Prevalence of Fear and Anxiety Due to Covid-19 in Medical Staff and Non-medical Population: A Systematic Review Study

Maryam Ahmadi Chegeni[1], Ali Dalband[2], Sara Rasta[3], Faraz Zandiyeh[4], Mohsen Zeraatpishe[5], Elahe Zaremoghadam[6*]

[1]Department of Emergency Medicine, Imam Hossein Hospital, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran. E-mail: ahmadi.gemini@gmail.com

[2]Student Research Committee, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran. Email: a.dalband96@gmail.com

[3]Department of Emergency Medicine, Imam Hossein Hospital, School of Medicine, Shahid Beheshti University of Medical Sciences, Tehran, Iran. E-mail: Sara.rasta1401@gmail .com

[4]Department of Emergency Medicine, Shohadaye Salamat hospital, Iran University of Medical Sciences, Tehran, Iran. E-mail: dr_faraz_z@yahoo.com

[5]DDS, Department of Oral Medicine and Orofacial Pain, School of Dentistry, Kerman University of Medical Sciences, Kerman, Iran. E-mail: mohsenzeraatpishe@yahoo.com

[6*]Department of Internal Medicine, School of Medicine, Birjand University of Medical Sciences, Birjand, Iran. E-mail: dr.elahe.zaremoghadam.65@gmail.com

Abstract

Introduction: The lack of any definitive treatment or preventive method, and the prediction of some epidemiologists that most of the population will infected with Covid-19, has caused a lot of stress and anxiety in people. So study aimed to review the prevalence of fear and anxiety due to Covid-19 in medical staff and non-medical population.

Method: in this study the databases including PubMed, Web of Science (ISI), Scopus, PsycINFO, EMBASE, Google Scholar, and national databases such as Irandoc, Civilica, MagIran SID, using the keywords of fear, anxiety, prevalence, and covid-19 from the start of Covid-19 pandemic at December 2019 until July 2022 were searched in order to find the related articles.

Results: Anxiety prevalence in women was higher than in men, in people who follow the news related to Covid-19 was more than those who didn't follow, among younger people was higher than older, in people in the region with the high epidemic of covid-19 was more than a low epidemic region, and in people who had an unchanging residence was higher than those who change. Also, anxiety prevalence among medical staff was higher than the non-medical.

Conclusion: The prevalence of anxiety in most people especially in medical staff was high. Special measures should be taken to reduce anxiety among the medical staff and non-medical population.

Keywords: Fear, Anxiety, Covid-19, Prevalence.

DOI: 10.47750/pnr.2022.13.S03.148

INTRODUCTION

Severe acute respiratory syndrome coronavirus 2 (SARS-CoV2), was found for the first time from Wuhan, China, in December 2019 [1], For this reason named Coronavirus Disease 2019 (COVID-19) by World Health Organization (WHO) [2. 3]. This viral disease is an acute respiratory illness with unknown etiology, and highly contagious [4]. In late December 2019, the WHO announced the infection caused by this virus as a global emergency [5]. Epidemiological investigation of the initial cases of COVID-19 showed that many cases were exposed to the seafood market in Wuhan, China. The WHO report also states that the novel coronavirus-2019 was detected in environmental samples collected from the seafood market in Wuhan, China [6. 7]. Ji et al. reported that COVID-19 is a chimeric virus between a bat, coronavirus, and a coronavirus of unknown origin. By comparing with other animals, they found that snakes are very likely to be the reservoir of novel coronavirus-2019 [8]. Chan et al. confirmed that the 2019 novel coronavirus is a novel coronavirus that is closely related to the bat SARS coronavirus [9]. The spread of the novel coronavirus-2019 can potentially become a serious and dangerous threat to health and global health as well as regional economies [10. 11]. The growing prevalence of this disease has challenged the public health of the world and has led to a morbid fear of contracting it in different people [12]. The lack of any definitive treatment or preventive

method for covid-19, and the prediction of some epidemiologists that most of the population will be infected with Covid-19, has caused a lot of stress and anxiety in people [13]. Fear and anxiety due to disease are damaging and can lead to psychological disorders [14]. Anxiety about the covid-19 virus is common and it seems to be mostly due to being unknown and the lack of definitive medicine to treat this virus [15]. Regarding the situation of the covid-19 pandemic, which has affected all important economic, political, and social aspects of the world, the discussion of the psychological effects, including the level of anxiety of this viral disease, on the mental health of people at different levels of society is very important [16]. So this systematic review study aimed to evaluate the prevalence of fear and anxiety due to covid-19.

