

# Prevalence of COVID-19 related factors among medical and emergency and critical care nursing students during COVID-19 pandemic outbreak

Waleed Rana<sup>1</sup>, Shamim Mukhtar<sup>2</sup>, Sonia Mukhtar<sup>3</sup>

<sup>1</sup>Hainan Medical Hospital, Haikou, China

<sup>2</sup>College of Earth and Environmental Sciences, University of the Punjab, Lahore, Pakistan

<sup>3</sup>Institute of Clinical Psychology, University of Management and Technology, Lahore, Pakistan

Received: 2021-12-03.

Accepted: 2022-02-11



This work is licensed under a  
Creative Commons Attribution 4.0  
International License

J Clin Med Kaz 2022; 19(1):85-89

Corresponding author:

Waleed Rana.

E-mail: [waleedrana312@gmail.com](mailto:waleedrana312@gmail.com);

ORCID: 0000-0002-6679-5112

## Abstract

Background: COVID-19 pandemic outbreak has become an unprecedented threat for global mental health. Medical and nursing healthcare profession is among the most effected due to both COVID-19 and COVID-19 related measures.

**Material and methods:** This cross-sectional study aimed to examine undergraduate medical and emergency and critical care nursing students' mental health through attitudes, perception, anxiety, and coping strategies during COVID-19 outbreak.

**Results:** The study was conducted using online questionnaire. COVID-19 has led to instigate strong reactions amongst medical and emergency and critical care nursing student population (N=330). Results have indicated that medical and nursing students had adequate knowledge and high risk perception. Participants expressed unsatisfaction with the state sanctioned preventive strategies to curtail COVID-19. Participants showed unwillingness towards public and private academic institutions' introduced learning programs. Moreover, participants utilized a wide range of coping strategies to manage mental health problems during the COVID-19 related lockdown period.

**Conclusion:** It is highly imperative to address medical and emergency and critical care nursing students' mental health needs during and post-COVID-19 period.

**Key words:** COVID-19, coping strategies, medical and emergency and critical care nursing students, mental health

## Introduction

COVID-19 (Coronavirus Disease – 2019) has spread across the 213 countries and territories across the world. COVID-19 has drastic impacts on physical and psychological mental health, apart from the devastating impact on all systems around the globe, among the general population [1,2]. Government of Pakistan closed down all academic institutes from March 11, 2020 to May 31, 2020. Later, the lockdown period was extended to April 7, 2020, which keeping in view of the condition across the country has been extended again. Despite the proactive and immediate preparedness at the initial stage of COVID-19 pandemic outbreak, latest relaxation in the lockdown has

brought overwhelming surge in cases across all regions in Pakistan – 226 thousand cases as of the date. National Institute of Health (NIH) has implemented health care initiatives in the wake of COVID-19 outbreak in Pakistan [3,4]. Although, global health organizations stated earlier in the pandemic outbreak that the mental health impact on general population could become a secondary crisis, yet Pakistan is lagging behind in terms of mental health policy and psychological crisis intervention implementation [5].

COVID-19 pandemic outbreak, in itself, and the associated emergency measures of COVID-19, in addition, are creating mental health impacts and psychosocial issues among general public [6,7]. But the mental health

of youth has drastic impacts from the social distancing to closed academic institutes. Classes are postponed, students are being promoted based on previous results, and board examinations will be held accordingly and a mass online classes system are being introduced in Pakistan, for the first time. Majority of the academic intuitions are facing challenges with virtual learning from faculty to students. Pakistan's higher education commissions are striving to establish online management approaches and to promote virtual learning environment among students. Previous studies have highlighted the academic and mental health challenges on multifaceted and multifarious levels [8].

