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Investigating the relationship between anxiety caused by COVID-19 disease and academic burnout in Shiraz Nursing and Midwifery students

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Abstract

The emergence of COVID19 disease in 2019 in a short period of time caused many psychological consequences, including anxiety. Anxiety caused by this disease can endanger the mental health of people in a society, including students, and cause academic burnout by disrupting the process of education and learning. The present study aimed to investigate the relationship between anxiety caused by COVID-19 disease and academic burnout in Shiraz School of Nursing students. This descriptive cross-sectional study was conducted on 343 students. Data were collected using a demographic information form, Berso et al. academic burnout questionnaire and Corona disease anxiety scale questionnaire by census method and analyzed using SPSS statistical software (V22). Descriptive statistics, independent two-sample t-test, one-way analysis of variance and Pearson correlation were used to analyze the data. The general results of this study indicate a positive correlation between the total score of COVID-19 anxiety and academic burnout. The mean total score of anxiety in students was 12.24±10.19, and the mean score of academic burnout was in the range of 40.54±10.9. Based on the results, there is a statistically significant difference between the level of anxiety caused by this disease, the age of students and marital status ($p<0.001$). There was also no statistically significant difference between academic burnout and demographic characteristics. In general, the results of this study show that increasing the level of anxiety caused by COVID-19 causes an increase in students' academic burnout. Therefore, it is recommended that educational planners be considered to increase academic motivation and improve students' mental health.

Keywords: anxiety, burnout, COVID-19, mental health, education

1. Introduction

With the emergence of the COVID-19 epidemic in China in 2019 and the increase in the number of patients with this disease, people worldwide suffered adverse psychological consequences (1, 2). The uncertain nature of the disease and insufficient knowledge and implementation of quarantine measures affected many aspects of life and consequently caused physical problems and mental disorders such as anxiety and depression (3). With the prevalence of coronavirus, people's daily activities and social interactions with others were disrupted due to fears of being infected with the disease, resulting in increased health anxiety (4). When a disease occurs, anxiety as a common psychological response reduces the power of adaptation that can affect a person's mental health and cause irreversible complications in all aspects of health (5, 6). The results of studies conducted during previous epidemics indicate the extensive psychological effects at the individual, social and international levels (7).

Anxiety caused by COVID-19 is caused by being infected with a virus resulting from a lack of knowledge and the uncertain nature of the disease. Anxiety about disease and fear of death due to COVID-19 disease can cause fatigue, hopelessness, burnout, as well as mental health imbalances in a person's job and education (8). Based on Dick (1992), when a person is exposed to a stressful environmental situation with constant stress for a long time and cannot adapt to it, they will suffer burnout (9). Burnout manifests itself as a disorder that causes many problems, such as insomnia, depression, anxiety, and memory loss (10). Students with specific ages and social status typically experience a lot of stress that can cause physical and mental problems (11).

Psychological disorders such as stress, anxiety and depression during their studies disrupt their education, learning and academic performance (12). The main consequence of anxiety is academic burnout, which is caused by a decrease in adaptation to stressful conditions during the study period and causes feelings of inefficiency, mental fatigue and apathy in

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the individual (13). Academic burnout can lead to the wastage of the workforce and costs in addition to harming the process of education, learning, academic performance and motivation of students and their mental health (14, 15). Also, it causes turnover intention by reducing the person's mastery (16). In recent decades, one of the main challenges and issues in the educational system is academic burnout, which has had a significant impact on the academic performance and achievement of students (15, 17). The emergence of the COVID-19 pandemic caused dramatic changes in academic relations (18).

Since mental health includes all mental and physical dimensions, and anxiety is considered one of the most important determinants of mental health, the need to investigate the relationship between anxiety caused by COVID-19 disease and burnout seems essential. The results of this study can be used in the development of education and mental health of students as well as relevant officials to make changes in the educational and research environment and subsequently improve the quality of care services in the medical system.

