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Research Paper

Organizational Climate and Psychological Resilience among Staff of an Educational Hospital in Iran

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ABSTRACT

Aims Hospitals and medical staff play a major role in managing the COVID-19 pandemic. The present study aimed to evaluate the psychological resilience of the staff and the organizational climate of Allameh Behlool Hospital in Gonabad and the relationship between the two during the COVID-19 pandemic.

Materials & Methods The present cross-sectional study was conducted in Autumn 2021 with 300 employees of Allameh Behlool Hospital in Gonabad. Connor-Davidson Resilience Scale and Lyle Sussman and Sam Deep's Organizational Climate Questionnaire were utilized for data collection. Multiple linear regression was used to estimate the association between organizational climate and psychological resilience. The data analysis was conducted using Stata 15.

Findings Based on the obtained findings, the Mean (SD) age of participants was 34.05 (7.50) years, and their work experience averaged 9.22 (6.94) years. Psychological resilience and organizational climate had a Mean (SD) score of 66.04 (11.92) and 53.83 (14.72), respectively. A significant positive correlation was found between age, work experience, and psychological resilience. The multiple linear regression analysis showed that after controlling for the effects of age and work experience, there was a significant positive association between the organizational climate and the psychological resilience of the hospital staff.

Conclusion This study found a significant positive association between organizational climate and psychological resilience among the hospital staff. Specifically, factors such as clarity of goals, role clarity, satisfaction with rewards, effective communication, and agreement on procedures contributed to greater resilience. These findings underscore the importance of adopting an integrated approach that considers the dimensions of organizational climate to enhance the resilience of the hospital staff, ultimately improving the hospital management to better prepare for crises.

Key words:
COVID-19,
Crisis management,
Hospital,
Organizational climate,
Psychological resilience

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مقاله پژوهشی

جوّ سازمانی و تاب‌آوری روان‌شناختی کارکنان یک بیمارستان آموزشی در ایران

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چکیده

هدف بیمارستان‌ها و کادر درمان نقش مهمی در مدیریت همه‌گیری کووید ۱۹ داشته‌اند. هدف مطالعه حاضر ارزیابی جوّ سازمانی و تاب‌آوری روان‌شناختی کارکنان بیمارستان علامّه بهلول شهرستان گناباد و ارتباط این دو در دوره همه‌گیری کووید ۱۹ است.

مواد و روش ها این مطالعه مقطعی با مشارکت ۳۰۰ نفر از کارکنان بیمارستان علامّه بهلول شهر گناباد در پاییز سال ۱۴۰۰ انجام شد. برای جمع‌آوری داده‌ها، از ابزار مقیاس تاب‌آوری کانر- دیویدسون (Connor-Davidson) و پرسش‌نامه جوّ سازمانی لایل ساسمن و سام دیپ (Lyle Sussman and Sam Deep) و برای برآورد ارتباط بین جوّ سازمانی و تاب‌آوری روانی از رگرسیون خطّی چندگانه استفاده شد. تجزیه‌وتحلیل داده‌ها با استفاده از برنامه Stata 15 انجام گرفت.

یافته‌ها میانگین و انحراف‌معیار سنّ پاسخ‌گویان ۷.۵۰± ۳۴.۰۵ و میانگین و انحراف‌معیار سابقه شغلی پاسخ‌گویان ۶.۹۴± ۹.۲۲ بود. میانگین و انحراف‌معیار تاب‌آوری روان‌شناختی و جوّ سازمانی به ترتیب ۱۱.۹۲± ۶۶.۰۴ و ۱۴.۷۲± ۵۳.۸۳ بوده است. دو متغیّر سن و ابعاد جوّ سازمانی هم‌بستگی مثبت معناداری با تاب‌آوری روان‌شناختی کارکنان نشان دادند. نتیجه تحلیل رگرسیون خطّی نشان داد با کنترل اثر سن و سابقه شغلی، جوّ سازمانی ارتباط مثبت و معناداری با تاب‌آوری روان‌شناختی شاغلان در این بیمارستان دارد.