Youth's mental health from constant (mis)infodemics about the pandemic and its effects; self-isolation and social distancing; home confinement; closed socializing institutions and agents; and the anxiety (uncertainty and unpredictability) revolving around the emergency situation as a product of COVID-19 are having adverse impact on the psychosocial health of students. Symptoms such as general attitudinal change, anxiety, depression, fear, stress, and unhelpful coping strategies are some of the frequently occurring mental health concerns during COVID-19 pandemic outbreak [9,10]. One extensive study explored that 0.9% students exhibited severe symptoms of anxiety, 2.7% moderate symptoms and 21.3% mild symptoms. Anxiety and coping strategies are multifaceted phenomenon, varying from increased to decreased response based on the actual and perceived situations. Attitudes, anxiety and coping strategies could help determine help-seeking or help-denying; adherence towards lockdown policies or civil disobedience; behavioral modification or resistance; compliance with changed lifestyle or reluctance; adjustment or maladjustment; and wellbeing or mental health issues among the young population segment. To the best of our knowledge, this is the first study of prevalence of medical and emergency and critical care nursing students' mental health examined through attitudes, perception, anxiety and coping strategies during the COVID-19 pandemic. Considering the relevance of these conditions, this study aimed at assessing COVID-19 related factors amongst students such as attitudes, perception, anxiety and coping strategies of students during the COVID-19 pandemic in Pakistan. This study investigated and analyzed the mental health status of students during the COVID-19 pandemic outbreak in Pakistan: a) to evaluate the psychological situation of medical and emergency and critical care nursing students; b) to provide a theoretical framework for psychological intervention with medical and emergency and critical care nursing students; c) and provide a ground for the promulgation of local and global medical and emergency and critical care nursing student mental health policies.

## Material and methods

This was a cross-sectional study conducted during the period of April 20 – May 20, 2020. The targeted sample was composed of undergraduate medical and emergency and critical care nursing students of local academic institutes. The participants in the study were sampled through cluster sampling. The sample consisted of 330 students from the undergraduate enrolled medical and emergency and critical care nursing. The mental health of students was assessed during the COVID-19 outbreak by using structured questionnaires. Self-structured questionnaires were used to collect the data. The instrument demonstrated high correlation, validity, reliability and Cronbach's alpha. Items included were "my constant thoughts about coronavirus", "my frustration towards people's lack of compliance" etc. Student participants were determined

using the snowball sampling techniques. Participants who answered the online survey developed through Google forms with an appended consent form. The survey link was sent to the participants through social media platforms (Facebook, WhatsApp and Twitter). The research population consisted of individuals above 18 years in various academic institutes across the country. Statistical analyses were carried out using SPSS IBM-21 software. The institutional review board of the author's practicing medical college and hospital approved this study. All participants were provided with the informed consent appended with the study.

## Results and Discussion

A total of 330 participants who completed the questionnaires, 212 (64.24%) were female participants, 100 (30.30 %) were male and 18 (5.45%) were members of the LGBTQI+ community. Participants belong to the age group of 20-25 years (176 or 53%) and single in terms of relationship status (313 or 94%) with family income less than a ten thousand Pakistani rupee per month (218 or 66%). And the majority of the participants' major subject was emergency nursing (75 or 22%). Majority of the participants (243 or 73%) were well aware of the epidemiology and transmission of COVID-19 including the modes of transmission through physical contact, touching, kissing, coughing and sneezing. Participants were aware of the primary symptomology of COVID-19 is fever and coughing (322 or 97.55%). And majority of the participants (303 or 91%) were well aware of the importance of preventive and precautionary strategies including staying at home, maintaining social distancing and self-isolation to curtail the spread of coronavirus among family, friends and community. Studies conducted so far have provided evidence of epidemiology and symptomology of COVID-19 through social contact as mainly transmission mode [11] with mild to severe symptoms [12] through symptomatic and asymptomatic transmission [13].

Participants' perception (206 or 62%) on the risks of COVID-19 and the importance of COVID-19 related precautionary measures showed the understanding of high risk level of COVID-19. Furthermore, participants' perceived following precautionary and preventive measures as highly effective in controlling coronavirus spread: staying at home, social distancing, sanitizing and washing hands, screening and testing, and the implementation of nationwide lockdown. Additionally, Rana et al (2020) and Mukhtar (2020) from Pakistan stressed upon the implementation of the lockdown measures as an effective tool to prevent the transmission of coronavirus in addition to the prevalence of mental health and psychological issues among general public. Participants' attitudes toward COVID-19 screening, treatment and vaccination indicate that the majority of the participants (268 or 81%) were willing to be vaccinated against coronavirus, while only a few number of participants (62 or 18%) rejected the possibility of vaccination. Those participants who were not willing to be vaccinated (150 or 45.45%) reported distrust in science and apprehension towards health risks and side effects. This is similar in line with the earlier studies' findings which indicated that the main concern of students' during the pandemic influenza H1N1 was related to the vaccinations' safety [14].