2. Materials and Methods

This cross-sectional descriptive-analytical study was conducted on 343 students in Shiraz's Faculty of Nursing and Midwifery of Hazrat-e Fatemeh (PBUH). Sampling was done by census method. With the cooperation of the educational officials of the faculty, a list of names of third and above semester students along with their contact numbers in the fields of nursing, surgical technology, anesthesiology, midwifery and medical emergencies in bachelor, master and doctorate levels was first received. The reason for not selecting the first and second-semester students was due to their lack of exposure to COVID-19 disease and not being in the condition.

Questionnaires were provided to students online and through social networks, and informed consent was obtained from them in the form of one of the first questions of the questionnaire. Finally, 343 students participated in the project. This study was approved by the ethics committee of Shiraz University of Medical Sciences with the code of IR.SUMS.NUMIMG.REC.1400.057. Inclusion criteria included no underlying physical disease, no mental disease, studying at Hazrat-e Fatemeh School of Nursing and Midwifery in Shiraz and willingness to participate in the study. Failure to complete at least one of the two questionnaires and high missing data were considered exclusion criteria.

Data collection instruments were provided to students online, including a demographic information form, Corona Disease Anxiety Scale and Berso et al. (19) burnout questionnaire. Demographic information form includes information about age, gender, field of study, semester and level of education. Corona Disease Anxiety Scale was developed and validated by Alipour et al. in Iran to measure anxiety caused by the spread of coronavirus. The final version of this tool has 18 items and two components (agents). Items 1 to 9 measure psychological, while items 10 to 18 measure physical symptoms. The instrument is scored on a 4-point Likert scale (never=0, sometimes=1, most of the time=2 and always=3). High scores in this questionnaire indicate a higher level of anxiety in the subjects. The reliability of this tool was obtained at α=0.879 for the first agent and at α=0.861 for the second agent, and at α=0.919 for the whole questionnaire using Cronbach's alpha method. To check the confirmatory construct validity and to determine the fit of the data with the 2-agent model of this instrument, the confirmatory factor analysis method and LISREL-8.8 software were used (20).

The Burnout Questionnaire, developed by Berso et al. (2007), measures three areas of burnout: academic fatigue, apathy, and inefficiency. The questionnaire has 15 items scored by the subjects on a 5-point Likert scale ranging from strongly disagree to strongly agree. Academic fatigue has five items, academic apathy has four items, and academic inefficiency has six items, scored on a 5-point Likert scale from strongly disagree (1) to strongly agree (5). Questions about the academic inefficiency subscale are considered positive items, so they are scored reversely. Naami examined the psychometric properties of this questionnaire in Persian and calculated the reliability of this questionnaire as 0.79 for academic fatigue, 0.82 for academic apathy and 0.75 for academic inefficiency. He obtained the validity coefficients of this questionnaire by correlating it with the student stress questionnaire. It was calculated at 0.38, 0.42, and 0.45, respectively, which is significant at the level of p<001 (21).

To summarize qualitative and quantitative data, descriptive statistics indices of frequency (percent) and mean (standard deviation) were used, respectively. Independent t-test, one-way analysis of variance (ANOVA) and Pearson correlation were used to investigate the relationship between demographic variables and the main indicators of the study (COVID-19 anxiety and burnout). Also, the Pearson correlation coefficient test was used to investigate the relationship between these variables. The significance level for the tests used was considered at 0.05.

3. Results

Three hundred forty-three students participated in this study, including 231 (67.3%) females and 112 (32.7%) males. The female s group was twice as large as the male group (67.3%). Also, 287 participants (83.7%) were single and (16.3%) were married. Most participants were bachelor students (87.8%), doctoral students (9%) and master students. The highest frequency of students was related to surgical technology (31.5%) and the lowest frequency (7.3%) belonged to emergency medicine. Approximately 20% of the subjects were studying in the third, fourth and fifth semesters, and the eighth semester had the lowest frequency (3.8%) compared to other semesters among the samples (Table 1).