METHOD & MATERIALS

Search methodology and article selection

in this systematic review study we followed the Preferred Reporting Items for Systematic Reviews and Meta-analyses (PRISMA) guidelines for conducting this systematic review and meta-analysis [17]. The searches were performed on the following electronic databases: Pubmed, EMBASE, Web of Science (ISI), Scopus, PsycINFO, Google scholar, and Persian databases, including Scientific Information Database (SID), Irandoc, and MagIran were searched. The following terms were used as text words and keywords in databases (for example PubMed): Anxiety, fear, and covid-19 from the start of Covid-19 pandemic at December 2019 through July 2022 were used. Two authors independently performed screenings of these databases. Also, these authors considered the reference lists of articles at the full-text stage and reviewed articles on the topic of fear, anxiety and covid-19.

Eligibility criteria

We considered for inclusion criteria, observational studies (Cohort studies, cross-sectional) published as original or conference abstracts and used a validated method or instrument to assess fear, anxiety, covid-19, and also for selections of studies. Exclusion criteria included Studies that did not report enough data to determine the fear, anxiety, covid-19, and all types of review articles, letters, editorials, and interventional studies were excluded. The two mentioned investigators independently determined the study's eligibility. At beginning of the search, no linguistic restrictions were applied

Data collection

Regarding the selection criteria, the results of the search were screened for relevant titles and abstracts. The relevant abstracts were chosen for full-text review. After that, data extraction was done individually by the two authors. Also, references to relevant articles were screened for relevance. Duplicates were removed. Then, for extracting the following information from included studies, a standardized data collection form was used: first author, study design, sample size, purpose people, conclusion, and year of publication.

Study quality

For each included article, a second author investigated all extracted data during the quality assessment process. The Newcastle-Ottawa Scale (NOS) was used for assessing the methodological quality of studies. First, the keywords were searched in the desired databases based on the determined time range. The articles that were in harmony with the keywords of the research include fear, anxiety, and covid-19 was selected.

RESULTS

In this study, all published studies analyzing the fear, anxiety, and covid-19 in Iran and other countries were systematically reviewed and meta-analyzed based on the PRISMA guidelines Fig.1. In the initial search of databases, 895 studies were obtained, of which 674 studies were removed after duplication and 221 full-text studies were screened, of which 18 studies were included in the present study.

