

# Physical and Psychological Impacts on COVID-19 Hospitalized Patients of 3<sup>rd</sup> Wave

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**Abstract** - Background: COVID shelters and many emergency centers were established as a countermeasure to control this pandemic that hit the world by the end of 2019. Due to unavailability of medical care, along with physical health issues, these patients suffer with mental health related issues. Aims: This study aimed to explore the both, physical and psychological impacts upon the patients diagnosed with COVID-19 and admitted in intensive care units of hospitals of Pakistan during the third wave. Methods: This cross-sectional survey was performed during the peak time of COVID-19 for the duration of two months i.e. April & May 2021. After getting ethical approval from Shifa International Hospital (Ref# 070-021), permission was sorted from public and private hospitals of Pakistan. 183 conscious patients diagnosed with COVID and currently admitted in intensive care units were randomly selected from hospitals of Islamabad and Rawalpindi. Written consent was taken from patients and their caregivers after they were briefed regarding the importance of the study. PHQ-15 was used to assess somatic symptoms related to COVID-19 whereas DASS-21 was used to assess level of depression, anxiety and stress among patients. Results: Of 183 hospitalized patients of COVID-19 in intensive care units, 170 (92.9%) participants showed mild to severe level of somatic symptoms on PHQ-15. Shortness of breath, feeling heart race, back pain, stomach pain, low energy and sleeping difficulties were the most common somatic complaints reported by patients. The statistics of DASS-21 showed that 51 (27.86%) participants had mild to severe level of depression, 74 (40.4%) had mild to profound level of anxiety and 96 (52.45%) reported mild to profound level of stress. Conclusion: This study portrayed a better understanding and confirms the physical and psychological impacts upon hospitalized COVID-19 patients, therefore highlighting the need of both physical and mental health interventions to minimize these impacts.

**Keywords:** anxiety; COVID-19' third wave; depression; pandemic; physical impacts; psychological impacts; somatic symptoms; stress

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## Introduction

Originating with a cluster of different symptoms, COVID pandemic has proved to be the major epidemiological incident of this decade. Firstly originating from Wuhan, China in late 2019 and then spreading throughout the world reaching 235 countries by October 2020 [1]. Keeping in view the devastating effects of this novel virus; World Health Organiza-

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tion declared it a pandemic on March 20, 2020 [2]. So far, 170.7 Million cases and 3.5 Million deaths have been reported worldwide by June 02, 2021.

This pandemic has drastically changed the lifestyle of people and has wreaked havoc in the world. Looking into the history, such widespread outbreaks of infectious and viral diseases such as pneumonia and Ebola virus disease have not only proved to be associated with physical symptoms and illnesses but also with psychological distress and other mental health related concerns. Among other important COVID related concerns, emerging mental health conditions and wellbeing are the tenth most frequent research topic.

Due to unavailability of proper treatment, lack of awareness, increasing number of infected cases and deaths, many patients experienced both physical and psychological sufferings. There have been plenty of reports addressing the psychological impacts of COVID-19 among general population, health care workers, educationists and students, but limited work has been performed with patients suffering with COVID due to number of risks associated with data collection [3-8].

Pakistan ranked second highest among seven middle income countries in terms of mental health impacts due to COVID [3]. Due to an escalating number of diagnosed cases of COVID, and availability of limited resources, people with mild to moderate symptoms were advised to self-quarantine themselves at home, whereas those with severe complaints were allowed to admit in hospitals. This strategy to quarantine patients proved to be significantly effective in controlling viral diseases for decades. The severity of symptoms and isolation period altogether may result in mental health related issues among those patients residing in intensive care units of hospitals.