Table 1. Sociodemographic data of the examined samples

Variable	Categories	F	F(n)
Sex	Female	231	67.3%
	Male	112	32.7%
Marital Status	Single	287	83.7%
	Married	56	16.3%
Level of education	Continuous bachelor's degree	301	87.8%
	Non-continuous bachelor's degree	25	7.3%
	Masters	14	4.1%
	PhD	3	0.9%
Field of Study	Surgical Technology	108	31.5%
	Nursing	90	26.2%
	Anesthesia	65	19%
	Midwifery	55	16%
	Emergency Medicine	25	7.3%
Semester	3	92	26.8%
	4	69	20.1%
	5	81	23.6%
	6	37	10.8%
	7	51	14.9%
	8	13	3.8%

A comparison of the mean and standard deviation of academic burnout score and its sub-dimensions, including academic fatigue, academic apathy and academic inefficiency, showed that academic fatigue had the highest mean and effect on academic burnout (Table 2).

The mean and standard deviation of anxiety score along with its sub-dimensions, including psychological and physical anxiety, showed that the psychological dimension had the highest mean and effect on anxiety (Table 3).

According to the results and information of the correlation test, there is a significant and direct relationship between age and corona disease anxiety ($p<0.0001$, $r = 0.2$). In other words, anxiety increases with ageing. The mean anxiety of corona disease is not significantly associated with the variables of gender, level of education, field of study and semester. In other words, the mean of anxiety is the same between the levels of variables. Also, marital status is significantly associated with academic anxiety. Based on the results, married students had higher mean anxiety (Table 4). According to the results, the mean of burnout has no significant relationship with any of the variables of age, gender, marital status, level of education, field of study and semester. In other words, the mean of burnout is the same between the variables (Table 5).

The results and correlation test data indicate a significant and positive relationship between anxiety scores and academic burnout scores ($r=0.288$, $P<0.0001$). In other words, with increasing anxiety, academic burnout increases (Table 6).

Table 2. Description of the burnout and its sub-dimensions

Variable	Number of questions	Min	Max	Mean	SD	Mean based on the Likert scale
Academic fatigue	5	5	25	14.4956	4.40884	2.8991
Academic apathy	4	4	20	11.5277	3.99689	2.8819
Academic inefficiency	6	6	26	14.5190	3.99689	2.4198
Total burnout score	15	15	71	40.5423	10.90860	2.7028

Table 3. Description of quantitative anxiety and its dimensions

Variable	Number of questions	Min	Max	Mean	SD	Mean based on the Likert scale
Physiological	9	0	27	9.21	6.06	1.03
Physical	9	0	27	3.03	4.96	0.34
Total anxiety	18	0	54	12.24	10.19	0.68

Table 4. Relationship between demographic characteristics and corona disease anxiety

Variable	Ranking	n	Mean	SD	Statistical test
					p-value
Age	Total sample	343	23.76	4.91	§r=0.2, p<0.00001
Gender	Male	112	11.39	11.30	†t=-1.078, 0.282
	Female	231	12.66	6.61	
Marital status	Single	287	11.91	9.13	†t= -3.473, 0.001
	Married	56	17.64	13.3	
Level of education	Continuous bachelor	301	11.83	9.65	‡F=2.275, 0.32
	Non-continuous bachelor	25	17.92	17.75	
	Master	14	10.5	10.50	
	PhD	3	14.33	4.51	
Field of Study	Nursing	90	11.11	8.80	‡F=0.932, 0.473
	Midwifery	55	12.69	8.99	
	Surgical Technology	108	13.61	11.91	
	Anesthesia	65	11.60	9.33	
	Emergency Medicine	25	11.12	11.40	
Semester	3	92	11.40	10.26	‡F=1.72, 0.129
	4	69	13.88	12.86	
	5	81	13.75	9.99	
	6	37	8.86	6.71	
	7	51	11.94	8.59	
	8	13	10.92	6.64	

