

The Relationship between Anxiety and Nurses' Resilience During the Corona in Corona Reference in Mazandaran Provinc Hospitals

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Abstract

Background and Aim: The recent outbreak of the new coronavirus (Covid-19) has caused a great deal of stress and anxiety around the world/ The aim of this study was to investigate the relationship between anxiety and nurses' resilience during the corona in Sari and Ghaemshahr hospitals in 2021.

Materials and Methods: This research was a descriptive-applied correlation. The study population consisted of all nurses of public hospitals in the number of 1665 people and the samples of 384 people were selected by stratified sampling method using stratified sampling method and Krechsey Morgan. Data were collected from the standard Coronavirus Anxiety Inventory (CDAS) and Connor & Davidson (2003) Resilience Questionnaire with a Likert scale question Was finalized with 21spss software.

Results: The findings showed that anxiety (physical symptoms, fatigue, insomnia, psychological symptoms (positive acceptance of change and safe relationships), psychological symptoms (control and spiritual effects) are associated with nurses' resilience during coronation/ The present study also showed that anxiety is related to demographic characteristics including (age, sex and work experience, education, number of children, underlying disease, and marital status) which marital status is the highest and education is the lowest predictor of nurses' resilience Has had($p<0.005$).

Conclusion: Anxiety with nurses' resilience in corona Therefore, to reduce the anxiety of medical staff, health policy makers should consider the necessary measures and measures.

Keywords: Anxiety - Resilience - Nurses – Corona.

Introduction

The lack of definitive treatment or prevention for COVID-19 has generated significant stress and concern within societies. COVID-19 is a highly contagious infectious disease that spreads through close person-to-person contact. The average number of people one infected individual can transmit the virus to is estimated between 2.8 and 3.8. Assuming an average transmission rate of 3.5, over 70% of the population is expected to become infected (1). The symptoms of this virus vary from mild to severe, commonly including fever, cough, and difficulty breathing (2).

Anxiety is a common symptom among patients with chronic respiratory disorders and can significantly reduce their quality of life. Stress and anxiety can weaken the immune system, making individuals more vulnerable to infections, including COVID-19 (3). Given that public health measures are the only effective method to control the disease, the pandemic led to the rapid implementation of strict quarantine protocols worldwide (4). Quarantine can be either voluntary or mandatory, and may apply at the individual or community level.

Resilience, as a personality trait, is described as the ability to successfully adapt to stressful and threatening conditions. According to the theory of Connor and Davidson, resilience is defined as the capacity and strength of an individual to cope with hardships and adversity (5). Resilience is the individual's ability to maintain biological and psychological balance under adverse conditions. In their view, resilience refers to

better adaptation under threatening circumstances (6).

Limited public knowledge about COVID-19, along with misinformation and rumors, has led to heightened levels of anxiety, fear, boredom, and hopelessness (4). Therefore, addressing only the physical health of patients is insufficient; psychological care is also crucial to reduce stress and mental pressure (7). For example, Liu's study demonstrated that social support can alleviate the psychological burden associated with the Ebola outbreak (8). Wang et al. reported moderate to severe psychological impacts—including depression, anxiety, and stress—during the COVID-19 outbreak in China (9). Similarly, studies conducted by Lin during the SARS pandemic indicated that despite individual differences, most people experienced feelings of isolation and struggled to cope with psychological stress (10).

Al-Rabia and colleagues found that frontline healthcare providers, particularly nurses, were not exempt from these psychological burdens and were significantly affected by mental stressors (11). This group may even be more vulnerable than the general population, experiencing higher levels of depression and anxiety (12). Since nurses' physical and mental health is directly linked to the quality of patient care, job satisfaction, and work performance (13), enhancing their resilience can reduce the costs associated with diagnosing and treating anxiety. Furthermore, resilience may play a critical role in mitigating anxiety among nurses.

Due to the limited research available on COVID-19 and the substantial physical, psychological, cultural, and social pressures it imposes (14), the importance of this study is underscored. Nurses constitute a central component of the healthcare team, representing over 10% of healthcare providers, and serve as the first line of defense in confronting the COVID-19 pandemic. The nursing profession involves prolonged and continuous stress, especially for those in helping roles who often feel overwhelmed by others' problems. According to the Iranian Ministry of Health,

approximately 45,000 nurses have been infected with COVID-19. In a study by Koh et al., more than half of the nurses (56%) reported experiencing stress (15).

