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Evaluating the effect of planned online video visits on COVID-19 patients' anxiety and stress levels: A randomized clinical trial

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Abstract:

BACKGROUND: One of the patients' support needs during hospitalization is visits, which are usually associated with many restrictions for patients with coronavirus disease 2019 (COVID-19). Implementing as planned online video visits to communicate with the patients and their family may help reduce psychological complications.

MATERIALS AND METHOD: This study was a randomized clinical trial with two groups from April 2022 to August 2022. Sixty patients were randomly divided into intervention and control groups, each with 30 individuals, based on a sequence from SPSS and using sealed envelopes for assignment. Then, in the intervention group, a video call was made in the morning, evening, and night shifts and once in each shift for 10–15 minutes between the patient and the family by the researcher's tablet in the ward and the patient's family's smartphone at home. The demographic information questionnaire and Depression Anxiety Stress Scale (DASS-21) were completed before and 48 hours after the patient's hospitalization. Statistical analysis was conducted with SPSS version 20 utilizing both descriptive and inferential techniques alongside the paired *t*-test for within-group comparisons and the Kolmogorov–Smirnov test for normality assessment. All tests were evaluated with a 95% confidence interval and a significance level set at 0.05.

RESULTS: Initially, no significant differences were noted in anxiety and stress scores between the intervention and control groups. Later, post-test results showed significantly lower mean anxiety scores in the intervention group compared to the control both for anxiety and stress.

CONCLUSION: The researchers advocate for the adoption of virtual visitation as an effective measure to facilitate visual communication between patients and their family members, aiming to enhance patient well-being by alleviating anxiety and stress.

Keywords:

COVID-19, online video visits, patient anxiety, randomized clinical trial, stress levels

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Introduction

The coronavirus disease 2019 (COVID-19) pandemic first broke out in Wuhan, China, on December 31, 2019.[1] On January 20, 2020, the World Health Organization (WHO)[2] introduced the COVID-19 pandemic as a public health emergency of international concern.[2,3] Around 698,944,092 confirmed cases and 6,948,090 deaths were reported in more than 215 countries in the world by the WHO during the period of December 2019 to December 2023. The mentioned rates were respectively reported at 7,624,407 and 146,705 people in Iran.[4]

A lack of a definitive cure or a way of preventing the disease has significantly

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impacted people's mental health.[5] This has caused psychological abnormalities, including stress, anxiety, and depression, in society.[5,6] Moreover, limited knowledge and the death of others increased fear and anxiety in both patients and their family members.[7] In Iran, studies have shown a relationship between negative emotions (e.g., fear, depression, and stigma) and severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) infection, which can result in moderate-extreme anxiety levels.[6,8-10] Therefore, it seems that the continuation of the current situation may cause a higher level of anxiety and fear in the community.[11,12] In fact, fear of disease has destructive effects on mental health and can cause emotional and psychological abnormalities in addition to a weakened immune system and decreased ability of the body to fight disease.[13,14] Meanwhile, COVID-19 patients have a low psychological tolerance capacity, and due to the current status of the disease in the world, these people are highly exposed to psychological disorders, such as anxiety, fear, depression, and negative thoughts.[15] Furthermore, several studies show that COVID-19 patients deal with high levels of stress, anxiety, and depression.[16,17] Therefore, it is recommended that psychological interventions be used to reduce anxiety and depression in COVID-19 patients.[17,18]

Some of these techniques are based on communication with others,[19,20] which can also affect the treatment process of patients. Meanwhile, the family plays a key role in the emotional and mental support of patients. In other words, a family is a complete and coherent system, whose members are close to each other, and their presence improves self-care and how to tackle problems caused by the disease.[12,21-23]

One of the most important types of support from family members is their presence at the bedside, which often raises multiple care challenges and is associated with restrictions.[24,25] Today, these restrictions are more intense due to the increased risk of infection. In a study, Rafiei showed an improvement in patients' depression and stress levels following visits by family members.[24] According to Kandori *et al*.[26] (2020), visitation restriction was associated with an increased level of anxiety in COVID-19 patients hospitalized in the emergency department. Therefore, providing conditions for virtual visitation of patients with their family members may contribute to their improved mental state while avoiding the risk of infection transmission. Notably, a comprehensive literature search revealed a lack of studies that evaluated planned virtual visitation and their impact on COVID-19 patients' stress and anxiety levels. This pioneering study examines the transformative potential of technology-mediated family interactions on the emotional well-being of patients. With this background in mind, the present study aimed to evaluate the effect of planned online video visits on the mental status of COVID-19 patients.