Study participants' reported dissatisfaction and distrust (135 or 40.9%) with the state's mitigation and actions to curtail the spread of the coronavirus in the community. Many participants (137 or 41.51%) reported less satisfaction with the information dissemination process ordained by the government, however, reported (184 or 55%) high satisfaction with the services of

medical health practitioners (doctors, nurses, and paramedical staff) of the frontline workers. This is divergent with the results of the study conducted at Australia (developed country) whose respondents reported satisfaction with the government's actions in handling of COVID-19 in Australia [15] (Table 1).

**Table 1**

Medical and emergency and Critical Care Nursing students' attitudes towards online programs during COVID-19 (n=330)

Reasons for saying 'yes'	%
To finish academic requirements	81.07
Misses academic environment	80.47
Online classes are convenient	54.44
Timely managed studies	53.25
Does not want to quit studies	42.01
Reasons for saying 'no':	
Unavailability of internet connection	75.48
Unavailability of computer	72.29
Unavailability of smartphones	61.78
Boring online modules	57.01
Difficulty in learning through online classes	41.40
Lack of contact with tutors	39.49

Further, attitude of medical and emergency and critical care nursing students' towards their education during the COVID-19 pandemic outbreak (as shown in table 1) indicated their affirmative reaction towards academic institutions' closing amidst COVID-19 (265 or 80%), and many participants (217 or 65.85%) approved with the extension of the classes to the next semester until the end of COVID-19 pandemic outbreak. However, many participants (196 or 59%) displayed apprehension with the online learning program. These participants further reported the reasons of dissatisfaction due to unavailable or unstable internet connection (238 or 72%). These findings are parallel with the results of Ja'ashan (2015) which indicated that the majority of the students expressed dissatisfaction with the online learning program due to internet connection problem [16] (Table 2).

Furthermore, the majority of the participants exhibited anxiety during the period of COVID-19 lockdown as shown in table 2. Majority of the medical and emergency and critical care nursing students (206 or 62.42%) were concerned about financial resources and food availability and other participants (54%) reported limited social contact, large gatherings and social distancing. These findings are parallel with the research which showed individuals were concerned about their families and acquaintances for coronavirus transmission during the on-going peak-time COVID-19 pandemic outbreak [17]. Studies moreover affirmed the impact of COVID-19 on the mental health of students [18] (Table 3).

In order to cope with the anxiety of the COVID-19 pandemic outbreak, participants responded a range of coping strategies and techniques as shown in. During the peak time of COVID-19 pandemic outbreak, participants reported following rigorous standardized infection control measures (297 or 90.19%) and 80% reported limited social contact and public mass gatherings to minimize public COVID-19 exposure. This study's findings are similar with the study of other studies which indicated that during disease outbreaks, individuals tend to follow strict precautionary infection personal protective measures [19-21].

The current study aimed at assessing attitudes, perceptions, anxiety and coping strategies of students indicated that medical and emergency and critical care nursing undergraduate students

**Table 2**

Medical and emergency and Critical Care Nursing students' anxiety (Impact of COVID-19 Scale ICVS) (Mukhtar et al., 2020) related to COVID-19 pandemic outbreak (n=330)

Sr. No	Items (I am worried about)	(%)
1	Getting infected from coronavirus.	62.64
2	My acquaintances getting infected of coronavirus	56.04
3	Our country's healthcare system is insufficient	54.15
4	Violation of coronavirus quarantine	51.70
5	That coronavirus health instructions is not followed	50.75
6	About feeling lonely	62.64
7	About the coronavirus-related death news	48.30
8	About the lack of funeral arrangement after coronavirus-related death	48.30
9	Limited scientific knowledge about coronavirus	45.85
10	My constant thoughts about coronavirus	44.15
11	My frustration towards people's lack of compliance	37.36
12	If someone coughed or sneeze near me, I feel conscious of getting infected of coronavirus	35.66
13	Thinking or hearing about coronavirus caused aches and pains in my body	34.91
14	I have difficulty in breathing because of coronavirus	34.31
15	I have troubled sleep because I worry about the coronavirus	33.58
16	Feeling bored	62.64
17	I regularly search internet for coronavirus related news	48.30
18	I spend more time on social media coronavirus related reports	45.85
19	I daily watch coronavirus related news on television	44.15
20	About restricted daily routine	50.75
21	Coronavirus affects my social relationships	62.64
22	Travelling spreads coronavirus	50.75
23	Visiting non-native's shops will make me affected	23.21
24	In-direct contact with foreigners can make me affected of coronavirus	22.25
25	Native traveler can make me infected of coronavirus	19.06
26	Foreigner can make me infected of coronavirus	19.06
27	Foreigners are more susceptible of coronavirus because of their lifestyle	18.68
28	Foreigners are more susceptible of coronavirus because of their faith	18.49
29	Foreigners are more susceptible of coronavirus because of their country origin	18.45
30	Visiting any other country will spread coronavirus	12.64
31	Food shortage due to coronavirus	12.30
32	My family's starvation due to coronavirus	11.21
33	My family will not survive of poverty after coronavirus lockdown	8.87

