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ORIGINAL RESEARCH

Investigating the Relationship between Perceived Social Support, Sleep Quality, and Corona Anxiety in Medical Staff

Investigando la relación entre el apoyo social percibido, la calidad del sueño y la ansiedad por COVID-19 entre el personal médico

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Abstract

Introduction. This study aimed to examine the relationship between perceived social support, sleep quality, and coronavirus-related anxiety among employees of selected centres for the diagnosis and treatment of COVID-19 patients. **Methods.** This descriptive-analytical cross-sectional study included all employees of 24-hour active COVID-19 diagnosis and treatment centres who met the inclusion criteria and were recruited through convenience sampling. Data were collected using structured questionnaires. Due to the non-normal distribution of the data, non-parametric tests—including Spearman's correlation, Mann–Whitney U, and Kruskal–Wallis tests—were applied. Data analysis was performed using SPSS version 22. Results. The majority of participants were female (83.5%, n = 101), held a Bachelor's degree (84.3%, n = 102), and had no history of COVID-19 infection (59.5%, n = 72). Significant correlations were observed between COVID-19 anxiety and sleep quality (p = 0.001, r = –0.817), COVID-19 anxiety and perceived social support (p = 0.002, r = –0.278), and sleep quality and perceived social support (p = 0.002, r = –0.273). **Conclusion.** The findings indicate that higher levels of COVID-19-related anxiety are associated with poorer sleep quality and lower perceived social support among healthcare workers, which may negatively affect their mental health.

Keywords: Social Support, Anxiety, Sleep Quality, Healthcare Providers

Resumen

Introducción. Este estudio examinó la relación entre el apoyo social percibido, la calidad del sueño y la ansiedad entre los empleados de centros seleccionados para el diagnóstico y tratamiento de pacientes con COVID-19. **Métodos.** Este estudio transversal descriptivo-analítico incluyó a todos los empleados de centros de diagnóstico y tratamiento de COVID-19 activos durante 24 horas que cumplieron los criterios de inclusión, mediante muestreo por conveniencia. Los datos se recabaron mediante un cuestionario. Debido a la distribución anormal de los datos, se utilizaron pruebas no paramétricas, como la correlación de Spearman, la de Mann-Whitney y la de Kruskal -Wallis. El análisis de datos se realizó con el programa SPSS (versión 22). Resultados La mayoría de los participantes fueron mujeres (83.5 %, n = 101), con licenciatura (84.3 %, n = 102) y sin antecedentes de COVID-19 (59.5 %, n = 72). Se encontraron correlaciones significativas entre la ansiedad por COVID-19 y la calidad del sueño (p = 0.001, r = -0.817), la ansiedad por COVID-19 y el apoyo social percibido (p = 0.002, r = -0.278), y entre la calidad del sueño y el apoyo social percibido (p = 0.002, r = -0.273). **Conclusión.** Los hallazgos sugieren que el aumento de la ansiedad relacionada con el COVID-19, la mala calidad del sueño y la reducción del apoyo social percibido entre los trabajadores de la salud pudieron afectar negativamente su salud mental.

Palabras clave: Apoyo social, Ansiedad, Calidad del sueño, Profesionales de la salud

Introduction

The outbreak of COVID-19 was first reported in late 2019 and rapidly spread throughout China and other countries,(1) leading to a global pandemic in early 2020. (2) Similar to the psychological responses observed during the SARS outbreak in the early 21st century, these conditions gave rise to a phenomenon referred to as “corona phobia”. (3) Healthcare workers commonly experience anxiety during outbreaks of infectious diseases.(4, 5) In China, the reported prevalence of anxiety among healthcare workers during the COVID-19 pandemic was approximately 45%,(5) and a study conducted in Iran reported a comparable level of anxiety within this population. (6)

Such anxiety can negatively affect frontline performance as well as the personal and social functioning of healthcare workers (7). The increased workload during the COVID-19 pandemic, combined with reduced social support due to isolation and demanding work environments, has made healthcare workers more vulnerable to anxiety and insomnia (8). Moreover, anxiety itself can contribute to sleep disturbances. Sleep quality is widely recognised as an important determinant of overall health (4).