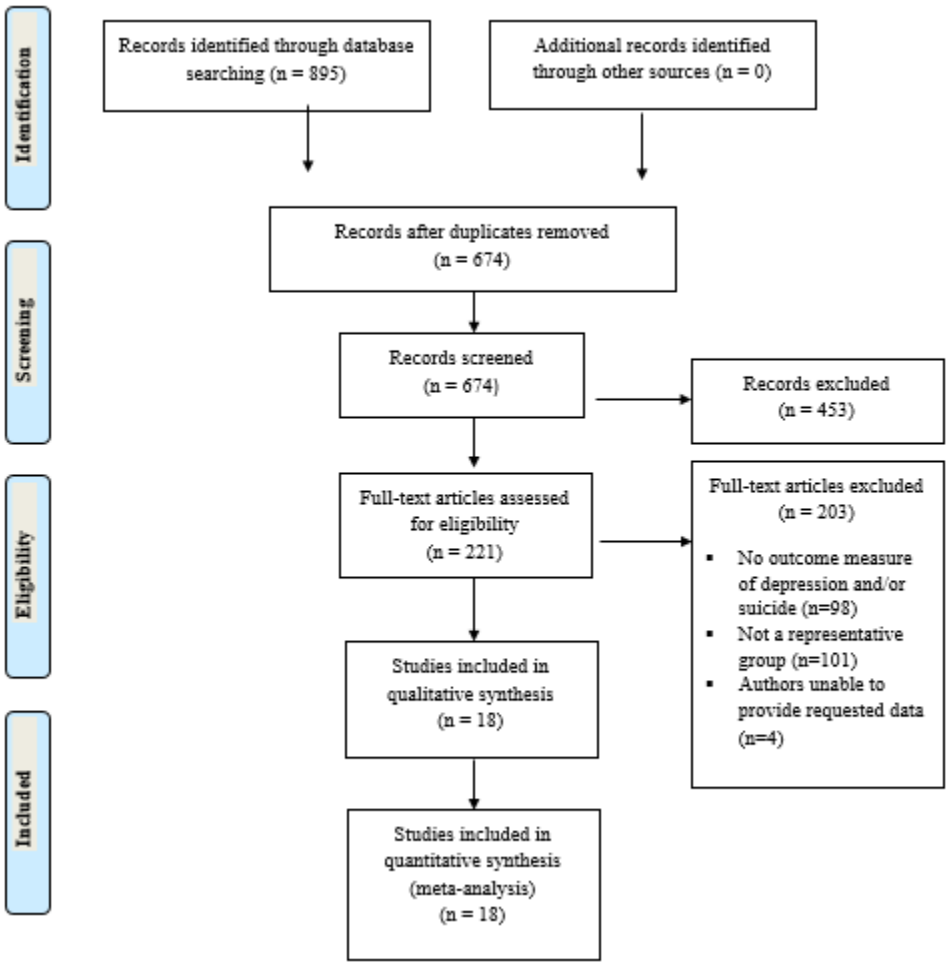

Fig.1: Four-phase PRISMA flow diagram showing the number of studies identified, screened, eligible, and included in the systematic review.

Result showed that the most commonly used data collection tools or scales were Corona Disease Anxiety Scale (CDAS), Self-rating Anxiety Scale (SAS), Depression, Anxiety, and Stress Scales (DASS), mental health measurements from (MHMF), Perceived Social Support Questionnaire (PSSQ), Perceived Organizational Support (POS) questionnaire, Self-reporting questionnaire (SRQ), Coronavirus Anxiety Scale (CAS), Generalized Anxiety Disorder (GAD), and Beck Anxiety Inventory (BAI).

Table 1: The frequency of conducted studies on fear and anxiety of covid-19

NO	First author	Purpose population	Tool & Scale	Sample Size	Conclusion
1	Labrague et al [18]	Medical Staff	PSSQ POS	325	37.8% of nurses had anxiety
2	Roy et al. [19]	Indian Adults	SRQ	662	The prevalence of anxiety was 80%.
3	Huang et al. [20]	Medical Staff	SAS	246	medical staff have high anxiety and stress
4	Zhao et al. [21]	Chines Population	BAI	800	People in the region with the high epidemic of covid-19 had more anxiety.
5	Tan et al. [22]	Medical Staff	DASS-21	470	Non-medical staff has more anxiety than medical staff
6	Husky et al. [23]	Freshman in France	SRQ	291	People who had an unchanging residence reported higher levels of anxiety.
7	Liu et al. [24]	Medical Staff	SAS	512	Anxiety of the Covid-19 infected cities' medical staff was higher than the medical staff of other cities

8	Lai et al. [25]	Medical Staff	MHMF	1257	Medical staffs that were in direct contact with patients with Covid-19 had more anxiety than those who were not.
9	Li et al. [26]	Population of 3 cities in Chine	GAD-1	88611	The total prevalence of anxiety due to covid-19 was 67.13% and it was more in women than men.
10	Amin et al. [27]	Medical Staff	SRQ-20	385	The prevalence of anxiety in frontline doctors in Pakistan was 43%
11	Rahmanian et al. [28]	Medical Staff	CDAS	402	The medical staff has more anxiety than the non-medical.
12	Aalizade et al. [29]	>20 years in Tehran	GHQ	618	The prevalence of anxiety was 47%
13	Nikcevic et al. [30]	Chinese Men	GAD	7236	The overall prevalence of anxiety was 35.1% and younger people were higher anxiety than old people.
14	Lee et al. [31]	Medical Staff	CAS	398	Medical staffs that were in direct contact with patients with Covid-19 had more anxiety than those who were not.
15	Moghanibashi et al. [32]	31 provinces of Iran	DASS 21	10754	The level of anxiety is higher in people who follow the news related to Covid-19 and in the age range of 21 to 40 years.
16	Lebel et al. [33]	Canadian Pregnant Women	EPDS	1987	Prevalence of anxiety was 57%
17	Fard et al. [29]	Medical Staff	GAD	1257	There is a high prevalence of anxiety in medical staff exposed to Covid-19.
18	Hu et al. [34]	Medical Staff	GAD	85	The prevalence of anxiety was 38.8% and was higher in women than men