نتیجه گیری نتایج نشان می‌دهد کارکنانی که درک مثبت‌تری از جوّ سازمانی دارند، سطح بالاتری از تاب‌آوری روان‌شناختی را نیز گزارش کرده‌اند. به‌طور خاص، عواملی مانند وضوح و روشنی اهداف، وضوح و روشنی نقش، رضایت از پاداش، رضایت و توافق بر روی رویّه‌ها و اثربخشی ارتباطات می‌تواند بهبود تاب‌آوری روان‌شناختی کارکنان بیمارستان را به همراه داشته باشد. این یافته‌ها بر اهمیت اتّخاذ یک رویکرد یکپارچه تأکید می‌کند که مؤلّفه‌های جوّ سازمانی را برای افزایش تاب‌آوری روان‌شناختی کارکنان بیمارستان در نظر می‌گیرد و درنهایت مدیریت بیمارستان برای آمادگی بهتر در برابر بحران‌ها را بهبود می‌بخشد.

کلیدواژه‌ها:
بیمارستان،
تاب‌آوری،
جوّ سازمانی ،
کووید ۱۹،
مدیریت بحران

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Introduction

Hospitals and health centers are among the institutions that play a pivotal role in reducing mortality in accidents and disasters by providing optimal and timely healthcare services [1]. The COVID-19 pandemic put an unprecedented pressure on healthcare systems, and created serious problems for hospitals worldwide [2] by overcrowding intensive care unit beds [3], putting an excessive work-load on medical staff to treat COVID-19 patients [4] and causing high levels of stress to hospital staff during this time [5]. The COVID-19 pandemic created an atmosphere of uncertainty among individuals and placed a significant burden on their internal resources to meet the challenges posed by this crisis [6].

Psychological resilience, which refers to the ability to cope effectively or successfully with adverse conditions [7], is a main goal pursued by the UN Guide (2030) to achieve sustainable development [8]. Additionally, the enhancement of psychological resilience serves as a major stress inhibitor. Resilience plays an important role in helping people cope with crises and unexpected conditions, such as the COVID-19 pandemic, and allows employees to focus on their job tasks and duties [9]. If medical staff lack adequate resilience, it means that not only do they struggle to recover after experiencing stress, but they may also constantly develop negative emotions and, even in severe cases, develop mental disorders [10]. COVID-19 reminded us of the need to improve resilience, with some studies evaluating the resilience of people providing care services in hospitals [11]. Some others focused on psychological interventions to enhance their resilience [12, 13]. Certain programs specifically aim to increase healthcare providers' psychological resilience and significantly reduce the adverse effects on mental health [14].

Another important concept that goes beyond the psychological level and addresses the characteristics of the organization - here specifically hospitals - is the organizational climate. All processes and employee behaviors are formed by the features of organizational climate [15]. Organizational climate is defined as the organizational members' common understanding of the events, policies and practices they experience and the behaviors they show that are rewarded, supported, and expected [16]. The perception of a supportive and constructive atmosphere within an organization leads the work staff to experience a higher level of productivity and also promotes their loyalty and stability [17]. Studies have shown that in hospitals where staff perceptions of organizational climate are more positive, information is shared more efficiently [18]. In a previous study, a significant negative correlation was found between job satisfaction and organizational climate, and job stress. Specifically, nurses working in COVID-19 wards reported low job satisfaction, high job stress, and a moderate perception of their organizational climate [19]. Understanding the holistic nature of organizational climate requires further research on working conditions, employees' lives, and their management skills in hospital settings [20]. Healthcare workers, who are at the forefront of the fight against COVID-19, are not immune to the psychological consequences of the pandemic [21] .

This study examines the relationship between organizational climate and the psychological resilience of staff at Allameh Behlool Hospital, a general hospital in Gonabad and one of the largest educational and medical centers in southern Khorasan Razavi province. Our findings aim to provide insights into the organizational factors that influence employee mental well-being, particularly in the context of the challenges posed by the pandemic.