Adequate sleep is associated with improved mental health, whereas poor sleep quality can lead to physical health problems and mental disorders such as depression and anxiety (9). High-quality sleep among healthcare workers enhances professional performance (5). However, during the COVID-19 pandemic, a high prevalence of sleep disturbances—reported at 76%—was observed among healthcare workers in India (8).

Perceived social support refers to individuals’ subjective evaluation of the support they receive from family, friends, and the broader community. This support may include psychosocial, financial, or emotional assistance. Perceived social support plays a significant role in psychological well-being and has been shown to influence both sleep quality and anxiety levels among healthcare workers (10, 11).

Given the mentioned points, investigating the psychological state of healthcare workers who are directly exposed to COVID-19 patients can help identify their health issues in terms of mental well-being, and also improve the quality of patient care. This study was conducted to examine the perceived social support, sleep quality, and COVID-19 anxiety among healthcare workers in selected diagnostic and treatment centers for COVID-19 patients.

Methods

The present cross-sectional study was conducted using a descriptive-analytical method in Shiraz. Sampling was done from 2021.07.13 to 2022.02.13. The research population included all 11 active 24-hour diagnostic and treatment centers for COVID-19 in Shiraz, and all centers participated in the study based on convenience sampling and meeting the inclusion criteria. Sampling was performed among physicians, nurses, healthcare providers, and laboratory scientists in the centers. The inclusion criteria included being employed in any of the medical, nursing, laboratory, and health monitoring units, willingness to participate in the study, and access to a smartphone or computer to respond to the online questionnaire. Additionally, the use of psychotropic medications excluded participants from in the study.
The data were collected using an online questionnaire consisting of four sections: demographic characteristics, COVID-19 anxiety, sleep quality, and perceived social support.

Demographic characteristics included age, gender, education, marital status, having children, occupation, patients' medical history, history of COVID-19 infection, and history of substance abuse. To measure COVID-19 anxiety, an 18-item questionnaire called the Corona Disease Anxiety Scale (CDAS) was used, which was designed by Alipour et al. (2020). This scale consists of two psychological factors (questions 1-9) and social factors (questions 10-18). The questions are rated on a 4-point Likert scale ranging from "never" to "always," with scores ranging from 0 to 3. Scores of 0-16 indicate low anxiety, 17-29 indicate moderate anxiety and 30-54 indicate high anxiety. The questionnaire's validity was assessed, and its reliability was reported using Cronbach's alpha coefficient of 0.919 (12). To measure sleep quality, the Pittsburgh Sleep Quality Index (PSQI) questionnaire was used. This 19-item questionnaire assesses sleep quality in seven domains: subjective sleep quality, sleep latency, sleep duration, sleep efficiency, sleep disturbances, use of sleep medication, and daytime dysfunction. The total

score ranges from 0 to 21, where scores of 0-4 indicate good sleep quality, and scores of 5 and above indicate poor sleep quality. The validity and reliability of the PSQI have been confirmed in studies conducted by Farahi et al. (2009) and Salehi et al. (2010) in Iran, with reliability coefficients of 0.89 and 0.94, respectively (13, 14). The other tool used in this study was the Perceived Social Support Questionnaire, which was initially designed by Zimet et al. (1998) and assesses perceived social support in three domains: family, friends, and significant others. The items are rated on a 5-point Likert scale (1-5), ranging from "completely disagree" to "completely agree," with a total score range of 12-60. Higher scores indicate higher perceived social support. The main tool's reliability was confirmed with a Cronbach's alpha coefficient of 0.85-0.91, and test-retest reliability was 0.72-0.85 (15). In Iran, Yoosefi-Afrashteh (2023) reported a reliability coefficient of 0.75 for the overall scale (16), and Salimi et al. (2009) reported reliability coefficients of 0.86, 0.86, and 0.82 for the three mentioned dimensions, respectively (17).

By coordinating with the Health centers, the research objectives were presented to the participants in the current study. Due to the prevalence of COVID-19 and to reduce the risk of disease transmission, online questionnaires in the form of Google Forms were used. Participants, after being informed of the objectives, completed the informed consent form and relevant questionnaires, which were sent to them via a link while ensuring confidentiality. Participants were informed that the received information remained confidential.

The normality of the data was assessed using the Kolmogorov-Smirnov test. Due to the non-normal distribution of the data, non-parametric tests including Spearman's rank correlation, Mann-Whitney, and Kruskal-Wallis tests were used. Data analysis was conducted using SPSS software version 22.