§Correlation Test

†Independent Sample T Test

‡One Way Analysis of Variance

Table 5. Relationship between demographic characteristics and academic burnout

Variable	Ranking	n	Mean	SD	Statistical test
					p-value
Age	Total sample	343	23.76	4.91	§r=-0.05, 0.359
Gender	Male	112	40.92	10.00	†t=0.446, 0.656
	Female	231	40.36	11.33	
Marital status	Single	287	40.76	10.71	†t=0.848, 0.397
	Married	56	39.4	11.92	
Level of education	Continuous bachelor	301	40.88	10.79	‡F=1.322, 0.267
	Non-continuous bachelor	25	39.92	11.98	
	Master	14	35.50	11.19	
	PhD	3	35.67	10.21	
Field of Study	Nursing	90	40.28	10.94	‡F=0503, 03.734
	Midwifery	55	40.71	11.16	
	Surgical Technology	108	41.07	11.54	
	Anesthesia	65	39.18	9.45	
	Emergency Medicine	25	42.36	11.36	
Semester	3	92	39.40	11.68	‡F=1.294, 0.266
	4	69	40.35	11.03	
	5	81	41.55	10.03	
	6	37	39.29	11.29	
	7	51	40.57	10.15	
	8	13	46.76	10.92	

§Correlation Test
†Independent Sample T Test
‡One Way Analysis of Variance

Table 6. Correlation matrix between anxiety score and academic burnout

	Anxiety	Academic Burnout
Anxiety	1	-
Academic Burnout	‡r=0.288, p<0.0001	1

‡Significant at the 0.01 level

4. Discussion

The present study aimed to investigate the relationship between COVID-19 anxiety and academic burnout in Hazrat-e Fatemeh School of Nursing and Midwifery students in Shiraz. The results showed that the mean score of students' academic burnout was in the average range (40.54 ± 10.9). These results were consistent with the results of similar studies (15, 22-24). The results of a study conducted by Sadoughi et al. (2019) at Kashan University of Medical Sciences reported low academic burnout (25). Since the instrument used in the mentioned study for measuring academic burnout is similar to the present study, the reasons for the inconsistency of the results might be attributed to differences in the psychological components studied in the study and the absence of Covid 19 disease at this time. Also, the results of a study by Da Silva et al. (2014) in Brazil showed that nursing students had a low burnout score, which was not consistent with the results of the present study (26). This could be due to differences in the instruments used or the relatively better conditions for students in Brazil.

Examination of the mean scores of the sub-dimensions of burnout showed that the highest mean based on the Likert scale was related to academic fatigue, and the lowest was related to academic inefficiency, consistent with similar studies' results (22, 24, 27). The mean total score of anxiety in students was lower than average (12.24±10.19). In the psychological dimension, the mean anxiety was 9.21±6.05; in the physical dimension, the mean anxiety was 3.02±4.96), which indicates a higher score of COVID-19 induced physiological anxiety than physical anxiety. Anxiety will negatively affect the mental health of people in the community. COVID-19 disease can also be considered a factor that leads to stress. In this regard, the results of a study by Alizadeh showed that anxiety negatively correlates with mental health (28). The results of a study conducted by Van et al. also showed that anxiety and mental disorder threaten mental health (29). Results of a similar study in Lebanon in 2020 indicated that students' mean anxiety score was below average (30). The results of a similar study by Rahmati et al. (2020) conducted by submitting online questionnaires showed that the level of anxiety in the study population was not high and was more favourable in students than in staff (31).

It might be since staff are in a different environment than students. In another similar study conducted in 2020 on 520 Lebanese students, the mean score of anxiety in students was reported at 24.74±7.4, which was associated with a sudden change in teaching methods to exclusive e-learning methods (30). According to the researcher, the low score of students' anxiety can be related to the use of e-learning methods and their reduced worries about getting coronavirus due to a lack of close and face-to-face communication with other friends and classmates. The results of a study conducted by Fitzgerald et al. (2020) revealed that students experienced high anxiety levels due to fear of corona disease (32). The results of the mentioned study are inconsistent with the results of the present study. Differences in the results of the present study with this study can be related to the research environment, the instrument used, and the studied universities.