Materials and Methods

This cross-sectional study was conducted in one of the educational, research-based and medical hospitals in Gonabad city in 2021. Data collection was done after making necessary arrangements, obtaining permission from the Ethics Committee of Gonabad University of Medical Sciences (IR.GMU.REC.1400.023), and obtaining consent from the participants. Participants were assured that the information is confidential and the study was conducted according to ethical research standards.

The sample size was determined to be 219 using the formula below and a previous study [22]; accounting for a 20% loss, a minimum of 264 participants is required.

Z α =1.96, Z β =0.84 (Power 80%), σ =15.84, mean=63.10, E =3. Refer to the references concerning this issue[23].

$$n = \left(\frac{(Z_{1-\alpha/2} + Z_{1-\beta}) * \sigma}{E} \right)^2$$

Study area and population

The Allameh Behlool Gonabadi Hospital, located in Khorasan Razavi province, is a leading general hospital featuring 320 beds. The seven-story structure, spanning 80,000 sqm, includes 24,000 sqm allocated to the inner building. It encompasses emergency and air emergency wards, four surgical and three internal wards, and various special care departments, making it a comprehensive healthcare facility in the region.

Data collection and measurements

Data were collected through paper-based questionnaire comprised of several parts :A) Sociodemographic questionnaire. B) Connor-Davidson Resilience Scale (CD-RIS): The CD-RIS scale aimed to measure resilience by examining five factors: tenacity and competence, trusting in one's instincts and tolerating negative affect, accepting of

change and secure within relationships, control, and spirituality. This questionnaire comprises 25 items that are scored on a 5-point Likert scale ranging from not true at all or zero to true nearly all the time or 4. The score range on CD-RIS scale is 0-100. The higher the overall score on this scale, the greater the respondent's resilience, and vice versa [24]. Bigdeli et al. reported the internal consistency of this scale using Cronbach's alpha and the estimated value was 0.9 [25]. Campbell-Silles et al. standardized the initial draft of the resilience scale by selecting 10 items out of 25 items on a sample of 511 participants. The construct validity of the new resilience scale was tested using a confirmatory factor analysis. For every 10 questions, the factor loading was between 44 to 93%, which indicates a desired and acceptable construct validity of the scale [26].

C) Organizational Climate scale: This scale developed by Lyle Sussman and Sam Deep contains 20 questions, which aims to explore the five dimensions of organizational climate (clarity of goals, the clarity of role, satisfaction of rewards, effectiveness of communications, and agreement on procedures). The questions are to be rated on a 5-point Likert scale (fully disagree=0, disagree=1, no idea= 2, agree=3, entirely agree=4). Each dimension can receive a score between 0 and 16. The total score range on this scale is 0-80.

To validate the questionnaire content, a panel of experts (n=13) was consulted. The panel comprised of specialists in human resource management and hospital executive management. They were asked to comment on the relevance of the items to each other as well as the overall construct. They also rated the clarity of content. To substantiate the reliability and the internal consistency of the questionnaire, before the main data collection phase, it was piloted on 50 hospital staff. These respondents were later on excluded from the main participants. The results were compared to the results obtained from the main data collection phase, to test the test-retest reliability. The overall Cronbach's alpha was estimated at.91. That of every dimension of organizational climate, including clarity of goals, the clarity of role, satisfaction of rewards, effectiveness of communications, and agreement on procedures was, respectively,.72,.76,.73,.81 and.56 [27]. The participants were selected through convenience sampling.

Data analysis

Descriptive statistics for categorical variables were reported using frequencies and percentages. Continuous variables were described as means and standard deviations (SDs). The relationship between socio-demographic characteristics and the resilience were assessed using Spearman correlation, Mann-Whitney test, and Kruskal-Wallis test, due to violations of the normality assumption.

Multiple linear regression analysis was used to predict the respondents' organizational resilience based on the perceived organizational. Data analysis was done using STATA 15.