Materials and Methods

Study design and setting

This was a two-group randomized clinical trial with a pre-test–post-test design. The research involved 60 COVID-19 patients who were hospitalized in the COVID-19 designated department of 9th Day Hospital in Torbet-e Heydarieh, a city in the east of Iran, during the period of April 2022 to August 2022.

Study participants and sampling

In terms of the inclusion criteria, the subjects were selected from those with COVID-19 whose disease was diagnosed through lung computed tomography (CT) scan and positive polymerase chain reaction (PCR) and were receiving standard treatments. Other criteria were access to communication devices with the ability to install social networks (IMO) and no history of anxiety and depression problems. On the other hand, the exclusion criteria were lack of possibility to make video communication in more than two shifts in the intervention group, lack of willingness to cooperate with the researcher, and falling ill.

The sample size was estimated at 28 based on an effect with power = 0.8 and by using a sample size formula to compare the mean of the two groups in a two-sample *t*-test in Gpower Software. Considering a 15% attrition rate, 33 subjects were enrolled in each group.

Throughout the research, three subjects were eliminated from the intervention group due to unwillingness to continue cooperation with the research (n = 2) and falling ill (n = 1). The same amount of people was also removed from the control group due to a lack of willingness to participate in the research (n = 3). Ultimately, the research was conducted on 30 participants in each group [Figure 1].

Data collection tool and technique

The subjects were selected by convenience sampling and based on the inclusion and exclusion criteria. It is worth mentioning that patients were allocated to the intervention and control groups randomly; in this regard, eligible individuals were assigned to the groups based on a random sequence generated by SPSS, which were kept in sealed envelopes.

Data were collected using two instruments, namely, a five-item demographic characteristics questionnaire (age, gender, marital status, place of residence, and level of education), DASS-21 (the Depression, Anxiety and Stress

