sample were work duration in ministry of health between (7-12) year and Abu-Snieneh,[21] the found that (31%) of the study sample were work duration in ministry of health between (7-12) year.

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 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 & Koçak,[22] the found that (80%) of the study sample were the nurse's workplace in other places and Temsah *et al*.[23] the found that (44%) of the study sample were the nurse's workplace in other places.

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*.[24] the found the study sample were no significant relationship between COVID-19 and depression levels for nurses and Chowdhury *et al*.[19] the found the study sample were no significant relationship between COVID-19 and depression levels for nurses.

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*.[20] 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*.[24] the found the study sample were significant relationship between COVID-19 and stress levels for nurses at the value of probability (0.001).

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*.[23] 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*.[20] the found the study sample were relationship of significant among depression level and gender of nurses at the probability value (0.001).

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*.[19] 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*.[20] the found the study sample were significant relationship between depression levels and education level for nurses at the probability value (0.01).

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*.[15] 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*.[1] the found the study sample were significant relationship

between depression levels and years of work in ministry of health.

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.

Limitation and 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.

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).

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Ethical considerations

All ethical principles are considered in this article. The participants were informed of the purpose of the research and its implementation stages. They were also assured about the confidentiality of their information. They were free to leave the study whenever they wished, and if desired, the research results would be available to them. Written consent has been obtained from the subjects.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

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Conflicts of interest

There are no conflicts of interest.

References

1. Jemal K, Deriba BS, Geleta TA, Tesema M, Awol M, Mengistu E, Annous Y. Self-reported symptoms of depression, anxiety, and stress among healthcare workers in Ethiopia during the COVID-19 pandemic: a cross-sectional study. Neuropsychiatric Disease and Treatment. 2021;17:1363.
2. Heymann D, Shindo N. COVID-19: What is next for public health?. Lancet 2020;395:542-5.
3. Habib O, AlKanan AK, Abed AH, Mohammed NQ. Epidemiological Features of COVID-19 Epidemic in Basrah-Southern Iraq-First Report. Med J Basrah Univ 2020;38:7-18.
4. Temsah M, Al-Sohime F, Alamro N, Al-Eyadhy A, Al-Hasan K, Jamal A, *et al*. The psychological impact of COVID-19 pandemic on health care workers in a MERS-CoV endemic country. J Infect Public Health 2020;13:877-82.
5. Eurosurveillance Editorial Team. Note from the editors: World Health Organization declares novel coronavirus (2019-nCoV) sixth public health emergency of international concern. Euro Surveill 2020; 25:200131e.
6. Bargon C, Batenburg M, van Stam L, van der Molen D, van Dam I, van der Leij F, *et al*. The impact of the COVID-19 pandemic on quality of life, physical and psychosocial wellbeing in breast cancer patients – A prospective, multicenter cohort study. JNCI Cancer Spectr 2020;5:pkaa104.
7. Ripp J, Peccoralo L, Charney D. Attending to the emotional well-being of the health care workforce in a New York City health system during the COVID-19 pandemic. Acad Med 2020;95:1136-9.
8. Eldevik M, Flo E, Moen B, Pallesen S, Bjorvatn B. Insomnia, excessive sleepiness, excessive fatigue, anxiety, depression and shift work disorder in nurses having less than 11 hours in-between shifts. PLoS One 2013;8: e70882.
9. Kim Y, Kang S. The quality of life, psychological health, and occupational calling of Korean workers: Differences by the new classes of occupation emerging amid the COVID-19 pandemic. Int J Environ Res Public Health 2020;17:5689.
10. Di Tella M, Romeo A, Benfante A, Castelli L. Mental health of healthcare workers during the COVID-19 pandemic in Italy. J Eval Clin Pract 2020;26:1583-7.
11. Khanal P, Devkota N, Dahal M, Paudel K, Joshi D. Mental health impacts among health workers during COVID-19 in a low resource setting: A cross-sectional survey from Nepal. Global Health 2020;16:89.
12. Rehman U, Shahnawaz M, Khan N, Kharshiing K, Khursheed M, Gupta K, *et al*. Depression, anxiety and stress among Indians in times of Covid-19 lockdown. Community Ment Health J 2020;57:42-8.
13. Chew N, Lee G, Tan B, Jing M, Goh Y, Ngiam N *et al*. A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers

during COVID-19 outbreak. Brain Behav Immun 2020;88:559-65.
14. Buselli R, Baldanzi S, Corsi M, Chiumiento M, Del Lupo E, Carmassi C *et al*. Psychological care of health workers during the COVID-19 outbreak in Italy: Preliminary report of an occupational health department (AOUP) responsible for monitoring hospital staff condition. Sustainability 2020; 12:5039.
15. Zhu Z, Xu S, Wang H, Liu Z, Wu J, Li G, *et al*. COVID-19 in Wuhan: Immediate psychological impact on 5062 health workers. MedRxiv. 2020 Jan 1.
16. Moussa M, Lovibond P, Laube R, Megahead H. Psychometric properties of an arabic version of the depression anxiety stress scales (DASS). Res Soc Work Pract 2016;27:375-86.
17. Ali A, Green J. Factor structure of the depression anxiety stress Scale-21 (DASS-21): Unidimensionality of the Arabic version among Egyptian drug users. Subst Abuse Treat Prev Policy 2019;14:40.
18. Elhadi M, Msherghi A, Elgzairi M, Alhashimi A, Bouhuwaish A, Biala M, *et al*. Psychological status of healthcare workers during the civil war and COVID-19 pandemic: A cross-sectional study. J Psychosom Res 2020; 137:110221.
19. Chowdhury S, Sunna T, Das D, Kabir H, Hossain A, Mahmud S, *et al*. Mental health symptoms among the nurses of Bangladesh during the COVID-19 pandemic. Middle East Curr Psychiatry 2021;28:23.
20. Xing L, Xu M, Sun J, Wang Q, Ge D, Jiang M, *et al*. Anxiety and depression in frontline health care workers during the outbreak of Covid-19. Int J Soc Psychiatry 2020;67:656-63.
21. Abu-Snieneh H. Psychological factors associated with the spread of Coronavirus disease 2019 (COVID-19) among nurses working in health sectors in Saudi Arabia. Perspect Psychiatr Care 2021;57:1399-408.
22. Aksoy Y, Koçak V. Psychological effects of nurses and midwives due to COVID-19 outbreak: The case of Turkey. Arch Psychiatr Nurs 2020; 34:427-33.
23. Al Maqbali M, Al Khadhuri J. Psychological impact of the coronavirus 2019 (COVID-19) pandemic on nurses. Jpn J Nurs Sci 2021;18: e12417.
24. Si M, Su X, Jiang Y, Wang W, Gu X, Ma L, *et al*. Psychological impact of COVID-19 on medical care workers in China. Infect Dis Poverty 2020; 9:113.