Results

During the COVID-19 pandemic, a total of 300 staff members from Allameh Behlool Hospital participated in this study. Table 1 shows the socio-demographic characteristics of the participants and their association with resilience, analyzed through Spearman correlation, Mann-Whitney test, and Kruskal-Wallis test. The participants had a median age of 33 years (IQR=28-40), with ages ranging from 22 to 60 years. They also had a median work experience of 7 years (IQR=3-14.5), with experience ranging from 1 to 30 years. Females comprised 54% of the participants. The majority (67%) of participants held a bachelor's degree. Over half (59.67%) of the participants worked rotating shifts, and nurses and midwives constituted nearly half (49%) of the study sample. Table 1 shows the characteristics of the study participants and their relationship with resilience.

A Spearman correlation analysis revealed a statistically significant relationship between age and participant resilience (rho=0.16, P<0.01). However, no significant relationship was identified between work experience and resilience (P=0.09).

Table 1 shows that there was no statistically significant relationship between other characteristics and the respondents' perceived psychological resilience.

Table 2 describes participants' perceived resilience and organizational climate. The mean psychological resilience was 66.04, and the mean organizational climate was 53.83; both scores were higher than the average level.

Table 3 presents a significant positive correlation between perceived organizational dimensions and psychological resilience (P<0.05). The linear regression analysis revealed in Table 4 a significant positive association between organizational climate and psychological resilience among the hospital staff, after controlling for age and work experience (P=0.001). This indicates that a more positive perception of the organizational climate is associated with higher levels of resilience. Overall, we found a significant positive correlation between staff age and resilience, suggesting that older staff members may experience higher levels of resilience. Regarding the main objective of our research, we found that a positive organizational climate is associated with increased resilience. Regression analysis also indicated that a positive perception of the organizational climate is significantly associated with higher resilience levels, after controlling for age and work experience. However, the adjusted R^2 value in the regression model is as low as 0.1, it indicating that the model explains only 10% of the variance in the dependent variable.

The findings will be discussed in detail in the next section.

Table 1. Characteristics of study participants and their association with resilience (n=300)

	Participants characteristics Median (IQR) or N (%)	Resilience Median (Q1-Q3)	*P*-value
Sex			
Female	162 (54.0)	65 (60-71)	*P*=0.47[a]
Male	128 (42.67)	65.5 (61.5-72.5)	
Not reported	10 (3.33)	70.5 (62-78)	
Education			
≤High School Diploma	52 (17.33)	65 (63-72.5)	
Associate degree	12 (4.0)	73 (63-84.5)	
Bachelor's degree	201(67.0)	66 (60-71)	*P*=0.22[b]
Master's degree	15(5.0)	57 (55-74)	
Docttoral degrees	9 (3.0)	70 (64-72)	
Not reported	11 (3.67)	65 (62-77)	
Types of work shifts		66 (61-74)	
First shift	84(28)	64.5 (57-72)	
Fixed shift	18(6.0)	65 (60-71)	*P*=0.51[b]
Rotating shift	179 (59.67)	65 (61-73)	
Not reported	19 (6.33)	66 (61-74)	
Job categories		66 (63-72)	
Physician	9 (3.0)	65.5 (60-72)	
Nurse, midwife	147 (49.0)	66 (59-70)	
Official (white-color worker)	54 (18.0)	65 (63-74)	
Maintenance	46 (15.33)	66 (57-70)	*P*=0.64[b]
Paraclinical	6 (2.0)	74 (73-78)	
Security guard	9 (3.0)	74.5 (61-83.5)	
Not reported	29 (9.6)	64 (62-73)	

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a: Mann-Whitney test; b: Kruskal-Wallis test

Table 2. Perceived organizational climate and resilience

Variable	N	Median	Q1-Q3	Min	Max
Psychological resilience	299	65	61-72	18	98
Organizational climate	273	55	43-67	13	80

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Table 3. Correlation between the dimensions of organizational climate and resilience

Organizational climate components	Value rho*	*P*-value
Clarity of goals	0.25	0.001
Clarity of role	0.39	0.001
Satisfaction of rewards	0.15	0.009
Agreement on procedures	0.20	0.001
Effectiveness communications	0.26	0.001

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*Sparman Correlation

Table 4. Linear regression analysis of the organizational climate and resilience

Variables	B (std. err.)	*P*-value
Age	0.24 (0.20)	0.21
Work experience	-0.06 (0.21)	0.76
Organizational climate	0.24 (0.05)	0.001
Constant	45.03 (5.68)	0.001
Adjusted r2	0.10	
RMSE	11.20	