**Table 3**

Medical and emergency and Critical Care Nursing students' personal coping mechanisms related to COVID-19 pandemic outbreak (n=330)

Sr. No.	During the lockdown period	%
1.	To follow strict protective measures	90.19
2.	To research about COVID-19 mechanism and prevention	80.38
3.	Avoid public mass gatherings	78.87
4.	Praying and worship	68.87
5.	Chat with family and friends	58.87
6.	Using social media accounts	48.87
7.	Avoid COVID-19 related news	29.06
8.	Reschedule daily activities	22.45
9.	Seeking help and support	15.09
10.	Emotional catharsis	8.87

were aware of the COVID-19 pandemic related information even though there were gaps in the knowledge. Medical and emergency and critical care nursing students responded generally positive attitudes, perceptive understanding, anxiety towards governmental actions and various coping strategies to manage COVID-19 related factors. However a considerable number of medical and emergency and critical care nursing students displayed distrust and reluctance towards the COVID-19 vaccination. In the academic and educational context, medical and emergency and critical care nursing students were apprehensive towards online learning programs due to technology's unavailability and financial reasons. Participants further respond dissatisfaction with the government's role in curtailing COVID-19. Although medical and emergency and critical care nursing students expressed anxiety towards COVID-19 related factors yet they were well equipped with the coping strategies to manage the anxieties of COVID-19 related factors.

## Conclusion

The COVID-19 pandemic outbreak posed significant threat for general population students, however, medical and emergency and critical care nursing students' are impacted on

multiple levels especially among communities of low and middle income countries (LMICs). Government should strengthen their approaches to manage, disseminate information, timely assess, effectively test and vaccinate concerning any future outbreaks of epidemics or pandemics. Institutions should introduce innovative and helpful strategies to promote and address the mental health issues of students during and post the COVID-19 pandemic outbreak. Pakistan is still developing online learning and class modules and paradigm shift in pedagogical delivery. State should ensure the availability of educational support and develop policies considering the health emergences in the future.