The present study revealed that the level of anxiety experienced due to COVID-19 disease is directly associated

with the age of students ($p<0.0001$). It means that with ageing, the level of anxiety also increases. The results of a study conducted by Nasirzadeh et al. in 2020 indicated that there is a significant relationship between anxiety score and age. This study's results also showed a significant relationship between anxiety score and education level, which is inconsistent with the present results (16). Based on the results of the present study, marital status also affected anxiety ($p<0.001$), so married people experienced more anxiety. It might be because married people are in the process of living, and this factor has made them more worried about being infected with the coronavirus by other family members. Also, other demographic variables such as gender, level of study, field of study and semester did not affect the level of anxiety caused by COVID-19 disease in students.

The data of a similar study conducted on medical students of Hamadan University of Medical Sciences in 2020 by census method revealed no significant relationship between anxiety and level of education (32). A study conducted on 204 medical personnel working in hospitals and health centres of Jahrom city in 2020 showed that the mean score of psychological anxiety symptoms is higher than that of physical symptoms, similar to the present study. Also, the results of this study showed that the scores of anxiety, psychological symptoms and physical symptoms in women are significantly higher than in men ($P <0.05$), which is contrary to the present study (33). Since the present study was conducted in an academic setting, it seems that this discrepancy could be due to the greater vulnerability of women in coping with unfavourable working conditions.

Demographic characteristics of age, gender, marital status, level of education, field of study and semester had no effect on burnout. The results of similar studies showed that there is no significant relationship between age and academic burnout (34, 35). As mentioned, the present study showed that gender is not significantly different from any of the dimensions of burnout. These results are in line with the results of studies conducted by Sharifi Fard et al. in 2014 (34) and Sharif Shad et al. in 2017 (36). The reason for this discrepancy can be explained by the fact that gender differences are nowadays less effective in job and educational performance, and the ability of girls and boys in different fields has caused them to have almost the same functions. In studies inconsistent with the present study, a significant relationship was found between marital status, field of study, and semester and academic burnout (21, 34, 37-39). This discrepancy can be attributed to the use of different instruments and environmental conditions.

In this study, a positive association was reported between the total score of anxiety and academic burnout. It means that students with higher anxiety levels will experience more academic burnout. A study by Fitzgerald et al. (2020) showed that anxiety can divert students from their academic education. The strong association between anxiety symptoms and worry about academic issues showed that they are extremely anxious about academic issues (31). Based on the results of this study on the relationship between anxiety caused by Covid-19 and academic burnout, a positive step can be taken to improve student's mental health and increase their academic performance by designing educational programs in different academic courses, identifying the challenges of the diseases, and identifying the factors affecting academic burnout. Also, providing appropriate training to students to gain the necessary knowledge and skills when challenges arise will provide better clinical care for patients, followed by high-quality health services.

Ethical Statement

This study was conducted by Helsinki Principles, and ethical approval was taken from the local ethics committee (Decision Number: 2020/328, 27.08.2020).

Conflict of interest

None to declare.

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Authors' contributions

Concept: S.G., A.Y., Design: S.G., A.Y., Data Collection or Processing: J.E., K.R., Analysis or Interpretation: M.H., Literature Search: S.G., A.Y., Writing: S.G., A.Y.