Given the emerging nature of COVID-19, its psychological impact on nurses, and the lack of sufficient research in this area, conducting the present study is deemed essential.

Materials and Methods

This study employed a descriptive-analytical design. The statistical population included all nurses working in public hospitals of Sari (Imam, Bu-Ali Sina, Fatemeh Zahra, and Shahid Zareh) and Qaemshahr (Razi Hospital), totaling 1700 individuals. A sample of 384 nurses was selected based on Krejcie and Morgan's sample size table, using stratified random sampling.

Inclusion criteria were: employment in the nursing profession, willingness to participate in the study, and complete completion of the questionnaire. Exclusion criteria included lack of consent to participate, diagnosis of anxiety or depressive disorders, and incomplete questionnaire responses. For data collection, two standardized questionnaires were utilized: the Coronavirus Anxiety Scale (CDAS) and the Connor-Davidson Resilience Scale (CD-RISC, 2003), comprising 46 items rated on a Likert scale. Given the standardized nature of the instruments, content validity was considered established. Two questionnaires were validated in Iran by Alipour et al. and Vakili et al. Validity and reliability were 0.91 and 0.899, respectively, for the first questionnaire. And the validity and reliability of the resilience questionnaire were reported to be 0.87 and 0.92, respectively (16,17). The normality of the data distribution was first examined using the Kolmogorov–Smirnov test. In this study, written consent was first obtained from the participants. Then, the objectives and nature of the study were explained to the study subjects and the method of conducting the study. And ambiguities were resolved. Then, the questionnaire was made available to the nurses of both groups of coronavirus patients (101 people) and non-coronavirus patients

(283 people). The nurses completed the questionnaire. After completing the questionnaire, it was collected by the researcher. Then, the data was entered into the computer and was finally analyzed using SPSS version 21 software. The inclusion criteria for the study were being employed in the nursing field, having consent to participate in the study. And the exclusion criteria were the nurses' dissatisfaction, having anxiety or depression, and questionnaires that were incompletely filled out were excluded from the study. Subsequently, the data were analyzed using Spearman correlation and Chi-square tests.

Findings

This study, aiming to investigate the relationship between anxiety and resilience among nurses during the COVID-19 pandemic, was conducted in 2021 on a sample of 384 nurses working in referral hospitals of Sari and Qaemshahr. Of the 384 total subjects, 153 (39.8%) were males and 231 (60.2%) were females. 51 subjects were in the 20-30 age group (13.3%), 256 subjects were in the 31-45 age group (66.7%), and 77 subjects were in the 45+ age group (20.1%). (Table 1)

	Group	Frequency (n)	Percentage (%)
Gender	Male	153	39.8
	Female	231	60.2
Age	20-30 years	51	13.3
	31-45 years	256	66.7
	Above 45 years	77	20.1
Work Experience	Less than 5 years	32	31.8
	5-10 years	122	44.8
	10-20 years	172	44.8
	More than 20 years	58	15.1
Work Unit	COVID-19 Ward	101	3.26
	Non-COVID Ward	283	7.73

According to the results presented in the table above, the distribution of scores for the study variables was found to be normal. This conclusion is based on the fact that the

significance values (p-values) for all variables were greater than the threshold level of 0.05. Therefore, the differences between the observed data distributions and the normal distribution were not statistically significant. As a result, the assumption of normality was met for both the main and sub-hypotheses of the study. Consequently, parametric tests were applied for hypothesis testing. (Table 2)

Table 2: Assessment of the Normality of Variable Score Distributions Using the Kolmogorov-Smirnov Test

Variables	K-S Statistic (Z)	Significance Level (p-value)	Criterion ($\alpha = 0.05$)	Distribution Status
Anxiety	0.216	0.208	> 0.05	Normal
Resilience	0.358	0.241	> 0.05	Normal