**Disclosures:** There is no conflict of interest for all authors.

**Acknowledgements:** None.

**Funding:** None.

## References

1. Rana W, Mukhtar S, Mukhtar S, Mohiuddin G, & Ehmadi A. Psychological health of aging mental healthcare social workforce amidst coronavirus disease-2019 pandemic. *International Journal of Geriatric Psychiatry*, 2021; 36(3): 461-462. <https://doi.org/10.1002/gps.5456>
2. Lee J. Mental health effects of school closures during COVID-19. *The Lancet*. 2020. [https://doi.org/10.1016/S2352-4642\(20\)30109-7](https://doi.org/10.1016/S2352-4642(20)30109-7)
3. Mukhtar S. Psychological health during the coronavirus disease 2019 pandemic outbreak. *International Journal of Social Psychiatry*. 2020; 66(5), 512–516. <https://doi.org/10.1177/0020764020925835>
4. Akan H, Gurol Y, Izbirak G, Ozdatli S, Yilmaz G, Vitrinel A, Hayran O. Knowledge and attitudes of university students toward pandemic influenza: A cross-sectional study from Turkey. *BMC Public Health*. 2010; 10(1):1–8. <https://doi.org/10.1186/1471-2458-10-413>
5. Mukhtar S. Mental Health and Emotional Impact of COVID-19: Applying Health Belief Model for Medical Staff to General Public of Pakistan. *Brain Behavior, and Immunity*. 2020. <https://doi.org/10.1016/j.bbi.2020.04.012>
6. Mukhtar S. Feminism and gendered impact of COVID-19: Perspective of a counselling psychologist. *Gender, Work & Organization*. 2020; 27(5):827-832. <https://doi.org/10.1111/gwao.12482>
7. 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. <https://doi.org/10.1016/j.ajp.2020.102080>
8. Mukhtar, S. Psychology and politics of COVID-19 misinfodemics: Why and how do people believe in misinfodemics? *International Sociology*. 2021; 36(1):111-123. <https://doi.org/10.1177/0268580920948807>
9. Mukhtar, S. 8 minutes and 46 seconds of 'I Can't Breathe': A call for anti-racist feminist solidarity amid COVID-19. *International Social Work*. 2021; 64(2):255-260. <https://doi.org/10.1177/0020872820967417>
10. Burke RM, Midgley CM, Dratch A, Fenstersheib M, Haupt T, Holshue M. Active monitoring of persons exposed to patients with confirmed COVID-19 United States, January–February 2020. *Morbidity and Mortality Weekly Report*. 2020; 69(9):245–246. <https://doi.org/10.15585/mmwr.mm6909e1externalicon>
11. World Health Organization. Coronavirus disease 2019 (COVID-19) Situation Report – 73. WHO 2020 [https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200402-sitrep-73-covid-19.pdf?sfvrsn=5ae25bc7\\_2](https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200402-sitrep-73-covid-19.pdf?sfvrsn=5ae25bc7_2)
12. World Health Organization. Coronavirus. WHO 2020. [https://www.who.int/healthtopics/coronavirus#tab=tab\\_3](https://www.who.int/healthtopics/coronavirus#tab=tab_3)
13. Mukhtar S, Rana W. COVID-19 and individuals with mental illness in psychiatric facilities. *Psychiatry Research*. 2020; 289:113075. <https://doi.org/10.1016/j.psychres.2020.113075>
14. Hanrahan C. Coronavirus response wins support — but we're less happy with other Aussies' behaviour. ABC News (2020, April 16). <https://www.abc.net.au/news/2020-04-16/coronavirus-numbers-government-support-survey-data/12147292>
15. Ja'ashan M. Perceptions and attitudes towards blended learning for English courses: A case study of students at University of Bisha Mohammed. *English Language Teaching*. 2015; 8(9):40–50
16. Mukhtar S. Mental Health and Psychosocial Aspects of Coronavirus Outbreak in Pakistan: Psychological Intervention for Public Mental Health Crisis. *Asian Journal of Psychiatry*. 2020; 51. <https://doi.org/10.1016/j.ajp.2020.102069>
17. Roy D, Tripathy S, Kar S., Sharma N, Verma S, Kaushal V. Study of knowledge, attitude, anxiety & perceived mental healthcare need in Indian population during COVID-19 Pandemic. *Asian Journal of Psychiatry*. 2020; 51:102083–102087. <https://doi.org/10.1016/j.ajp.2020.102083>

18. Mukhtar S, Mukhtar S, & Rana W. COVID-19 Feminist Framework to Address Public Health Impact of Violence, Abuse, and Trauma in Children, Women, BIPOC, and LGBTQIA+ Community: A Preliminary Observation. *Asia Pacific Journal of Public Health*. 2021; 33(5):645–647. <https://doi.org/10.1177/10105395211014351>
19. Faye O, Boelle PY, Heleze E, Faye O, Loucoubar C, Magassouba N, Soropogui B, Keita S, Gakou T, Bah el, HI, Koivogui L, Sall AA, Cauchemez S. Chains of transmission and control of Ebola virus disease in Conakry, Guinea, in 2014: An observational study. *The Lancet*. 2-15; 15(3):320–326. [https://doi.org/10.1016/S1473-3099\(14\)71075-8](https://doi.org/10.1016/S1473-3099(14)71075-8)
20. Mukhtar S & Mahmood Z. Moderating Role of Perceived Social Support between Perceived Parenting Styles and Relational Aggression in Adolescents. *Journal of Aggression, Maltreatment, and Trauma*. 2018; 27(8):831-845. <https://doi.org/10.1080/10926771.2018.1468842>
21. Khalid I, Khalid T, Qabajah M, Barnard A, Qushmaq I. Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. *Clinical Medicine & Research*. 2016; 14(1):7–14. <https://doi.org/10.3121/cmr.2016.1303>