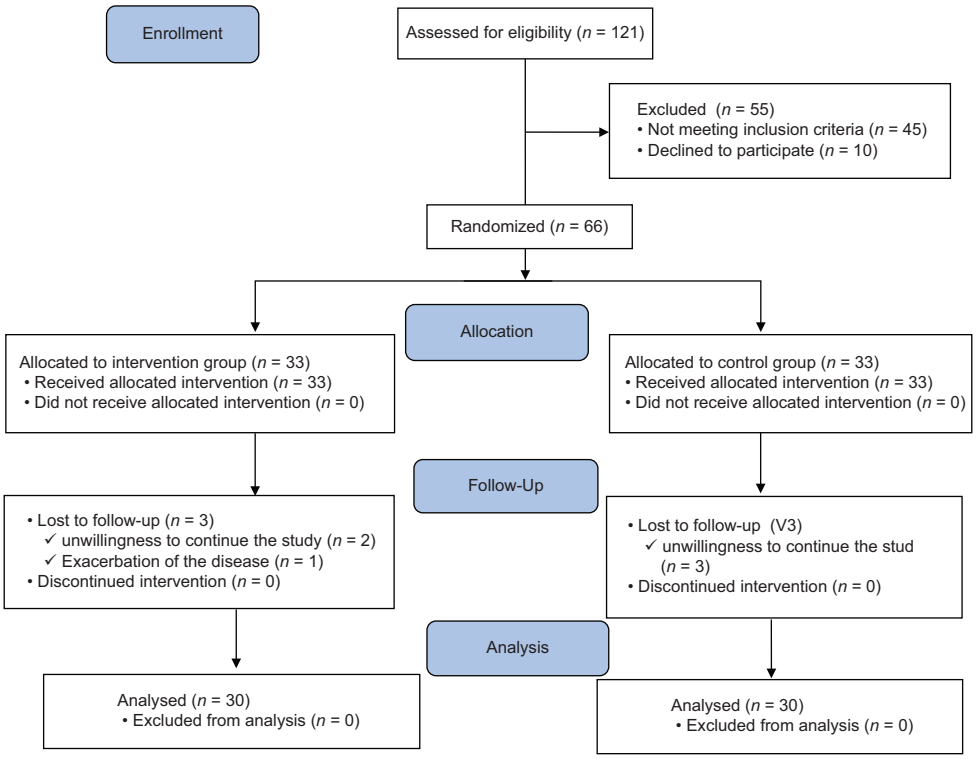

Figure 1: The CONSORT flowchart of study

Scale - 21 Items), which evaluated COVID-19 patients' stress and anxiety, first introduced by Lovibond and Lovibond (1995), and the second instrument encompassing 21 items scored based on a Likert scale.[27] The reliability of the tool was confirmed by Mahdipour and Najari.[28,29] In addition, the validity of DASS-21 was determined by using the qualitative content validity method. To do so, the tool was provided to 10 faculty members of Torbat-e Heydarieh University of Medical Sciences, and the final instrument was developed following applying their opinions to the scale. The reliability of the tool was confirmed at a Cronbach's alpha of 0.81 using an internal consistency method. The final score of each sub-scale of DASS-21 was obtained based on the scores of the items related to that scale. In this regard, each item was scored 0 (does not apply to me at all) to 3 (completely applies to me). Given that the tool was a short form of the main scale (42 items), the final score of each sub-scale had to be doubled.

In the intervention group, a preliminary face-to-face meeting, with a fixed duration of 10–15 minutes, was convened in a dedicated private space within the hospital's health clinic. This session was timed to coincide with the initial phase of the patients' hospitalization to minimize disruption to their care schedule. The selection of patients and family members for this meeting was grounded in their availability and willingness to participate, ensuring their informed consent was received prior to the study's commencement. During the orientation meeting, a comprehensive overview of the study's objectives and procedures was presented. The researcher explained the potential benefits and any foreseeable risks associated with participation, with the aid of visual aids and simple terminology to accommodate varying levels of medical literacy. The participants were also informed about the confidentiality of their data and their right to withdraw from the study at any point without any repercussions to their medical care.

To facilitate the technological aspect of the intervention, detailed instruction was provided on the operation of IMO software—a platform chosen for its user-friendly interface and reliability. Participants were guided through each step, from account setup to conducting a video call. This included demonstrating how to adjust the settings for optimal audio and video quality, ensuring each participant was comfortable with making and receiving calls independently. A question-and-answer session concluded the meeting to address any immediate concerns or difficulties.

The scheduling of video calls was strategically planned to dovetail with the structured routine of the ward to minimize interference with medical duties or rest periods. A timetable was provided to patients and families, specifying the windows of time during morning, evening, and night shifts when calls could be placed. This schedule was not rigid; adjustments were made according to changes in the patient's condition or treatment activities, in consultation with the attending healthcare staff.

The researcher facilitated the use of a hospital-provided tablet equipped with the IMO software in the ward. This tablet was sanitized before and after use to adhere to infection control protocols. Family members utilized their personal smartphones for the video calls, ensuring a private and familiar device for communication, which may help in enhancing the comfort of the interaction.

A discreet, noise-canceling hands-free set was selected to respect the shared space of the hospital ward and to allow for clear, uninterrupted communication. The use of such equipment ensured compliance with the hospital's noise policies and consideration for the healing environment.

Each video call was designed to mimic the interpersonal dynamics of a face-to-face visit, maintaining eye contact and engaging in conversation that supported emotional well-being. These calls were planned for periods when patients were most likely to be alert and not interacting with hospital staff for treatments or assessments, such as after nursing rounds or physician check-ups.