Results

Among the 121 participants in the study, the majority of participants were female (83.5%, 101 individuals), had a bachelor's degree (84.3%, 102 individuals), were married (56.2%, 68 individuals), were married with children (61.7%, 42 individuals), worked as a healthcare professional (48.8%, 59 individuals), did not have a specific illness (95%, 115 individuals), did not have a specific substance addiction (97.5%, 118 individuals), and did not have a history of COVID-19 (59.5%, 72 individuals) (table 1).

Table 1. The Frequency Distribution of Demographic Characteristics of the Research Samples

Variable		Frequency	Frequency Percentage
Gender	Male	20	16.5
	Female	101	83.5
Education	Bachelor degree	102	84.3
	degree Master	2	1.7
	degree .D.Ph	17	14
Marital status	Married	68	56.2
	Single	53	43.8
Children	Married with children	42	61.7
	Married without children	26	38.3
Job	Physician	18	14.9
	Nurse	32	26.4
	Laboratory sciences	12	9.9
	Health care	59	48.8
Specific Disease Has a	Yes	6	5
	No	115	95
Is Addicted to a specific substance	Yes	3	2.5
	No	188	97.5
Has a history of corona infection	Yes	49	40.5
	No	72	59.5

The findings shows that among the study participants, 46.3% (56 individuals) experienced severe anxiety related to COVID-19, 90.1% (109 individuals) had poor sleep quality, and 79.3% (96 individuals) had high perceived social support (table 2).

According to Table 3, participants in the study received the highest social support from their families (table 3).

There is a significant positive correlation (p=0.001, r=0.817) between anxiety related to COVID-19 and sleep quality, a significant negative correlation (p=0.002, r=-0.278) between anxiety related to COVID-19 and perceived social support, and a significant negative correlation (p=0.002, r=-0.273) between sleep quality and perceived social support. This means that as anxiety related to COVID-19 increases, sleep quality worsens, and perceived social support decreases. Furthermore, with an increase in perceived social support, sleep quality improves (table 4).

Table 2. The Frequency Distribution of the Study Population based on the Variables of COVID-19 Anxiety, Sleep Quality, and Perceived Social Support

Variable	Rating	Frequency	Frequency percentage
Coronavirus anxiety	Mild	42	%34.7
	Medium	23	%19
	Intense	56	%46.3
Sleep Quality	Good	12	%9.9
	Bad	109	%90.1
Support Perceived Social	Low	4	%3.3
	Medium	21	%17.4
	High	96	%79.3

Table 3. The Mean Scores of Perceived Social Support and its Subscales in the Study Population

Index Variable	Minimum	Maximum	Mean ± standard deviation
Social support received from family	4	20	2.99 ± 15.79
Social support received from friends	4	20	4.19 ± 12.56
Social support received from others	4	20	3.49 ± 15.03
The total score of perceived social support	12	60	8.71 ± 43.38

Table 4. The Correlation between COVID-19 Anxiety, Sleep Quality, and Perceived Social Support among the Participants in the Study

	Coronavirus anxiety	Sleep Quality	Perceived social support			
	The correlation coefficient (R)	level of significance (value.P)	correlation coefficient (R)	level of significance (value.P)	correlation coefficient (R)	level of significance (value.P)
Coronavirus anxiety	1	-	0.817	0.0001	0.287-	0.002
Sleep quality	0.817	0.0001	1	-	0.273-	0.002
Perceived Social Support	0.278-	0.002	0.273-	0.002	1	-

Table 5. The Correlation between COVID-19 Anxiety, Sleep Quality, and Perceived Social Support with Quantitative Variables in the Study

	Coronavirus anxiety	Sleep Quality	Perceived Social Support			
	Correlation (R)coefficient	Significance (value.P) level	Correlation coefficient (R)	Significance (value.P)level	Correlation coefficient (R)	Significance (value.P)level
Age	0.614	0.0001	0.464	0.0001	0.096-	0.297

Table 6. The Correlation between COVID-19 Anxiety, Sleep Quality, and Perceived Social Support with Qualitative Variables in the Study