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Discussion

The present study aimed to evaluate the level of psychological resilience among the staff of Allameh Behlool Hospital in Gonabad and its association with the perceived organizational climate during the COVID-19 pandemic in 2021. Overall, the psychological resilience and organizational climate among the participants was above average during the COVID-19 pandemic. The results of the regression analysis showed a significant positive relationship between organizational climate and psychological resilience among the hospital staff. This suggests that staff members who reported greater clarity of organizational goals, clear understanding of their roles, satisfaction with rewards received, effective communication, and agreement on work procedures, also

tended to have higher levels of psychological resilience.

In this study, the hospital staffs' psychological resilience was slightly above average (66.04). A similar study reported a relatively good level of psychological readiness of the hospital's emergency staff in the face of COVID-19 [28]. In another study of 600 medical workers in China, the mean score of perceived psychological resilience was reported as 65.76. According to this study, providing adequate equipment and protective materials is a must to warrant medical staff's personal security and the staff should be trained to use them efficiently [29]. In another study among nurses, their mean score of psychological resilience was estimated at 78.22. As this study showed, high resilience promotes physical and mental health and can be improved by teaching psychological interventions and the full use of hospital resources [30]. The results of the bivariate analysis in the present study revealed a significant positive correlation between age and psychological resilience. Psychological resilience increased with age, although the effect size was small. This finding can be attributed to individuals' accumulated experiences with crises, which likely enhanced their ability to cope with emergent conditions. In a related study, high perceived stress, feminine gender identification, lack of awareness regarding COVID-19 protective measures, and insufficient access to protective materials for employees exhibited a significant negative correlation with resilience [29].

In this study, the mean score of perceived organizational climate was also higher than the average level. In a study conducted on the nurses of the COVID-19 ward, they evaluated the organizational atmosphere as average [15]. In a study, nurses' perceived organizational climate in Myanmar hospitals was assessed with a focus on nurses' working conditions and their management in hospital settings [20]. In another study on 5,117 nursing staff in Japan, the organizational climate of hospitals was found to be moderate to high. Employees' perception of the organizational climate varied significantly concerning working conditions (full-time vs. part-time) and positions (nurse vs. assistant nurse) in hospitals and wards. However, in the present study, no statistically significant difference was found between the various work shifts and the perceived organizational climate. This may be attributed to the heavy workload experienced across all work shifts during the pandemic. This lack of correlation might be due to the heavy workload of all work shifts during the pandemic. A careful investigation of this issue requires further research.

Our findings reveal that the perceived organizational climate among hospital staff is correlated with their psychological resilience, and this correlation is statistically significant. Therefore, the more positive the perception of organizational climate, the more the psychological resilience. This relationship was significant for all perceived organizational climate dimensions, including clarity of goals, the clarity of role, satisfaction of rewards, the effectiveness of communications, and agreement on procedures with psychological resilience. Numerous studies have reported organizational and managerial factors associated with psychological resilience and found it to the benefit of the organization [31]. A study conducted in Iran has also shown that organizational factors such as lack of resources, interactive relationships with other employees, interpersonal conflicts, and organizational policies, have affected the physical and mental health of healthcare workers during the period of COVID-19 [32].

Recent research found a relationship between job resources, support, and the promotion of resilience during the COVID-19 pandemic [6]. Furthermore, evidence indicates the substantial positive influence of the organizational climate on job commitment, motivation, satisfaction, and organizational behavior in Iranian hospitals [19, 33-37]. Each of these variables may play a mediating role in enhancing staff resilience and warrants further investigation in future studies. Notably, the effect of organizational climate on employee behavior is often mediated by psychological factors. For instance, in a separate study, the connection between a learning-oriented organizational climate and active behaviors among staff was explored, highlighting its role in bolstering resilience [38]. The results of another study showed that organizational membership behavior is shown only if the supportive organizational climate becomes the staff's psychological capital [39]. This is indicative of the interaction of organizational and individual levels with each other, which can be the focus of future studies.