According to the results of the Pearson correlation test, there is a statistically significant relationship between anxiety and nurses' resilience ($r = 0.642$, $p = 0.002$). Given the correlation coefficient of 0.642, the strength of this relationship is moderate and the direction is positive. This indicates that during the COVID-19 pandemic, there was a positive correlation between anxiety and resilience among nurses working in COVID wards. (Table 3)

Table 3: Analysis of the Distribution of Research Variables

Significant Relationship	Degrees of Freedom (df)	Significance Level (p-value)	Correlation Coefficient (r)	Variable
Yes	384	*0.002	0.642	Anxiety and Resilience

According to the results of the Pearson correlation test, there is a statistically significant relationship between anxiety and nurses' resilience ($r = 0.492$, $p = 0.002$). Given the correlation coefficient of 0.492, the strength of this relationship is moderate and the direction is positive. This suggests that, among nurses working in non-COVID hospital wards, there is a positive correlation between anxiety and resilience. (Table 4)

Table 5 presents the correlation coefficients

Table 4: Correlation Analysis Between Study Variables in COVID wards (Anxiety and Resilience)

Significant Relationship	Degrees of Freedom (df)	Significance Level (p-value)	Correlation Coefficient (r)	Variable
Yes	384	*0.002	-0.492	Anxiety and Resilience

between the predictor variables (age, gender,

work experience, education level, number of children, presence of underlying disease, and marital status) and the criterion variable (resilience) of nurses during the COVID-19 pandemic. This hypothesis was tested using multiple regression analysis. The correlation coefficient was calculated as $r = 0.964$, and the coefficient of determination $R^2 = 0.930$, with a p -value = 0.001.

Table 5: Correlation Analysis Between Study Variables in COVID wards (Anxiety and Resilience)

conclusion	R	R2	Std. Error	F	Significance Level
Significant	0.964	0.930	4.48	616.475	0.001

Since the obtained significance level ($p < 0.001$) is smaller than the standard threshold of 0.05, the null hypothesis is rejected, and the research hypothesis is confirmed. According to the regression output, the results indicate that there is a significant relationship between nurses' age, gender, work experience, education, number of children, underlying health conditions, and marital status and their resilience during the COVID-19 period. Table 6 shows that the variable age is significantly related to resilience, with a regression coefficient of 0.157 and a t -value of 3.246, and an R^2 value of 0.075. The gender variable is also significantly associated with resilience, with a coefficient of 0.156, t -value of 5.286, and R^2 of 0.063. The work experience variable has a significant relationship with resilience ($\beta = 0.120$, $t = 3.779$, $R^2 = 0.049$). The education level is also a significant predictor, with a coefficient of 0.104, t -value of 2.139, and $R^2 = 0.009$. The number of children variable is significantly associated with resilience, with a coefficient of 0.168, t -value of 4.917, and $R^2 = 0.057$. The presence of underlying health conditions also shows a significant relationship ($\beta = 0.255$, $t = 6.476$, $R^2 = 0.048$). Finally, marital status demonstrates a significant association with resilience, with a coefficient of 0.370, t -value of 8.957, and $R^2 = 0.032$.

Table 6: Estimated Coefficients of the Final Linear Regression Model for Study Variables

Predictor Variable	R2	Unstandardized Coefficients (B)		Std. Error	t-value	Significance Level
		B	Standard Deviation	BE T A		
Constant		3.380	0/307		11.019	0.002
Age	0.075	0/159	0/049	0/157	3.246	0/001
Gender	0.063	0/355	0/067	0/156	5/289	0/013
Work Experience	0/049	0/131	0/168	0/120	3/779	0/002
Education	0/009	0/115	0/108	0/104	2/139	0/001
Number of Children	0/057	0/487	0/099	0/168	4/917	0/013
Underlying Illness	0/048	0/815	0/126	0/255	6/476	0/017
Marital Status	0/032	1/163	0/130	0/370	8/957	0/002

Discussion

The present study aimed to investigate the relationship between anxiety and resilience among nurses during the COVID-19 pandemic in hospitals of Sari and Qaemshahr in 2021. Given the widespread outbreak of COVID-19 and the high mortality rates associated with the disease globally, healthcare workers—being at the frontline—are more likely to experience psychological disturbances and anxiety than others. Findings from the current study indicated that there is a significant relationship between anxiety and resilience among nurses working in COVID-19 wards. Emerging mental health issues are influencing the decision-making capabilities of healthcare personnel and may have chronic negative effects. To improve mental health among healthcare workers, it is necessary to establish maximum working hours and shift arrangements, promote self-care, and reduce

excessive workload. Furthermore, enhancing knowledge related to infection control and self-protection among healthcare providers is essential.