	Frequency	Coronavirus anxiety	Sleep Quality	Perceived social support				
		Mean ± standard deviation	Significance level (value.P)	Mean ± standard deviation	Significance level (value.P)	Mean ± standard deviation	Significance level (value.P)	
gender	male	20	± 16.05 9.66	0.0001	2.30 ± 7.65	0.001	± 43.75 9.87	0.706
	female	101	± 32.05 18.71		± 11.53 4.94		± 43.31 8.51	
Education	BA	102	± 30.95 19.18	0.187	± 11.10 4.91	0.130	± 44.11 8.31	0.003
	MA	2	4.24 ± 10		4.24 ± 3		0.7 ± 54	
	.D.Ph	17	± 25.11 13.31		± 10.52 3.57		± 37.70 8.92	
Marital status	Married	68	± 36.29 18.37	0.0001	± 12.22 4.68	0.001	± 43.73 6.53	0.732
	Single	53	± 21.43 15.25		4.50 ± 9.18		± 42.94 10.94	
Children	Married with children	42	± 43.78 16.47	0.0001	± 13.78 4.53	0.0001	± 43.33 6.39	0.976
	Married without children	26	± 24.19 14.61		3.77 ± 9.69		± 44.38 6.83	
Job	Physician	18	± 24.94 12.94	0.0001	± 10.16 3.79	0.0001	± 38.55 9.37	0.001
	Nurse	32	± 10.81 5.83		2.97 ± 6.65		± 48.06 7.15	
	Laboratory science	12	± 20.58 10.67		2.48 ± 9.16		± 40.33 10.89	
	Healthcare	59	± 43.42 14.51		± 13.76 4.36		± 42.94 7.74	
Has a specific disease	Infected	6	± 47.83 5.84	0.029	± 15.33 2.42	0.017	6.09 ± 43	0.792
	No infection	115	± 28.84 18.51		± 10.66 4.81		± 43.40 8.84	
Is addicted to a specific substance	Yes	3	05/17 ± 35	0.530	± 12.66 3.78	0.509	16.46 ± 33	0.226
	No addiction	188	± 29.65 18.63		± 10.84 4.85		± 43.65 8.38	
History of coronavirus	Yes	49	± 27.46 18.65	0.249	± 10.89 4.97	0.947	± 44.73 9.67	0.117

The results shows that there is a significant positive correlation (p=0.001, r=0.614) between anxiety related to COVID-19 and age, and a significant positive correlation (p=0.001, r=0.464) between sleep quality and age. This means that as age increases, anxiety related to COVID-19 and poor sleep quality also increases (table 5).

According to the data in Table 6, there is a correlation between gender and the variables of anxiety related to COVID-19 (p=0.001) and sleep quality (p=0.001). This means that women have higher levels of anxiety related to COVID-19 and poorer sleep quality compared to men. There is also a correlation between perceived social support and education (p=0.003), indicating that participants with a master's degree perceived higher levels of social support. There is a correlation between anxiety related to COVID-19 and marital status (p=0.001), as well as between sleep quality and marital status (p=0.001), indicating that married participants have higher levels of anxiety related to COVID-19 and poorer sleep quality compared to unmarried participants. Additionally, there is a correlation between anxiety related to COVID-19 and having children (p=0.001), as well as between sleep quality and having children (p=0.001), indicating that married participants with children have higher levels of anxiety related to COVID-19 and poorer sleep quality compared to married participants without children. The variables of anxiety related to COVID-19 (p=0.001), sleep quality (p=0.001), and perceived social support (p=0.001) are correlated with occupation. This means that healthcare providers have higher levels of anxiety related to COVID-19 and poorer sleep quality, while nurses perceive higher levels of social support. There is also a correlation between anxiety related to COVID-19 and having a specific illness (p=0.029), as well as between sleep quality and having a specific illness (p=0.017), indicating that participants with specific illnesses have higher levels of anxiety related to COVID-19 and poorer sleep quality compared to participants without specific illnesses. In the present study, the association between anxiety related to COVID-19, sleep quality, and perceived social support with specific substance addiction, as well as the association between anxiety related to COVID-19, sleep quality, and perceived social support with a history of COVID-19, was also examined, but no significant correlations were found (table 6).