In the pre-test stage, the DASS-21 was completed by both the intervention and control groups on the day of hospitalization. In the control group, family members were contacted via phone calls when the conditions of both the patients and the ward were suitable. Additionally, visitors were permitted to see their patients in both groups at times authorized by the department, provided that they adhered to the principles of personal protection. In the post-test stage, the DASS-21 was administered 48 hours after patients were hospitalized in the COVID-19 designated department.

The subjects were entered into the study following a face-to-face oral explanation of the research and receiving informed consent from them. It is worth mentioning that the participants were ensured of the confidentiality terms regarding their personal information. In addition, participation in the study was voluntary, meaning that the subjects could withdraw from the research at any time.

Ethical consideration

The research was approved by the Research Ethics Committees of Torbat Heydariyeh University of Medical Sciences (no. IR.THUMS.REC.1400.040) and registered in the Iranian Registry of Clinical Trials with the code IRCT20180429039463N4. The study purpose and importance were explained to participants, who met the inclusion criteria, and they signed the written informed consent form. Patients were informed that they are free to leave the study anytime without any effect on their treatment plan should they wished to do so. All methods were performed in accordance with the relevant guidelines and regulations, which are aligned with the Declaration.

Analysis

Data analysis was performed in SPSS version 20 using descriptive statistics (frequency distribution, mean, and standard deviation) and inferential statistics (Chi-square and Mann–Whitney U). Moreover, paired *t*-test was exploited for intra-group comparison, and the Kolmogorov–Smirnov test was used to assess the normality of quantitative variables. It is also notable that a confidence interval of 95% and a significance level of 0.05 were considered in all tests.

Results

In this study, half of the subjects in each group (n = 15, 50%) were male. In terms of the level of education, most subjects in the intervention (n = 22, 73.3%) and control (n = 17, 56.6%) groups had a high-school diploma. According to the results, the research groups were homogeneous in terms of the variables of age, gender, level of education, marital status, and place of residence ($P > 0.05$) [Table 1].

There was no significant difference between the intervention and control groups regarding patients' mean anxiety score ($P = 0.871$). However, in the post-test stage, the mean anxiety score was significantly lower in the intervention group (8.5 ± 2.2), compared to the control group (11.6 ± 2.6) ($P = 0.016$) [Table 2].

There was no significant difference between the intervention and control groups in terms of the mean stress score of the subjects ($P = 0.829$). Therefore, the two groups were homogeneous in this respect. However, in the post-test stage, the mean anxiety score was significantly lower in the intervention group (10.7 ± 4.2), compared to the control group (14.4 ± 5.1) ($P = 0.032$) [Table 2].

Table 1: Demographic variables of the intervention and control groups

Variable	Group		*P*
	Intervention	Control	
Age (mean±SD)	46.4±9.9	44.6±9.6	****P=0.480
Sex (percent/number)			
Male	15 (50.0)	18 (60)	*P=0.436
Female	15 (50.0)	12 (40)	
Education (percent/number)			
Middle/high school	3 (10.0)	9 (30)	**P=0.122
Diploma	22 (73.3)	17 (56.6)	
Academic	5 (16.6)	4 (13.3)	
Marital Status (percent/number)			
Single	2 (6.6)	7 (23.3)	P=0.073*
Married	28 (93.3)	23 (76.6)	
living place			
City	27 (90.0)	28 (93.3)	***P=1.000
Village	3 (10.0)	2 (6.6)	

*Chi-square **Mann–Whitney ***Fisher **** Independent-*t* test

Table 2: Mean and standard deviation of anxiety and stress scores in two groups of intervention and control

Variable	Group				*P*
	Intervention		Control		
	Mean±SD	No	Mean±SD	No	
Anxiety					
Pretest	11.6±2.6	30	11.4±6.1	30	*P*=0.871*
Posttest	8.5±2.2	30	11.2±5.4	30	**P*=0.016
Stress					
Pretest	14.4±5.1	30	14.1±6.6	30	*P*=0.829*
Posttest	10.7±4.2	30	13.8±6.4	30	*P*=0.032*

*Independent *t*-test

Discussion

The present study aimed to evaluate the effect of planned online video visits on COVID-19 patients' anxiety and stress levels. According to the results, video calls with COVID-19 patients significantly reduced their anxiety and stress scores. Meanwhile, no significant difference was observed in the control group after the intervention. A literature review revealed a lack of similar research that assessed the effect of planned virtual visits on COVID-19 patients' stress and anxiety levels. Therefore, attempts were made to use the results of other studies in this area.