Results showed that the prevalence of anxiety in most people especially in medical staff was high. Anxiety prevalence of more than 40% was reported in most of the studies. Anxiety prevalence in women was higher than in men, in people who follow the news related to Covid-19 was more than those who didn't follow, among younger people was higher than older, in people in the region with the high epidemic of covid-19 was more than a low epidemic region, and in people who had an unchanging residence was higher than those who change. Also, anxiety prevalence among medical staff was higher than the non-medical, in the Covid-19 infected cities' medical staff was higher than the medical staff of other cities, in frontline medical staff was higher than among medical staff who were not in the frontline, and in medical staffs who were in direct contact with patients with Covid-19 was higher than those who were not.

Discussion

Anxiety is a response to perceived or real threatening events or situations [31]. Anxiety is a common symptom in patients with respiratory disorders and can significantly reduce the quality of life of patients. In most cases, the measurement of anxiety includes physical issues that can overlap with symptoms of respiratory disease and the side effects of drugs [35]. Among the causes of anxiety in covid-19, it can be pointed out that in critical situations, social and individual structures of life are disturbed. These disturbances mean a decrease in a person's power of control and a decrease in the predictability of the flow of life, which causes panic among people [36]. For example, during quarantine, when the routine of a person's life is disturbed, he can predict his future less and as a result, a feeling of insecurity is created. This lack of security will cause anxiety. Anxiety is the most basic characteristic of crisis situations and the unpredictability of the future plays the biggest role in creating it [37].

One of the most important reasons for anxiety in the medical staff during the covid-19 epidemic is that family members cannot be in contact with them. Health care workers also experience anxiety due to the possibility of spreading the virus to themselves and their family members [38]. Being under mental and physical pressure from the family, as well as the risk of being infected with Covid-19 disease, isolation, and fatigue due to increasing work volume can be other causes of anxiety in the treatment staff [25]. Problems related to mental health such as anxiety may interrupt the decision-making power of healthcare staff [39]. Therefore, information about mental health concerns is very important for the prevention and control of the Covid-19 pandemic [40]. In order to improve mental health and reduce anxiety among the medical staff, it is necessary to emphasize on self-care as much as possible and reduce overwork by matching working hours and work shift arrangements [41]. In addition, knowledge about infection, control and self-protection should be improved among health care providers [42]. Therefore, healthcare workers have a higher chance of contracting the disease Covid-19. Also, in the face of a heavy workload, they experience moral dilemmas and control social changes and emotional stress experienced by patients [43]. They are also at a lower level of immunity due to long working hours and high anxiety, which increases their chances of contracting Covid-19 [41].

Conclusion

The prevalence of anxiety in most people especially in medical staff was high. Anxiety prevalence of more than 40% was reported in most of the studies. Considering the importance of mental health in the medical staff and non-medical population and the prevalence of covid-19, the

importance of reducing anxiety in them, and the important role it plays in strengthening immunity, special measures should be taken to reduce anxiety among the medical staff and non-medical population.

Conflicts of Interest

The authors declare no conflict of interest.

Funding/Support

This research did not receive any specific grant from funding agencies in public, commercial, or not-for-profit sectors.

References

Atefeh Shadkam, Ali Akbar Mahdavi, Masoomeh Raoufi, Hossein Mardanparvar, Zahra Fatehi, The prevalence of single pulmonary nodules as the first sign of COVID-19 pneumonia in CT scans of patients suspected to COVID-19. Academic Journal of Health Sciences 2022; 37(5): 28 - 32.

Moradkhani S., Chegeni M., Mousapour R., Karrabi K., Charebakhshi F., Safa K., et al., Correlation Of Initial Chest CT Finding of Covid-19 Patients with Their Death Risk. Journal of Complementary Medicine Research 2021; 12(4): 144-147.

Daneshfar M., Dadashzadeh N., Ahmadpour M., Haghi H.R., Rahmani V., Frouzesh M., et al., Lessons of mortality following COVID-19 epidemic in the United States especially in the geriatrics. Journal of Nephropharmacology 2020; 10(1): e06-e06.

Shadkam A., Kharaji M., Raoufi M., Fatehi Z., Mandavi A., Association between lymphopenia and disease severity in Covid 19 patients with single pulmonary nodule. International Journal of Early Childhood Special Education 2022; 14(1):3106-3110.