Discussion

As mentioned, the findings of this study indicated that nearly half of the participants experienced severe COVID anxiety, which is consistent with the study by Martsenkovsky et al. (2022) in Ukraine (18). Additionally, in the study by Alnazly et al. (2020), approximately 60% of healthcare workers experienced severe anxiety during the COVID-19 pandemic (19), which is also reported in various other studies (20-23). However, the anxiety level among Chinese nurses one year after the pandemic was reported to be only 21%, and suggested that the measured decrease in anxiety levels could be attributed to the large sample size of 700 participants in that study (24). Furthermore, Nashwan et al. (2021) found that nurses in COVID-19 and non-COVID-19 units in Qatar did not perceive high levels of anxiety, and their anxiety levels were assessed as normal. The researchers of that study attributed this difference in results to the presence of administrative support, facilities, and equipment in Qatar (25).

Another finding of this study indicated that 90.1% of the participants had poor sleep quality. This rate of poor sleep quality among healthcare workers closely aligns with the findings of the studies by Tu et al. (2020) in China and Salaree et al. (2020) in Iran (22, 26). Various studies during the COVID-19 pandemic have reported poor sleep quality and insomnia among healthcare workers in countries such as Italy, Brazil, and the United States (27-30).

Another finding of this study demonstrated an inverse relationship between coronavirus anxiety, poor sleep quality, and perceived social support, such that an increase in coronavirus anxiety was associated with decreased sleep quality and perceived social support, while an improvement in sleep quality led to increased perceived social support. In Iran, Einy et al. (2020) concluded in their study on nurses that there is a significant inverse relationship between coronavirus anxiety and perceived social support (30). Another study in the Philippines acknowledged that nurses with higher perceived social support have lower levels

of COVID anxiety (31). In line with this, Xiao et al. (2020) demonstrated that social support reduces anxiety and stress among healthcare workers (3). Similar findings were observed in the study by Ortiz-Calvo et al. (2022), which aimed to investigate the impact of perceived social support and resilience on the mental health of Spanish healthcare providers during the COVID-19 pandemic, indicating an inverse relationship between perceived social support and negative mental health outcomes (10).

A study conducted in Turkey on healthcare workers aimed to investigate sleep quality identified high levels of social support, including family support, as important protective factors against poor sleep quality (32). In other non-healthcare groups during the COVID-19 outbreak, Grey et al. (2020) acknowledged that for individuals with high social support, reports of low sleep quality were lesser by 50%, when compared to individuals without that level of social support (9). Furthermore, an inverse significant relationship between perceived social support and insomnia was reported among Chinese students (6, 11). Overall, the findings of these studies align with the findings of the present study.

Conclusion

A significant number of healthcare workers have experienced COVID-19 anxiety and poor sleep quality, which can lead to excessive worrying and a decrease in the quality of healthcare services provided, directly impacting the overall health of the community. Based on the findings, perceived social support is associated with COVID-19 anxiety and sleep quality. It should be noted that the existing research on the relationship between perceived social support, COVID-19 anxiety, and specifically sleep quality in healthcare workers is insufficient. Because this is a crucial issue, it is recommended that the psychological well-being of healthcare workers be periodically assessed, even in the post-pandemic period. This will enable them to better cope with potential future pandemics or crises.

Ethics Committee Approval: This study was conducted under the Declaration of Helsinki. All Intervention performed in the current study were in accordance with the Ethics committee of Shiraz University of Medical Sciences (approval number: IR.SUMS.REC.1400.239). **Informed Consent:** Written informed consent was obtained from the participants who agreed to take part in the study. **Author Contributions:** F V, R D, M A and S RK: Conceptualization, Methodology, Software , Data curation, Writing- Original draft preparation, Visualization, Investigation, Supervision, Validation, Writing- Reviewing and Editing. S Y: Conceptualization, Methodology, Investigation, Supervision. **Declaration of Interests:** The authors have no conflict of interest to declare .**Funding:** This study financially supported by the Vice-chancellor of research Shiraz University of Medical Sciences (grant No.22682). The funder had no role in the design of the study, nor in the collection, analysis, and interpretation of the data and in writing the manuscript. **Acknowledgments** This article is part of the thesis of Mr. Mohsen Atefatdoust, a student of Community Health Nursing, which was conducted with the financial support of the Research Deputy of Shiraz University of Medical Sciences (Project ID: 22682). The financial supporter had no role in the study design, data collection, analysis and interpretation, and writing of the manuscript. **Funding Source** This study financially supported by the Vice-chancellor of Research Shiraz University of Medical Sciences (Project ID: 22682) and (approval number: IR.SUMS.REC.1400.239). The funder had no role in the design of the study, nor in the collection, analysis, and interpretation of the data and in writing the manuscript.