Based on our findings, planned virtual visitation decreased patients' anxiety scores. This could be justified by the fact that the psychological support of the visitors and their empathy will calm patients, reduce their mental tension, and ultimately decrease their anxiety.[30]

In a study by Shahdosti *et al*.[30] (2020), online visits reduced anxiety in patients hospitalized in CCUs. In Iran, holding online web-based meetings between patients, families, and physicians reduced the subjects' anxiety levels during the COVID-19 pandemic, as reported by Zahedifar *et al*. (2021).[31] In addition, Fumagalli *et al*.[32] (2006) revealed that unrestricted visits significantly reduced patients' anxiety. According to Kebapcı *et al*.[33] (2021), structured virtual visitations decreased anxiety in COVID-19 patients. In another study by Yari-Bajelani *et al*.[34] (2019), unrestricted visits significantly reduced patients' anxiety levels. Given that visiting patients is one of the most basic rights of these individuals and their families and is known as an important support system and with regard to the cultural and social characteristics of Iranian society, people use support adaptation mechanisms (family) to reduce anxiety,[35] which confirms the consistency of our findings with the foregoing research.

In the present study, planned virtual visitation reduced patients' stress scores. This could be justified by the fact that visual communication between the patient and their family provides psychological support to the patient and reduces stress according to religious and cultural values in Iran.

In a study by Holmes *et al*.[36] (2020), communication-based digital interventions reduced stress levels in COVID-19 patients. In another research by Ahmadian *et al*.[37] (2013), planned visitation significantly reduced stress in hospitalized patients. According to Ning *et al*. (2020), open visits increased general satisfaction in patients and their families and improved stress levels in patients.[38] Zhou *et al*.[19] (2020) revealed that psychological interventions through cyberspace and phone calls reduced mental pressure on people. In a study by Shatri *et al*.[39] (2021), Internet-based intervention for communication could help improve the stress symptoms of patients with COVID-19. It seems that making a phone call with the patient's family can bring empathy and peace of mind, reduce mental tension, strengthen and increase the knowledge capacity, provide an opportunity to discuss possible issues, and ultimately reduce the stress of the patient and their family.[30] Furthermore, considering the religious and cultural values as well as strong family relationships in Iran, visitation enables people to deal with stressful factors more effectively so that they could bear the psychological, economic, and health care burdens.

Our findings confirmed the relevant results of other studies. In fact, we showed that planned online visitation is as effective as in-person visits. In addition, it reduces patients' anxiety and stress levels. At the same time, there are no restrictions on this type of visitation due to a lack of need for an in-person meeting in the hospital. This has been especially important after the outbreak of the COVID-19 pandemic, which has caused restrictions on hospital visitations in Iran.

Our results echo the findings of Smith *et al*.[40] (2020), who reported that telehealth interventions, particularly video calls, were associated with reduced symptoms of anxiety among isolated patients. Smith's study demonstrated that not only do these interventions reduce anxiety but also they improve patient satisfaction with the overall care received, suggesting an added benefit to patient engagement and experience.

Furthermore, our data align with the conclusions drawn by Shabahang *et al*.[41] (2021), who found that telehealth could effectively deliver cognitive-behavioral therapies to COVID-19 patients, with a noted improvement in their mental health. This reinforces our position on the effectiveness of virtual interventions and additionally opens the avenue for more specialized psychological support through telehealth platforms. In contrast, a study by Lee *et al*.[42] (2022) reported no significant difference

in anxiety and stress levels between their intervention and control groups following telehealth sessions. This discrepancy may be attributed to variations in study design, the frequency of the interventions, or demographic differences, which highlights the necessity for standardized methodologies in future research for more consistent comparisons.