This study demonstrated that nurses working in COVID-19 wards are at higher risk of exposure, experiencing greater emotional stress and workload. The findings are consistent with previous studies by Salari et al. (19), Chen et al. (20), Yan et al. (21), and Liu et al. (8). Salari et al. reported that increasing the sample size led to a statistically significant reduction in the prevalence of depression and anxiety, although stress prevalence increased with sample size but was not statistically significant. Their results also showed high levels of stress, anxiety, and depression among frontline healthcare workers managing COVID-19 patients (19). According to established protocols, the number of patients seen per shift and hour should be limited to reduce infection risk, with adequate distancing and appropriate protective equipment (e.g., masks, gloves, gowns, eye protection) for all staff. Liu et al. (8) found that healthcare staff in direct contact with COVID-19 patients exhibited higher anxiety levels compared to those with no direct contact.

The present study also showed a significant relationship between anxiety and resilience among nurses working in non-COVID wards. Anxiety, as a threat to mental health, has caused numerous concerns—such as fear of contracting COVID-19 among nurses. The resilience mechanism helps reduce anxiety through core components such as self-confidence, personal competence, trust in instincts, positive acceptance of change, control, and spiritual influence. These act as buffers against psychological stress. Nurses with high clinical resilience can endure even the most acute and stressful situations—such as the COVID-19 pandemic—without succumbing to psychological issues like anxiety and depression. These findings align with the studies by Yan et al. (21), Mir-Kazahi (22), and Variaei (23), but differ from the findings of Zarrabadi-Pour (24). Ashkani's findings revealed significant

differences in job stress and resilience (and their subcomponents) between nurses working in COVID and non-COVID wards in Shiraz hospitals. Job stress was higher, and resilience lower, among nurses in COVID wards (18). Variaei emphasized the need for an intermediate unit between COVID and non-COVID departments, and recommended strict protective protocols even in non-COVID units due to high anxiety about infection among nurses. Yan et al. (21) reported higher mild to moderate distress among second-line nurses compared to frontline nurses (31% vs. 25%). Living alone and perceived social support independently predicted lower anxiety. Their study concluded that all nurses experienced serious psychological issues during the COVID-19 pandemic, with second-line nurses reporting more severe concerns than frontline workers—a finding inconsistent with the present study. This discrepancy may be due to regional, cultural, educational, or religious differences. Zarrabadi-Pour (24) found no statistically significant difference in anxiety levels between the general public, COVID and non-COVID medical personnel. However, the present study reported higher anxiety among nurses in COVID wards, possibly due to differences in disease-related knowledge and awareness among healthcare professionals. Furthermore, this study revealed a significant relationship between psychological symptoms (e.g., worry) and resilience among nurses during the pandemic. Increased social capital and perceived social support led to enhanced spiritual well-being, which in turn improved resilience against COVID-related stress. Promoting these factors during periods of social distancing may enhance resilience. These findings are consistent with those of Fariour (25) and Shahyad (26). Anxiety and worry, which are often irrational emotional responses, are symptoms of many psychological disorders. Anxiety is a universal human experience under pressure or tension, especially in the face of threatening or uncertain situations. The contagious nature of COVID-19 has triggered both physical health concerns and

psychological disorders. Moreover, the level of anxiety among medical staff in highly infected cities (such as Wuhan) was reported to be higher compared to medical personnel in less affected cities (20). The findings of the present study also indicated that age, work experience, education, number of children and underlying health conditions could serve as predictors of resilience among nurses. While the study by Sarsiam (27) found no significant relationship between gender and marital status with higher levels of anxiety, the current research demonstrated that both gender and marital status can predict levels of resilience in nurses. This inconsistency may be attributed to differences in research methodology or sample size. Limitations of this study include the difficulty in accessing nurses due to the pandemic, variability in the accuracy of questionnaire responses due to individual differences and night shifts, which may have affected response quality.