References

1. Karimi L, Khalili R, Sirati Nir M. Investigating the prevalence of different types of psychological disorders in the exposure to coronavirus COVID-19 epidemic: A systematic review. J Mil Med. 2020;22(6):648-62.
2. Sohrabi C, Alsafi Z, O'neill N, Khan M, Kerwan A, Al-Jabir A, et al. World Health Organization declares global emergency: A review of the 2019 novel coronavirus (COVID-19). Int J Surg. 2020;76(April):71-6.
3. Effati-Daryani F, Zarei S, Mohammadi A, Hemmati E, Ghasemi Yngyknd S, Mirghafourvand M. Depression, stress, anxiety and their predictors in Iranian pregnant women during the outbreak of COVID-19. BMC Psychol. 2020;8(Sep):1-10.
4. Jungmann SM, Witthöft M. Health anxiety, cyberchondria, and coping in the current COVID-19 pandemic: Which factors are related to coronavirus anxiety? J Anxiety Dis. 2020;73(June):102239.
5. Daryani MA, Marashi MK. Feeling Guilty and Anxiety in the Elderly: The Role of Existential Concerns. Aging Psychol. 2021;7(1):29-41.
6. Dong L, Bouey J. Public mental health crisis during COVID-19 pandemic, China. Emerg Infect Dis. 2020;26(7):1616.
7. Nir MS, Karimi L, Khalili R. Research paper the perceived stress level of health care and non-health care in exposed to co-vid-19 pandemic. Iran J Psych Clin Psychol. 2020;26(3):294-305.
8. Mohammadipour M, Afzood A, Zolfaghari S. The role of spiritual intelligence and distress tolerance on coronavirus anxiety in students. Health Spiritual Med Ethic. 2021;8(2):95-102.

9. Karimi Y, Bashirpur M, Khabbaz M, Hedayati AA. Comparison between perfectionism and social support dimensions and academic burnout in students. Proced Soc Behav Sci. 2014;159(Dec):57-63.

10. Yazdani G, Salarifar MH, Khorshidzadah M. The Effect of Metacognitive Beliefs and State's Training on Students' Academic burnout in University of Birjand. Counsel Culture Psycother. 2021;12(48):101-22.

11. Shareinia H, Ghavidel A, Pasandi S, Farzam N, Ramezani M, Erfanpoor S, et al. The Relationship Between Circadian Rhythm with Academic Performance, Stress, Anxiety and Depression Among Students of Gonabad University of Medical Sciences. Educ Strategi Med Sci. 2021;14(5):268-75.

12. Izadikhah A, Ansari SM, Rezayi JH, Haghayegh SA. Effectiveness of Mindful Therapy on Mental Vitality and Emotion Cognitive Regulation in the Patients with Migraine Headache. Iran Engineer Educ Quart. 2018;21(84):31-51.

13. Cao W, Fang Z, Hou G, Han M, Xu X, Dong J, et al. The psychological impact of the COVID-19 epidemic on college students in China. Psychia Res. 2020;287(May):112934.

14. Hosseyni M. Investigating the Factors Affecting Academic Burnout from the Viewpoints of Students and Faculty Members. J Res Educ Sci. 2019;13(44):141-54.

15. Hemmati R, Sadeghi A. Analysis of academic burnout among university students. J Soc Problem Iran. 2019;9(2):233-57.

16. Nasirzadeh M, Akhondi M, Khorramnia S. A survey on stress, anxiety, depression and resilience due to the prevalence of COVID-19 among Anar City Households in 2020: A short report. Journal of Rafsanjan University of Medical Sciences. 2020;19(8):889-98.

17. Gómez H, Pérez V, Parra P, Ortiz M, Matus B, McColl C, et al. Academic achievement, engagement and burnout among first year medical students. Revist Medic Chile. 2015;143(7):930-7.

18. Alawamleh M, Al-Twait LM, Al-Saht GR. The effect of online learning on communication between instructors and students during Covid-19 pandemic. Asian Educ Develop Studi. 2020;11(2):380-400.

19. Alipour A, Ghadami A, Alipour Z, Abdollahzadeh H. Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample. Quart J Health Psychol. 2020;8(32):163-75.

20. Naami A. The relationship between the quality of learning experiences and academic burnout of master's students of Shahid Chamran University of Ahvaz. Psychologic Studi- Quart. 2009;5(3):117-34.

21. Aghagari Z, Ahmad M, Borhani F. Prevalence of Academic Burnout and Its Related Factors among Nursing Student in Tehran Shahid Beheshti University of Medical Sciences, 2015,(Iran). Qom Univ Med Sci J. 2019;13(8):50-61.