In concluding our discussion, the study investigating online video visits for COVID-19 patients has revealed critical insights despite limitations like questionable generalizability and the reliance on self-reported data, which may be subject to bias. Its strengths lie in the robust randomized trial design and the timely relevance of leveraging technology for mental health care during a crisis, pointing toward the potential scalability of these interventions. A holistic, patient-centric focus and ethical conduct further validate the study's positive implications. Moving forward, it is recommended that future research includes longitudinal studies for assessing long-term effects, replication with diverse populations for broader applicability, and qualitative research for deeper understanding. Comparative analyses of different technological tools and an exploration into the integration of such interventions into healthcare systems are advocated. Additionally, it is crucial to delve into the psychological mechanisms by which these interventions may reduce stress and anxiety and to compare the effects of virtual visits with those of traditional in-person visits to truly ascertain their relative effectiveness.

Conclusion

In light of the implemented restrictions on in-person visitations within Iranian healthcare facilities amid the COVID-19 pandemic, virtual visitation emerges as a viable and beneficial alternative. This approach not only adheres to necessary health measures but also addresses the mental health challenges experienced by isolated patients by facilitating visual contact with loved ones, potentially alleviating anxiety and stress. Economically rational, online visits circumvent the boundaries of physical restrictions and eliminate risks associated with travel and overcrowding in medical settings. By reducing the chance of disease transmission, they foster a safer environment while preserving the invaluable psychological and emotional advantages of patient–family interactions. Hence, the integration of virtual visit platforms into health policies should be considered as a sustainable option in patient care, promoting public and social health in times of crisis and beyond.

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Conflicts of interest

There are no conflicts of interest.

References

1. Wu, Joseph T., Kathy Leung, and Gabriel M. Leung. "Nowcasting and forecastingthe potential domestic and international spread of the 2019-nCoV outbreak originating in Wuhan, China: a modelling study." The lancet 395.10225 (2020): 689-697.
2. Sanyaolu, Adekunle, *et al*. "Global pandemicity of COVID-19: situation report as of June 9, 2020." Infectious Diseases: Research and Treatment 14 (2021): 1178633721991260.
3. Gorbalenya AE, Baker SC, Baric RS, de Groot RJ, Drosten C, Gulyaeva AA, *et al*. Severe acute respiratory syndrome-related coronavirus: The species and its viruses–a statement of the coronavirus study group. BioRxiv 2020. doi: 10.1101/2020.02.07.937862.
4. Dastoorpoor, Maryam, *et al*. "Epidemiological, Clinical and Imaging Features of 2019 Novel Coronavirus Diseases (COVID-19) in Southwestern Iran: A Descriptive Study." *Journal of Clinical Research in Paramedical Sciences* 12.1 (2023).
5. Salari N, Hosseinian-Far A, Jalali R, Vaisi-Raygani A, Rasoulpoor S, Mohammadi M, *et al*. Prevalence of stress, anxiety, depression among the general population during the COVID-19 pandemic: A systematic review and meta-analysis. Global Health 2020;16:1-11. doi: 10.1186/s12992-020-00589-w.
6. Sarboozi-Hoseinabadi T, Askari M, Miri K, Namazi Nia M. Depression, anxiety, and stress of nurses' family members in Covid–19 pandemic; A case study of Torbat-e Heydariyeh hospitals. Iran J War Public Health 2020;12:241-8.
7. Bao Y, Sun Y, Meng S, Shi J, Lu L. 2019-nCoV epidemic: Address mental health care to empower society. Lancet 2020;395:e37-8.
8. Khademian F, Delavari S, Koohjani Z, Khademian Z. An investigation of depression, anxiety, and stress and its relating factors during COVID-19 pandemic in Iran. BMC Public Health 2021;21:1-7. doi: 10.1186/s12889-021-10329-3.
9. Sheikhbardsiri H, Doustmohammadi MM, Afshar PJ, Heidarijamebozorgi M, Khankeh H, Beyramijam M. Anxiety, stress and depression levels among nurses of educational hospitals in Iran: Time of performing nursing care for suspected and confirmed COVID-19 patients. J Educ Health Promot 2021;10:447. doi: 10.4103/jehp.jehp_1319_20.
10. Sheikhbardsiri H, Jangipour Afshar P, Golitaleb M, Moayedi S, Torres M, Moghadari M. Stress, anxiety, and depression levels among paramedical prehospital personnel (road and city bases): In time of performing mission for suspected and confirmed COVID-19 patients. Minerva 2022;63:104-10.
11. World Health Organization. Coronavirus Disease (COVID-2019) Situation Reports. Geneva: WHO; 2020.
12. Sheikhbardsiri H, Tavan A, Afshar PJ, Salahi S, Heidari-Jamebozorgi M. Investigating the burden of disease dimensions (time-dependent, developmental, physical, social and emotional) among family caregivers with COVID-19 patients in Iran. BMC Prim Care 2022;23:165.
13. Niknamian S. The impact of stress, anxiety, fear and depression in the cause of cancer in humans. Am J Biomed Sci Res 2019;3. doi: 10.34297/AJBSR.2019.03.000696.