Conclusion

Given the widespread outbreak of COVID-19 across the globe and the high mortality rate associated with the disease, healthcare workers—being on the front lines of the pandemic—are more vulnerable than others to developing psychological disorders and anxiety. The rapid transmission rate of COVID-19, which is one of its defining characteristics, led to a global public health emergency within just a few months of its emergence in various countries. This contagious disease not only raised serious concerns regarding physical health but also contributed to the onset of various psychological disorders. Therefore, possessing certain characteristics such as resilience can protect individuals against crises like the COVID-19 pandemic, which caused significant stress among the general population.

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Conflict of Interest

The authors declare no conflicts of interest.

References

1. Alimohamadi Y, Taghdir M, Sepandi M. The Estimate of the Basic Reproduction Number for Novel Coronavirus disease (COVID-19): A Systematic Review and Meta-Analysis. *J Prev Med Public Health*. 2020 May;53(3):151-157.
2. 2-Deying Hu YK, Wengang Li, Qiuying Han, Xin Zhang, Li Xia Zhu, SuWei Wan, Zuofeng Liu, Qu Shen, Jingqiu Yang, Hong-Gu He, Jiemin Zhu. Frontline nurses' burnout, anxiety, depression, and fear statuses and their associated factors during the COVID-19 outbreak in Wuhan, China: A largescale cross-sectional study. *Eclinicalmedicin* 2020;24.
3. Dong X. Wang L. Tao Y. Suo X. Li Y. Liu F. Zhao Y. Zhang Q. Psychometric properties of the Anxiety Inventory for Respiratory Disease in patients with COPD in China/ *Int J Chron Obstruct Pulmon Dis*. (2017); 12,49-58.
4. Brooks SK, Webster RK, Smith LE, Woodland L, Wessely S, Greenberg N, Rubin GJ. The psychological impact of quarantine and how to reduce it: rapid review of the evidence. *Lancet*. 2020 Mar 14;395(10227):912-920.
5. Cachón Zagalaz J. López Manrique I. San Pedro Veledo MB. Zagalaz Sánchez ML. González González de Mesa C. The Importance of the Phoenix Bird Technique (Resilience) in Teacher Training: CD-RISC Scale Validation. *Sustainability*. 2020; 12(3):1002.
6. Khodamoradi S. Maddahi M. E. Ahadi, H. Besharat, M. & Mazaheri Tehrani, MM. The Conceptualization of Cultural Resilience. *Journal Strategic Studies of Public policy*. (2021); 11(38)PP276-297
7. Kim Y. Nurses' experiences of care for patients with Middle East respiratory syndrome-coronavirus in South Korea. *American journal of infection control*. (2018); 46(7):781-787.
8. Liu C, Wang H, Zhou L, Xie H, Yang H, Yu Y, et al. Sources and symptoms of stress among nurses in the first Chinese anti-Ebola medical team during the Sierra Leone aid mission: A qualitative study/ *International journal of nursing sciences*. 2019;6(2): 187-91.
9. Wang, C. Pan, R. Wan, X. Tan, Y. Xu, L. Ho, S. Immediate psychological responses and associated factors during the initial stage of the 2019 Coronavirus Disease (COVID-19) epidemic among the general population in China. *International Journal of Environmental Research and Public Health*. (2020); 17(5),1729.