22. Kamalpour S, Azizzadeh-Forouzi M, Tirgary B. A study of the relationship between resilience and academic burnout in nursing students. Stride Develop Med Educ. 2017;13(5):476-87.

23. Tahmasebzadeh D, Sheikhi M, Azimpoor E. The Role of social well-being and academic burnout in predicting students' academic eagerness. Educ Strategi Med Sci. 2018;11(2):83-90.

24. Sadoughi M. The relationship between psychological capital and academic burnout among medical students: The mediating roles of academic engagement. Razi J Med Sci. 2019;26(1):10-22.

25. Da Silva RM, Goulart CT, Lopes LFD, Serrano PM, Costa ALS, De Azevedo Guido L. Hardy personality and burnout syndrome among nursing students in three Brazilian universities—an analytic study. BMC Nurs. 2014;13(1):1-6.

26. Falahchai M, Taheri M, Neshandar Asli H, Babaee Hemmati Y, Pourseyedian S. A survey of the relationship between academic burnout and academic achievement of dental students of Guilan University of medical sciences. Res Med Educ. 2020;12(4):70-9.

27. Mirkamali S-M, Khabare K, Mazari E, Farhadi Amjad F. The role of mental health on academic performance of university students with the meditation of academic achievement motivation. Knowledge Res Applied Psychol. 2017;16(2):101-9.

28. Farnoosh G, Alishiri G, Zijoud S, Dorostkar R, Farahani AJ. Understanding the 2019-novel coronavirus (2019-nCoV) and coronavirus disease (COVID-19) based on available evidence-a narrative review. J Mil Med. 2020;22(1):1-11.

29. Fawaz M, Samaha A, editors. E-learning: Depression, anxiety, and stress symptomatology among Lebanese university students during COVID-19 quarantine. Nursing forum; 2021: Wiley Online Library.

30. Rahmati A, Mirzadeh AK. The prevalence of coronavirus anxiety: Risk factors and Protectors in students and staff of Shahid Bahonar University of Kerman. Quarter J Health Psychol. 2021;10(39):85-104.

31. Fitzgerald A, Konrad S, editors. Transition in learning during COVID-19: Student nurse anxiety, stress, and resource support. Nursing Forum; 2021: Wiley Online Library.

32. Miri Z, Razavi Z, Mohammadi S. Evaluation of stress, anxiety, depression, and sleep disorders in medical students of Hamadan university of medical sciences, Iran, during the COVID-19 pandemic. Avicenna J Clin Med. 2021;27(4):232-8.

33. Rahmanian M, Mosalanezhad H, Rahmanian E, Kalani N, Hatami N, Rayat Dost E, et al. Anxiety and stress of new coronavirus (COVID-19) in medical personnel. Horizon Med Educ Development. 2021;12(2):80-70.

34. Sharififard F, Nourozi K, Hosseini M, Asayesh H, Nourozi M. Related factors with academic burnout in nursing and paramedics students of Qom University of Medical Sciences in 2014. J Nurs Educ. 2014;3(3):59-68.

35. Kamalpour S, Azizzadeh-Forouzi M, Tirgary B. The relationship between academic burnout and academic progress in nursing students. Prevent Med. 2018;6(2):67-74.

36. Sharif Shad F, Arsang-Jang S, Kheyrollahi F. Prevalence of academic burnout and its related factors among medical student in Qom, Iran. Qom Univ Med Sci J. 2017;11(2):77-86.

37. El-Masry R, Ghreiz S, Helal R, Audeh A, Shams T. Perceived stress and burnout among medical students during the clinical period of their education. Ibnosina J Med Biomed Sci. 2013;5(4):179-88.

38. Hosseini Largani SM. Academic factors affecting students burnout: A comparative study of engineering students and other students of Iran's higher education system. Iran J Engineer Educ. 2020;21(84):31-51.

39. Ahookhosh P, Alibeigi A. Factors Affecting Academic Burnout of Agricultural Students and Natural Resources of Razi University. Quarter J Agricultur Educ Manage Res. 2017;9(40):44-55.