14. Sarani A, Mousavi SH, Salahi S, Hasani F, Abdar ZE, Sheikhbardsiri H. Emotional intelligence and self-efficacy among deputy's administrative staff of Kerman University of Medical Sciences. J Educ Health Promot 2020;9:105.
15. Yao H, Chen J-H, Xu Y-F. Patients with mental health disorders in the COVID-19 epidemic. Lancet Psychiatry 2020;7:e21. doi: 10.1016/S2215-0366(20)30090-0.
16. Liu S, Yang L, Zhang C, Xiang Y-T, Liu Z, Hu S, *et al*. Online mental health services in China during the COVID-19 outbreak. Lancet Psychiatry 2020;7:e17-8.
17. Yang L, Wu D, Hou Y, Wang X, Dai N, Wang G, *et al*. Analysis of psychological state and clinical psychological intervention model of patients with COVID-19. MedRxiv 2020. doi: 10.1101/2020.03.22.20040899.
18. Hadian M, Jabbari A, Abdollahi M, Hosseini E, Sheikhbardsiri H. Explore pre-hospital emergency challenges in the face of the COVID-19 pandemic: A quality content analysis in the Iranian context. Front Public Health 2022;10:864019. doi: 10.3389/fpubh.2022.864019.
19. Zhou X, Snoswell CL, Harding LE, Bambling M, Edirippulige S, Bai X, *et al*. The role of telehealth in reducing the mental health burden from COVID-19. Telemed J E-Health 2020;26:377-9.
20. Miri K, Mohammadi E, Vanaki Z. Trend in the role of licensed practical nurses in health care system: A situational analysis. Nurs Forum 2021;56:9-18.
21. Erriu M, Cimino S, Cerniglia L. The role of family relationships in eating disorders in adolescents: A narrative review. Behav Sci 2020;10:71. doi: 10.3390/bs10040071.
22. Norozi HM, Golmohammadi Kavaki M, Hajiabadi F, Behnam Vashani H. The effect of motivational abdominal breathing device on breathing patterns and shortness of breath in patients with chronic obstructive pulmonary disease. Evid Based Care 2017;6:36-46.
23. Kaviani F, Aliakbari F, Sheikhbardsiri H, Arbon P. Nursing students' competency to attend disaster situations: A study in Western Iran. Disaster Med Public Health Prep 2022;16:2044-8.
24. Rafiee F, Taghipour M, Hashemi S. Analyzing the concept of family-centered care in ICU: Rodgers evolutionary approach. Health Res 2020;4:8-25.
25. Mohammadi MMD, Sheikhasadi H, Mahani SA, Taheri A, Sheikhbardsiri H, Abdi K. The effect of bio ethical principles education on ethical attitude of prehospital paramedic personnel. J Educ Health Promot 2021;10:289. doi: 10.4103/jehp.jehp_708_20.
26. Kandori K, Okada Y, Ishii W, Narumiya H, Maebayashi Y, Iizuka R. Association between visitation restriction during the COVID-19 pandemic and delirium incidence among emergency admission patients: A single-center retrospective observational cohort study in Japan. J Intensive Care 2020;8:1-9.
27. Lovibond PF, Lovibond SH. The structure of negative emotional states: Comparison of the depression anxiety stress scales (DASS) with the beck depression and anxiety inventories. Behav Res Ther 1995;33:335-43.
28. Mehdipour-Rabori R, Nematollahi M. The effect of recommended Azkar on anxiety, stress, and depression in families of patients undergoing open heart surgery. Iran J Nurs Midwifery Res 2014;19:238-41.