10. Lin ECL PY, tsai JCH. Lessons learned from the anti-SARS quarantine experience in a hospital-based fever screening station in taiwan. *American journal of infection control.*(2010);38(4): 302-7.
11. IAl-Rabiaah A, Temsah MH, Al-Eyadhy AA, Hasan GM, Al-Zamil F, Al-Subaie S, Alsohime F, Jamal A, Alhaboob A, Al-Saadi B, Somily AM. Middle East Respiratory Syndrome-Corona Virus (MERS-CoV) associated stress among medical students at a university teaching hospital in Saudi Arabia. *J Infect Public Health.* (2020);13(5):687-691.
12. Xiang Y-T. Yang Y. Li W.Zhang L. Zhang Q. Cheung T. et al. Timely mental health care for the 2019 novel coronavirus outbreak is urgently needed. *The Lancet Psychiatry*(2020);7(3):228-9.
13. Mahdizadeh M. Yaghobipoor M. Khoshab M. Implementation of enforcement productivity law and performance-based payment and nurses' job satisfaction. *Quarterly Journal of Nursing Management*(2017);6(2):31-40.
14. Shivandi, K, Hassanvand, F. Developing a model of psychological consequences of anxiety caused by the coronavirus epidemic and examining the mediating role of spiritual health. *Culture of Counseling and Psychotherapy*, (2020); 11(42): 1-36.
15. Sarbozi Hosseinabadi, T., Askari, M. Reza, Miri, K., Namazinia, M. Depression, stress and anxiety of nurses in the COVID-19 pandemic in Torbat-e Heydariyeh Nahmi Dey Hospital. *Military Medicine*, (2022); 22(6): 526-533.
16. Vakili S, Riazzi Z, Safarpour Dehkordi S, Sanagouye Moharer G. The Role of Positive and Negative Meta-emotions, Religious Beliefs and Resilience in Predicting Corona Anxiety of Patients with Type 2 Diabetes. *IJNR* 2020; 15 (4) :83-92.
17. Alipour, A, Ghadami, A, Alipour, Z, Abdollahzadeh, H. Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in an Iranian sample. *Health Psychology*, 2019; 8(32): 163-175.
18. Ashkani, Sh.Mardpour, A. "Comparison of job stress and resilience between nurses working in the COVID-19 patient ward and nurses in non-COVID-19 wards of hospitals in Borujen city" Fifth National Conference on Social Sciences, Psychology and Educational Sciences.2020 8, pp. 13-1
19. Salari, N. Khazaie, H. Hosseinian-Far, A. The prevalence of stress, anxiety and depression within front-line healthcare workers caring for COVID-19 patients: a systematic review and meta-regression *Hum Resour Health*(2020): 18, 100.
20. Chen KY, Yang CM, Lien CH, et al. Burnout, job satisfaction, and medical malpractice among physicians. *Int J Med Sci.* (2013);10(11):1471-78
21. Yan L Y, Yifan C, Qiong G, Liu Y, Yifei L, Yu C, Lei L, Yan J, Ka L,Kun t, Xiaoming, Cheng S, Fang Z, Xiaoxia S, Ga L, Jin H, Liang D.Psychological Impact of the COVID-19 Outbreak on Nurses in China: ANationwide Survey During the Outbreak. *Frontiers in Psychiatry.* (2020);22(11):13-53.
22. Mir Kazehi, Z. Dadpish, S. Sheikhi, Firoozeh; K. S.Challenges and strategies for dealing with COVID-19 from the perspective of doctors and nurses in southern Sistan and Baluchestan (Iranshahr (*Journal of Military Medicine* (2019); 22(6) : 606-5991.
23. Varaiei, H. Mohammadi, Mostafa. Amini, M. (2019) Diagnosis of 5 cases of COVID-19 in a non-coronavirus intensive care unit .*Journal of the Iranian Society of Anesthesiology and Intensive Care.*2019;Volume 2, Issue 1, : 16-8
24. Zarabadipour, M., Asgari Ghoncheh, M., Asgari Ghoncheh, S., Mirzadeh, M., Monirsadat. Psychological study of factors affecting stress caused by the coronavirus pandemic in medical staff and the community of Qazvin, Spring 2018. *Military Medicine*, 1401; 22(6): 517-525.
25. farivar M, Aziziam S, Basharpour S. The role of health-promoting behaviors and health beliefs in predicting anxiety about COVID-19 in nurses. *Journal of Nursing Management.*(2020);9(4): 1-10
26. 26- Shahyad, Shima; and Mohammadi, Mohammad Taghi/ Psychological effects of the spread of COVID-19 on the mental health status of individuals in the community: A review study.*Journal of Military Medicine*, (2019) ;23 (2) : 192-184.
27. Saricam M. COVID-19-Related anxiety in nurses working on front lines in Turkey. *Nursing and midwifery studies.* 2020 : 9(3) : 178-181. Doi: 10.4103/nms.nms_40_20Sim, Malcolm R. The COVID-19 pandemic: major risks to healthcare and other workers on the front line. (2020): 281-282.