Conclusion

This study investigated the relationship between organizational climate and psychological resilience among staff at an educational hospital in Gonabad during the COVID-19 pandemic. Our findings suggest a significant positive association between organizational climate and psychological resilience among staff. These findings highlight the importance of fostering a positive work environment to support staff well-being and resilience, particularly during crises. Given that the components of organizational climate were significantly correlated with participants' resilience, specific interventions to enhance resilience might include improving clarity and communication, enhancing reward systems, promoting effective communication, and providing training programs and resources focused on stress management, coping mechanisms, and resilience.

By adopting an integrated approach that addresses the

psychological well-being of staff and the organizational climate, healthcare leaders can create a more supportive and resilient workforce, enhancing the organization's ability to manage future challenges.

Ethical Considerations

Compliance with ethical guidelines

The regional Ethics Committee of Gonabad University of Medical Sciences approved this study under the Ethics Code IR.GMU.REC.1400.023.

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Authors' contributions

All authors contributed to this article.

Conflicts of interest

The authors declare that they have no conflict of interest.

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References

[1] Wong MC, Teoh JY, Huang J, Wong SH. The potential impact of vulnerability and coping capacity on the pandemic control of COVID-19. The Journal of Infection. 2020.[DOI:10.1016/j.jinf.2020.05.060]
[2] Thomas S, Sagan A, Larkin J, Cylus J, Figueras J, Karanikolos M. Strengthening health systems resilience: key concepts and strategies. 2020.[PMID]
[3] Carenzo L, Costantini E, Greco M, Barra F, Rendiniello V, Mainetti M, et al. Hospital surge capacity in a tertiary emergency referral centre during the COVID-19 outbreak in Italy. Anaesthesia. 2020;75(7):928-34. [DOI: 10.1111/anae.15072] [PMID]
[4] Fan J, Hu K, Li X, Jiang Y, Zhou X, Gou X, et al. A qualitative study of the vocational and psychological perceptions and issues of transdisciplinary nurses during the COVID-19 outbreak. Aging (Albany NY). 2020;12(13):12479. [DOI: 10.18632/aging.103533] [PMID] [PMCID]
[5] Mohammadzadeh F, Delshad Noghabi A, Bazeli J, Karimi H, Aalami H. Stressors and Coping Strategies During the Outbreak of Coronavirus Disease 2019 Among Hospital Staff: A Case Study in Iran. Horizon Med Sci. 2021;27(2):148-63. [DOI: 10.32598/hms.27.2.3289.1]
[6] Ojo AO, Fawehinmi O, Yusliza MY. Examining the predictors of resilience and work engagement during the COVID-19 pandemic. Sustainability. 2021;13(5):2902. [DOI: 10.3390/su13052902]
[7] Rutter M, Sroufe LA. Developmental psychopathology: Concepts and challenges. Development and psychopathology. 2000;12(3):265-96. [DOI: 10.1017/s0954579400003023] [PMID]
[8] Zabaniotou A. A systemic approach to resilience and ecological sustainability during the COVID-19 pandemic: Human, societal, and ecological health as a system-wide emergent property in the Anthropocene. Global transitions. 2020;2:116-26. [DOI: 10.1016/j.glt.2020.06.002] [PMID] [PMCID]
[9] Steinkopf B, Reddin RA, Black RA, Van Hasselt VB, Couwels J. Assessment of stress and resiliency in emergency dispatchers. Journal of police and criminal Psychology. 2018;33(4):398-411. [DOI:10.1007/s11896-018-9255-3]