Huang C., Wang Y., Li X., Ren L., Zhao J., Hu Y., et al., Clinical features of patients infected with 2019 novel coronavirus in Wuhan, China. The lancet 2020; 395(10223):497-506.

Wu F., Zhao S., Yu B., Chen Y.-M., Wang W., Song Z.-G., et al., A new coronavirus associated with human respiratory disease in China. Nature 2020; 579(7798):265-269.

Hamidian Jahromi A., Mazloom S., Ballard D., What the European and American health care systems can learn from China COVID-19 epidemic; action planning using purpose designed medical telecommunication, courier services, home-based quarantine, and COVID-19 walk-in centers. Immunopathol Persa. 2020; 6 (2): e17. DOI: 10.34172/ipp. 2020. 17. By failing to prepare, you are preparing to fail 2020.

Ji W., Wang W., Zhao X., Zai J., Li X., Homologous recombination within the spike glycoprotein of the newly identified coronavirus 2019-nCoV may boost cross-species transmission from snake to human. Journal of Medical Virology, doi 2020; 10.

Chan J.F.-W., Kok K.-H., Zhu Z., Chu H., To K.K.-W., Yuan S., et al., Genomic characterization of the 2019 novel human-pathogenic coronavirus isolated from a patient with atypical pneumonia after visiting Wuhan. Emerging microbes & infections 2020; 9(1):221-236.

Zhou P., Yang X.-L., Wang X.-G., Hu B., Zhang L., Zhang W., et al., A pneumonia outbreak associated with a new coronavirus of probable bat origin. nature 2020; 579(7798):270-273.

Pouramini A., Kafi F., Hassanzadeh S., Vitamin D and COVID-19 infection; recent findings. J. Ren. Endocrinol 2021; 7:e19.

Veisi S., Imani S., Behrooz B., Imani S., The evaluation of the psychometric properties of fear of disease coronaviruses scale (Covid-2019). Journal of New Advances in Behavioral Sciences 2020; 5(42):1-10.

Anderson R.M., Heesterbeek H., Klinkenberg D., Hollingsworth T.D., How will country-based mitigation measures influence the course of the COVID-19 epidemic? The lancet 2020; 395(10228):931-934.

Barrett K, Barman S, Yuan J, Brooks H, Ganong's review of medical physiology. 26. 2019, New York: McGraw-Hill Education. available at https:// www.amazon.com/Ganongs-Review-Medical-Physiology-Twenty/ dp/1260122409.

Bajema K.L., Oster A.M., McGovern O.L., Lindstrom S., Stenger M.R., Anderson T.C., et al., Persons evaluated for 2019 novel coronavirus—United States, January 2020. Morbidity and mortality weekly report 2020; 69(6):166.

Li S., Wang Y., Xue J., Zhao N., Zhu T., The impact of COVID-19 epidemic declaration on psychological consequences: a study on active Weibo users. International journal of environmental research and public health 2020; 17(6):2032.

Moher D., Shamseer L., Clarke M., Ghersi D., Liberati A., Petticrew M., et al., Preferred reporting items for systematic review and meta-analysis protocols (PRISMA-P) 2015 statement. Systematic reviews 2015; 4(1):1-9.

Labrague L.J., De los Santos J.A.A., COVID-19 anxiety among front-line nurses: Predictive role of organisational support, personal resilience and social support. Journal of nursing management 2020; 28(7):1653-1661.

Roy D., Tripathy S., Kar S.K., Sharma N., Verma S.K., Kaushal V., Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 pandemic. Asian journal of psychiatry 2020; 51:102083.

Huang J.Z., Han M., Luo T., Ren A., Zhou X., Mental health survey of medical staff in a tertiary infectious disease hospital for COVID-19. Zhonghua lao dong wei sheng zhi ye bing za zhi 2020:192-195.

Zhao H., He X., Fan G., Li L., Huang Q., Qiu Q., et al., COVID-19 infection outbreak increases anxiety level of general public in China: involved mechanisms and influencing factors. Journal of affective disorders 2020; 276:446-452.

Tan B.Y., Chew N.W., Lee G.K., Jing M., Goh Y., Yeo L.L., et al., Psychological impact of the COVID-19 pandemic on health care workers in Singapore. Annals of internal medicine 2020; 173(4):317-320.