References

1. Seidi PAM, Ardebil MD, Jaff D. COVID-19 pandemic: New challenge to securing mental well-being in conflict settings. Asian J Psychiatr. 2020;51:102151.
2. Barbosa-Camacho FJ, Romero-Limon OM, Ibarrola-Pena JC, Almanza-Mena YL, Pintor-Belmontes KJ, Sanchez-Lopez VA, et al. Depression, anxiety, and academic performance in COVID-19: a cross-sectional study. BMC Psychiatry. 2022;22(1):443.
3. Xiao H, Zhang Y, Kong D, Li S, Yang N. The Effects of Social Support on Sleep Quality of Medical Staff Treating Patients with Coronavirus Disease 2019 (COVID-19) in January and February 2020 in China. Med Sci Monit. 2020;26:e923549.

4. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, et al. Factors Associated With Mental Health Outcomes Among Health Care Workers Exposed to Coronavirus Disease 2019. JAMA Netw Open. 2020;3(3):e203976.
5. Azizi M, Kamali M, Moosazadeh M, Aarabi M, Ghasemian R, Hasannezhad Reskati M, et al. Assessing mental health status among Iranian healthcare workers in times of the COVID-19 pandemic: A web-based cross-sectional study. Brain Behav. 2021;11(8):e2304.
6. Zhan J, Chen C, Yan X, Wei X, Zhan L, Chen H, et al. Relationship between social support, anxiety, and depression among frontline healthcare workers in China during COVID-19 pandemic. Front Psychiatry. 2022;13:947945.
7. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsi E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. Brain Behav Immun. 2020;88:901-7.
8. Gupta N, Luthra A, Shailaja B, Chaudhury S, Saldanha D. Impact of COVID-19 pandemic on mental health of health-care workers in a tertiary care teaching and dedicated COVID-19 hospital. Ind Psychiatry J. 2021;30(Suppl 1):S56-S62.
9. Grey I, Arora T, Thomas J, Saneh A, Tohme P, Abi-Habib R. The role of perceived social support on depression and sleep during the COVID-19 pandemic. Psychiatry Res. 2020;293:113452.
10. Ortiz-Calvo E, Martinez-Ales G, Mediavilla R, Gonzalez-Gomez E, Fernandez-Jimenez E, Bravo-Ortiz MF, et al. The role of social support and resilience in the mental health impact of the COVID-19 pandemic among healthcare workers in Spain. J Psychiatr Res. 2022;148:181-7.
11. Zhao G, Xie F, Li S, Ding Y, Li X, Liu H. The relationship between perceived social support with anxiety, depression, and insomnia among Chinese college students during the COVID-19 pandemic: The mediating role of self-control. Front Psychiatry. 2022;13:994376.
12. Alipour A, Ghadami A, Alipour Z, Abdollahzadeh H. Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample. Health Psychology. 2020;8(32):163-75.
13. Farrahi J, Nakhaee N, Sheibani V, Garrusi B, Amirkafi A. Psychometric properties of the Persian version of the Pittsburgh Sleep Quality Index addendum for PTSD (PSQI-A). Sleep Breath. 2009;13(3):259-62.
14. Salehi K, Alhani F, SADEGH NK, MAHMOUDIFAR Y, ROUHI N. Quality of sleep and related factors among Imam Khomeini hospital staff nurses. 2010.
15. Zimet GD, Powell SS, Farley GK, Werkman S, Berkoff KA. Psychometric characteristics of the Multidimensional Scale of Perceived Social Support. J Pers Assess. 1990;55(3-4):610-7.
16. Yousefi Afrashteh M, Abbasi M, Abbasi M. The relationship between meaning of life, perceived social support, spiritual well-being and pain catastrophizing with quality of life in migraine patients: the mediating role of pain self-efficacy. BMC Psychol. 2023;11(1):17.
17. Salimi A, Jokar B, Nikpour R. Internet communication in life: The role of perceived social support and loneliness in the use of the internet. Psychological studies. 2009;5(3):81-102.
18. Maheri A, Sadeghi R, Shojaeizadeh D, Tol A, Yaseri M, Rohban A. Depression, Anxiety, and Perceived Social Support among Adults with Beta-Thalassemia Major: Cross-Sectional Study. Korean J Fam Med. 2018;39(2):101-7.
19. Martsenkovskyi D, Babych V, Martsenkovska I, Napryeyenko O, Napryeyenko N, Martsenkovsky I. Depression, anxiety, stress and trauma-related symptoms and their association with perceived social support in medical professionals during the COVID-19 pandemic in Ukraine. Postep Psychiatr Neurol. 2022;31(1):6-14.
20. Alnazly E, Khraisat OM, Al-Bashaireh AM, Bryant CL. Anxiety, depression, stress, fear and social support during COVID-19 pandemic among Jordanian healthcare workers. PLoS One. 2021;16(3):e0247679.
21. Tu ZH, He JW, Zhou N. Sleep quality and mood symptoms in conscripted frontline nurse in Wuhan, China during COVID-19 outbreak: A cross-sectional study. Medicine (Baltimore). 2020;99(26):e20769.
22. Chen X, Liu P, Lei GF, Tong L, Wang H, Zhang XQ. Sleep Quality and the Depression-Anxiety-Stress State of Frontline Nurses Who Perform Nucleic Acid Sample Collection During COVID-19: A Cross-Sectional Study. Psychol Res Behav Manag. 2021;14:1889-900.
23. Hou T, Yin Q, Xu Y, Gao J, Bin L, Li H, et al. The Mediating Role of Perceived Social Support Between Resilience and Anxiety 1 Year After the COVID-19 Pandemic: Disparity Between High-Risk and Low-Risk Nurses in China. Front Psychiatry. 2021;12:666789.
24. Nashwan AJ, Villar RC, Al-Qudimat AR, Kader N, Alabdulla M, Abujaber AA, et al. Quality of Life, Sleep Quality, Depression, Anxiety, Stress, Eating Habits, and Social Bounds in Nurses during the Coronavirus Disease 2019 Pandemic in Qatar (The PROTECTOR Study): A Cross-Sectional, Comparative Study. J Pers Med. 2021;11(9).
25. Salaree MM, Rahmati F, Parandeh A. Comparison of sleep quality and its related factors in nurses