[10] Huang JZ, Han M, Luo T, Ren A, Zhou X. Mental health survey of 230 medical staff in a tertiary infectious disease hospital for COVID-19. Zhonghua lao dong wei sheng zhi ye bing za zhi= Zhonghua laodong weisheng zhiyebing zazhi= Chinese journal of industrial hygiene and occupational diseases. 2020;38:E001-E.[DOI: 10.3760/cma.j.cn121094-20200219-00063]
[11] Folke C. Resilience: The emergence of a perspective for social–ecological systems analyses. Global environmental change. 2006;16(3):253-67.[DOI: 10.1016/j.gloenvcha.2006.04.002]
[12] Hynes W, Trump B, Love P, Linkov I. Bouncing forward: a resilience approach to dealing with COVID-19 and future systemic shocks. Environment Systems and Decisions. 2020;40:174-84. [DOI: 10.1007/s10669-020-09776-x] [PMID] [PMCID]
[13] Organization WH. WHO. WHO Director-General's opening remarks at the media briefing on COVID 19. 11 March 2020, [Internet]. Genebra: World Health Organization; 2020. [Link]
[14] He Z, Chen J, Pan K, Yue Y, Cheung T, Yuan Y, et al. The development of the'COVID-19 Psychological Resilience Model'and its efficacy during the COVID-19 pandemic in China. International Journal of Biological Sciences. 2020;16(15):2828. [DOI: 10.7150/ijbs.50127] [PMID] [PMCID]
[15] Manning L. Moving from a compliance-based to an integrity-based organizational climate in the food supply chain. Comprehensive Reviews in Food Science and Food Safety. 2020;19(3):995-1017.[DOI: 10.1111/1541-4337.12548] [PMID]
[16] Schneider B, Ehrhart MG, Macey WH. Organizational climate and culture. Annual review of psychology. 2013;64:361-88.[DOI:10.1146/annurev-psych-113011-143809]
[17] Sein Myint NN, Kunaviktikul W, Stark A, editors. A contemporary understanding of organizational climate in healthcare setting: A concept analysis. Nursing forum; 2021: Wiley Online Library.[DOI: 10.1111/nuf.12513] [PMID]
[18] Gu X, Itoh K. Organizational climate for safe and effective inter-unit handoffs in Japanese hospitals. The International Journal of Health Planning and Management. 2021;36(4):1153-65.[DOI: 10.1002/hpm.3162] [PMID]
[19] AbediKooshki S, roohafzaei S, shahdousti H. Relationship between organizational climate, job stress and job satisfaction in nurses of Covid-19 ward of Imam Khomeini Esfarayen hospital. SJNMP. 2021;7(2):34-46. [Link]
[20] Sein Myint NN, Kunaviktikul W, Akkadechanunt T, Wichaikhum OA, Turale S. Nurses' Qualitative Descriptions of the Organizational Climate of Hospitals. Journal of Nursing Scholarship. 2021;53(4):490-9. [DOI: 10.1111/jnu.12645] [PMID]
[21] Labrague LJ. Psychological resilience, coping behaviours and social support among health care workers during the COVID-19 pandemic: A systematic review of quantitative studies. Journal of nursing management. 2021;29(7):1893-905.[DOI: 10.1111/jonm.13336] [PMID] [PMCID]
[22] Rayani S, Rayani M, Najafi-Sharjabad F. Correlation between anxiety and resilience of healthcare workers during COVID-19 pandemic in the southwest of Iran. Environmental Science and Pollution Research. 2022;29(15):21528-36.[DOI: 10.1007/s11356-021-17284-x] [PMID] [PMCID]
[23] Charan J, Biswas T. How to calculate sample size for different study designs in medical research? Indian journal of psychological medicine. 2013;35(2):121-6.[DOI: 10.4103/0253-7176.116232] [PMID][PMCID]
[24] Connor KM, Davidson JR. Development of a new resilience scale: The Connor-Davidson resilience scale (CD-RISC). Depression and anxiety. 2003;18(2):76-82.[DOI: 10.1002/da.10113] [PMID]
[25] Bigdeli I, Najafy M, M R. The Relation of Attachment Styles, Emotion Regulation, and Resilience to Well-being among Students