Husky M.M., Kovess-Masfety V., Swendsen J.D., Stress and anxiety among university students in France during Covid-19 mandatory confinement. Comprehensive Psychiatry 2020; 102:152191.

Liu C.-Y., Yang Y.-z., Zhang X.-M., Xu X., Dou Q.-L., Zhang W.-W., et al., The prevalence and influencing factors in anxiety in medical workers fighting COVID-19 in China: a cross-sectional survey. Epidemiology & Infection 2020; 148.

Lai J., Ma S., Wang Y., Cai Z., Hu J., Wei N., et al., Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA network open 2020; 3(3):e203976-e203976.

Li Q., Miao Y., Zeng X., Tarimo C.S., Wu C., Wu J., Prevalence and factors for anxiety during the coronavirus disease 2019 (COVID-19) epidemic among the teachers in China. Journal of affective disorders 2020; 277:153-158.

Amin F., Sharif S., Saeed R., Durrani N., Jilani D., COVID-19 pandemic-knowledge, perception, anxiety and depression among frontline doctors of Pakistan. BMC psychiatry 2020; 20(1):1-9.

Rahmanian M., Kamali A.R., Mosalanezhad H., Foroughian M., Kalani N., Hatami N., et al., A comparative study on anxiety of medical and non-medical staff due to exposure and non-exposure to the novel coronavirus disease. Journal of Arak University of Medical Sciences 2020; 23(5):710-723.

Fard S.A., Saffarinia M., The prediction of mental health based on the anxiety and the social cohesion that caused by Coronavirus. Social Psychology Research Quarterly 2020; 9(36):129-41.

Nikčević A.V., Spada M.M., The COVID-19 anxiety syndrome scale: Development and psychometric properties. Psychiatry research 2020; 292:113322.

Lee S.A., Mathis A.A., Jobe M.C., Pappalardo E.A., Clinically significant

fear and anxiety of COVID-19: A psychometric examination of the Coronavirus Anxiety Scale. Psychiatry research 2020; 290:113112.

Moghanibashi-Mansourieh A., Assessing the anxiety level of Iranian general population during COVID-19 outbreak. Asian journal of psychiatry 2020; 51:102076.

Lebel C., MacKinnon A., Bagshawe M., Tomfohr-Madsen L., Giesbrecht G., Elevated depression and anxiety symptoms among pregnant individuals during the COVID-19 pandemic. Journal of affective disorders 2020; 277:5-13.

Hu Y., Chen Y., Zheng Y., You C., Tan J., Hu L., et al., Factors related to mental health of inpatients with COVID-19 in Wuhan, China. Brain, behavior, and immunity 2020; 89:587-593.

Alipour A., Ghadami A., Alipour Z., Abdollahzadeh H., Preliminary validation of the Corona Disease Anxiety Scale (CDAS) in the Iranian sample. Quarterly Journal of Health Psychology 2020; 8(32):163-175.

Rubin G.J., Wessely S., The psychological effects of quarantining a city. Bmj 2020; 368.

Menec V.H., Chipperfield J.G., Perry R.P., Self-perceptions of health: A prospective analysis of mortality, control, and health. The Journals of Gerontology Series B: Psychological Sciences and Social Sciences 1999; 54(2):P85-P93.

Guo J., Liao L., Wang B., Li X., Guo L., Tong Z., et al., Psychological effects of COVID-19 on hospital staff: a national cross-sectional survey of China mainland. Available at SSRN 3550050 2020.

Rana W., Mukhtar S., Mukhtar S., Mental health of medical workers in Pakistan during the pandemic COVID-19 outbreak. Asian journal of psychiatry 2020; 51:102080.

Vickers N.J., Animal communication: when i'm calling you, will you answer too? Current biology 2017; 27(14):R713-R715.

Adams J.G., Walls R.M., Supporting the health care workforce during the COVID-19 global epidemic. Jama 2020; 323(15):1439-1440.

Saqlain K., attitude, practice and perceived barriers among healthcare workers regarding COVID-19: a cross-sectional survey from Pakistan. J. Hosp. Infect (105):419.

Cohen I.G., Crespo A.M., White D.B., Potential legal liability for withdrawing or withholding ventilators during COVID-19: assessing the risks and identifying needed reforms. Jama 2020; 323(19): 1901-1902.