before and at the same time with the COVID-19 epidemic. Journal of Military Medicine. 2021;23(5):395-403.
26. Lino JA, LG CGF, AP VA, Cavalheri V, Mont'Alverne DGB, Mesquita R. Sleep quality and associated factors amongst Brazilian physiotherapists during the COVID-19 pandemic. Physiother Theory Pract. 2022;38(13):2612-20.
27. Andrechuk CRS, Caliari JS, Santos MAD, Pereira FH, Oliveira HC, Ceolim MF. The impact of the COVID-19 pandemic on sleep disorders among Nursing professionals. Rev Lat Am Enfermagem. 2023;31:e3795.
28. Simonetti V, Durante A, Ambrosca R, Arcadi P, Graziano G, Pucciarelli G, et al. Anxiety, sleep disorders and self-efficacy among nurses during COVID-19 pandemic: A large cross-sectional study. J Clin Nurs. 2021;30(9-10):1360-71.
29. Diaz F, Cornelius T, Bramley S, Venner H, Shaw K, Dong M, et al. The association between sleep and psychological distress among New York City healthcare workers during the COVID-19 pandemic. J Affect Disord. 2022;298(Pt A):618-24.
30. Eyni S, Ebadi M, Hashemi Z. Corona anxiety in nurses: The predictive role of perceived social support and sense of coherence. Iranian Journal of Psychiatry and Clinical Psychology. 2020;26(3):320-31.
31. Yilmaz M, Kirac Y, Sahin MK. Sleep quality and related factors in a sample of Turkish healthcare workers during the COVID-19 pandemic: A cross-sectional study. Int J Clin Pract. 2021;75(11):e14813.
32. Wang MF, He Q, Liu Z, Du YL, Wu C, Lang HJ, et al. The relationship between perceived organizational support and insomnia in Chinese nurses: The Serial multiple mediation analysis. Front Psychol. 2022;13:1026317.

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