of Medical Sciences. Iranian Journal of Medical Education. 2013;13(9):721-9. [Link]
[26] Campbell-Sills L, Stein MB. Psychometric analysis and refinement of the connor–davidson resilience scale (CD-RISC): Validation of a 10-item measure of resilience. Journal of Traumatic Stress: Official Publication of The International Society for Traumatic Stress Studies. 2007;20(6):1019-28.[DOI: 10.1002/jts.20271] [PMID]
[27] Dargahi H, Musavi M, Shaham G, MolaiZadeh A. Organizational Climate of Hospitals at Tehran University of Medical Sciences. Journal of Health Administration. 2013;15(50):31-40. [Link]
[28] Abdolrazaghnejad A, Ziaei M, HashemiShahri S, Sarani N. Investigating the Readiness of Emergency Department of Khatam Al-Anbia Hospital in Zahedan, Iran, for Facing COVID-19 in 2020: a Descriptive-Analytical Study. Iranian Journal of Emergency medicine,. 2021;8(1).[DOI:10.22037/ijem.v8i1.33923]
[29] Huang L, Wang Y, Liu J, Ye P, Cheng B, Xu H, et al. Factors associated with resilience among medical staff in radiology departments during the outbreak of 2019 novel coronavirus disease (COVID-19): A cross-sectional study. Medical science monitor: international medical journal of experimental and clinical research. 2020;26:e925669-1.[DOI: 10.12659/MSM.925669] [PMID] [PMCID]
[30] Ou X, Chen Y, Liang Z, Wen S, Li S, Chen Y. Resilience of nurses in isolation wards during the COVID‐19 pandemic: a cross-sectional study. Psychology, health & medicine. 2021;26(1):98-106.[DOI: 10.1080/13548506.2020.1861312] [PMID]
[31] Kuntz JR, Malinen S, Näswall K. Employee resilience: Directions for resilience development. Consulting Psychology Journal: Practice and Research. 2017;69(3):223.[DOI:10.1037/cpb0000097]
[32] Gholamzad S, Heydari Yazdi AS, Salimi Z, Saeidi N, Khaniki SH, Noori R, et al. Resilience and coronavirus anxiety in Iran: Online survey among healthcare workers and non-healthcare workers. Journal of Fundamentals of Mental Health. 2023;25(5). [DOI:10.22038/jfmh.2023.23250]
[33] Adnans AA, Hadiyani S, Zahreni S, Fahmi F. Organizational Citizenship Behavior on Nurses: The Role of Organizational Climate and Commitment. Jurnal Organisasi dan Manajemen. 2021;17(1):32-41.[DOI: 10.33830/jom.v17i1.1121.2021]
[34] Abun D, Menor RI, Catabagan NC, Magallanes T, Ranay FB. Organizational climate and work engagement of employees of divine word colleges in Ilocos Region, Philippines. International Journal of Research in Business and Social Science. 2021;10(1):107-21.[DOI:10.20525/ijrbs.v10i1.1017]
[35] Sanjar Mussavi N, Gomnami N, Karazhian E, Farajpour A. Investigating the Relationship between Professional Commitment and Resilience of Healthcare Personnel during the COVID-19 Epidemic Crisis in Healthcare Centers in Mashhad. Journal of Health. 2024;14(4):421-8.[DOI:10.61186/j.health.14.4.421]
[36] Mehtari Arani M, Hoseynizadeh SS, Naghipoor iyoki S, Abdollahi M. The relationship between the organizational climate and the turnover intentions of medical center employees during the Corona crisis. Journal of Social Development and Welfare Planning. 2024;14(56):237-76.[DOI: 10.22054/qjsd.2022.57793.2101]
[37] Marpaung AJ. Work Motivation as a Mediating Variable between Human Resources Competence and Organizational Climate against Job Satisfaction at the Yapen Islands Resort Police. Britain International of Humanities and Social Sciences (BIoHS) Journal. 2021;3(1):188-202. [DOI:10.33258/biohs.v3i1.392]
[38] Caniëls MC, Baaten SM. How a learning-oriented organizational climate is linked to different proactive behaviors: The role of employee resilience. Social Indicators Research. 2019;143(2):561-77.[DOI: 10.1007/s11205-018-1996-y]
[39] Qadeer F, Jaffery H. Mediation of psychological capital between organizational climate and organizational citizenship behavior. Pakistan Journal of Commerce and Social Sciences. 2014;8(2):453-70. [Link]