29. Najafi Kalyani M, Pourjam E, Jamshidi N, Karimi S, Najafi Kalyani V. Survey of stress, anxiety, depression and self-concept of students of Fasa University of medical sciences, 2010. J Fasa Univ Med Sci 2013;3:235-40.
30. Shahdosti H, Mazlom SR, Vaghee S, Amini S. Evaluating the effect of planned online video visitations on anxiety and depression of patients at open heart intensive care unit: A randomized controlled trial. Iran Red Crescent Med J 2020;22:e102578. doi: 10.5812/ircmj. 102578.
31. Zahedifar F, Nejatifar Z, Rafiei S, Hashemi F. The effect of educational intervention on anxiety and quality of life among individuals referring to healthcare centers in the face of COVID-19. Acta Med Iranica 2021;59:484-90.
32. Fumagalli S, Boncinelli L, Lo Nostro A, Valoti P, Baldereschi G, Di Bari M, *et al*. Reduced cardiocirculatory complications with unrestrictive visiting policy in an intensive care unit: Results from a pilot, randomized trial. Circulation 2006;113:946-52.
33. Kebapcı A, Türkmen E. The effect of structured virtual patient visits (sVPVs) on COVID-19 patients and relatives' anxiety levels in intensive care unit. J Clin Nurs 2022;31:2900-9.
34. Yari-Bajelani B, Khaleghparast S, Imanipour M, Totonchi Z, Gholami A, Shahrabadi S. The effect of open visiting policy on sleep quality, anxiety, and patient satisfaction after coronary arteries bypass graft surgery. Iran J Cardiovasc Nurs 2019;7:6-13.
35. Younesi EH, Sabzi Z, Brojerdi M, Kolagari S. The experiences of family members of COVID-19 patients in Iran: A qualitative study. Ethiop J Health Sci 2021;31:1099-108.
36. Holmes EA, O'Connor RC, Perry VH, Tracey I, Wessely S, Arseneault L, *et al*. Multidisciplinary research priorities for the COVID-19 pandemic: A call for action for mental health science. Lancet Psychiatry 2020;7:547-60.
37. Ahmadian R, Rahmani R, Rahimi A. Effect of scheduled visiting on hospital anxiety and depression of hospitalized acute coronary syndrome patient in cardiac careunit in Baqiyatallah hospital. J Military Psychol 2013;4:24-31.
38. Ning J, Cope V. Open visiting in adult intensive care units–A structured literature review. Intensive Crit Care Nurs 2020;56:102763. doi: 10.1016/j.iccn.2019.102763.
39. Shatri H, Prabu OG, Tetrasiwi EN, Faisal E, Putranto R, Ismail RI. The role of online psychotherapy in COVID-19: An evidence based clinical review. Acta Med Indonesiana 2021;53:352-9.
40. Smith AC, Thomas E, Snoswell CL, Haydon H, Mehrotra A, Clemensen J, *et al*. Telehealth for global emergencies: Implications for coronavirus disease 2019 (COVID-19). J Telemed Telecare 2020;26:309-13.
41. Shabahang R, Aruguete MS, McCutcheon L. Video-based cognitive-behavioral intervention for COVID-19 anxiety: A randomized controlled trial. Trends Psychiatry Psychother 2021;43:141-50.
42. Lee AL, Tilley L, Baenziger S, Hoy R, Glaspole I. The perceptions of telehealth physiotherapy for people with bronchiectasis during a global pandemic—A qualitative study. J Clin Med 2022;11:1315. doi: 10.3390/jcm11051315.