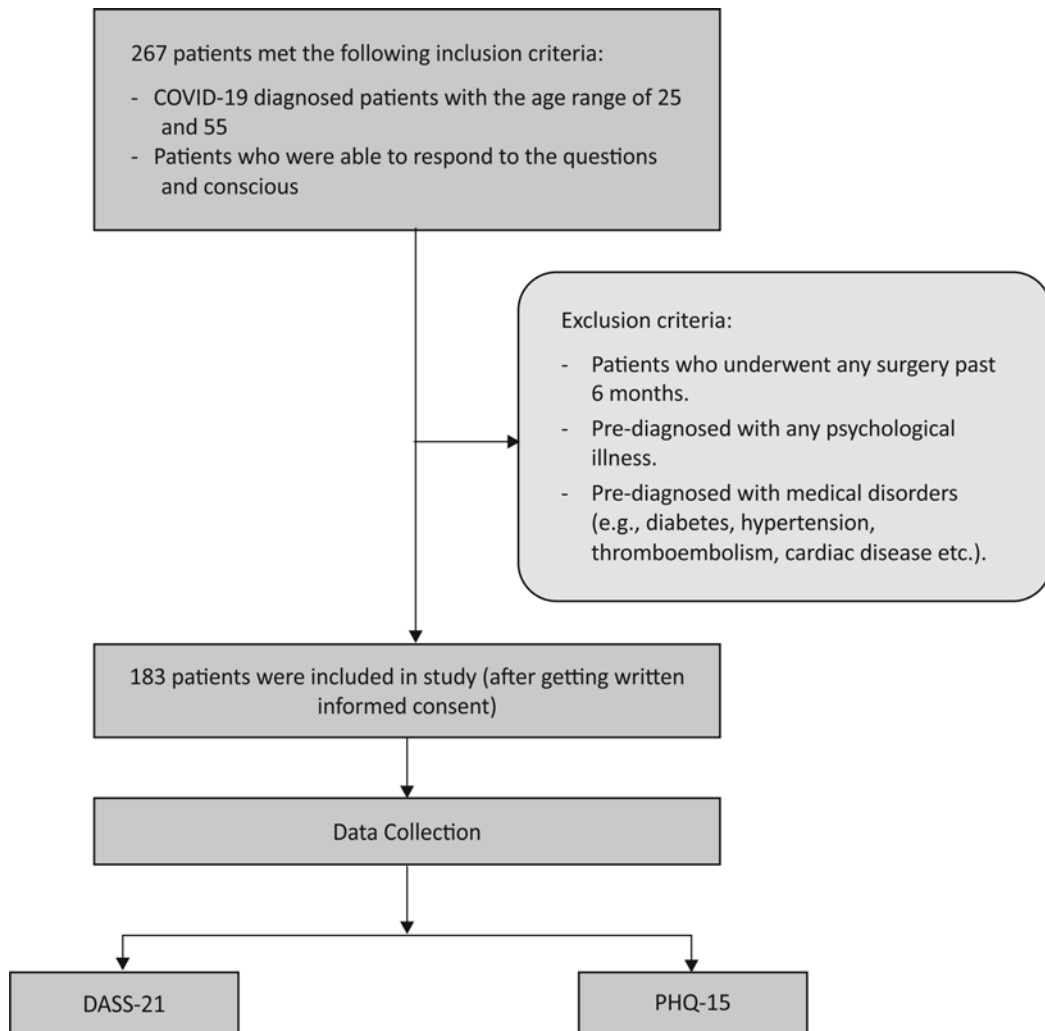
With the increasing number of infected cases and deaths, many patients experienced both physical sufferings and great psychological distress. COVID-19 has globally affected everyone's life. In light of the unprecedented public health crisis of the COVID-19 pan-

demic and overburden of challenging tasks, it is highly important to acknowledge the physical and psychological impacts of this mounting threat on COVID-19 patients.

Keeping in view the physical and psychological impacts of these pandemic, different physiotherapy and mental health interventions, online education, counseling services and e-clinics in developed countries provided their services but minimal work has been done in Low Middle Income Countries including Pakistan in this regard. Also, to assess the impact of these circumstances, much work has been done regarding psychological health and quality of life of physicians, nurses, and other paramedical staff but there is dearth of data regarding its impact on functional, physical and psychological health of COVID-19 patients. The purpose of our study is to assess the physical and psychological impacts upon COVID-19 patients admitted in Hospitals of Islamabad and Rawalpindi. This can also provide guidance related immediate and timely interventions both psychological and physical in management of these patients in Pakistan Institute of Medical Sciences Islamabad and some other private hospitals.

## Subjects and Methods

This Cross-sectional survey was performed during the third wave of COVID-19 in mid-2021 for the duration of 6 months. Research was conducted after getting prior approval from the Institutional Review Board of Shifa International Hospital (Ref # 070-21). Non probability-convenient sampling technique was used to collect data from 183 patients diagnosed with COVID admitted in Intensive Care Units of Islamabad and Rawalpindi, Pakistan. This sample size was calculated through Rao soft sample calculation software with 350 population size that was kept according to the total number of hospitalized patients in both twin cities. Overall, a total of 267 patients were approached in intensive care units of different hospitals who granted permission for data collection. Those patients who were with the age range of 25 to 55 years, and were able to respond and follow simple commands were included in the study after getting their approval for participation in the study. Patients with pre-diagnosis of any psychological or medical illness



**Figure 1.** Flowchart of the study

were not included. 183 patients met the inclusion criteria and voluntarily gave consent for participation in the study. Data collection procedure is shown in Figure 1.

Valid and reliable outcome measures were used to assess COVID-19 impacts on patient's physical and mental health. Patient Health Questionnaire-15 was used to assess somatic symptoms of patients whereas DASS-21 was used to assess the level of depression, anxiety and stress among the participants of the study [9,10]. The Depression, Anxiety and Stress Scale i.e. DASS- 21 consists of three subscales which are de-

signed to assess the mental health related issues. Each of 3 sub-scales comprise of seven items. DASS-21 showed that it has excellent Cronbach's alpha reliability values of 0.81, 0.89 and 0.78 for the subscales of depression, anxiety and stress respectively. Whereas PHQ-15 is a physical health questionnaire used to assess the symptoms related to physical health of patients. It is composed of 15 questions which are used in the assessment and diagnosis of somatoform disorders. The total PHQ-15 score ranges from 0-30 categorized as normal, mild, moderate, profound level. The reliability of PHQ-15 showed that it has good

Cronbach's values reported at 0.83 and had discriminate construct validity.

Patients were made sure that all identifiers including their names, hospital's PCN numbers, or any other information linked to their identity will be confidential. Hence, completed questionnaires were given numerical codes. Strict inclusion criteria were maintained to minimize any sort of biases. The data was then analyzed using IBM-SPSS version 20.

## Results

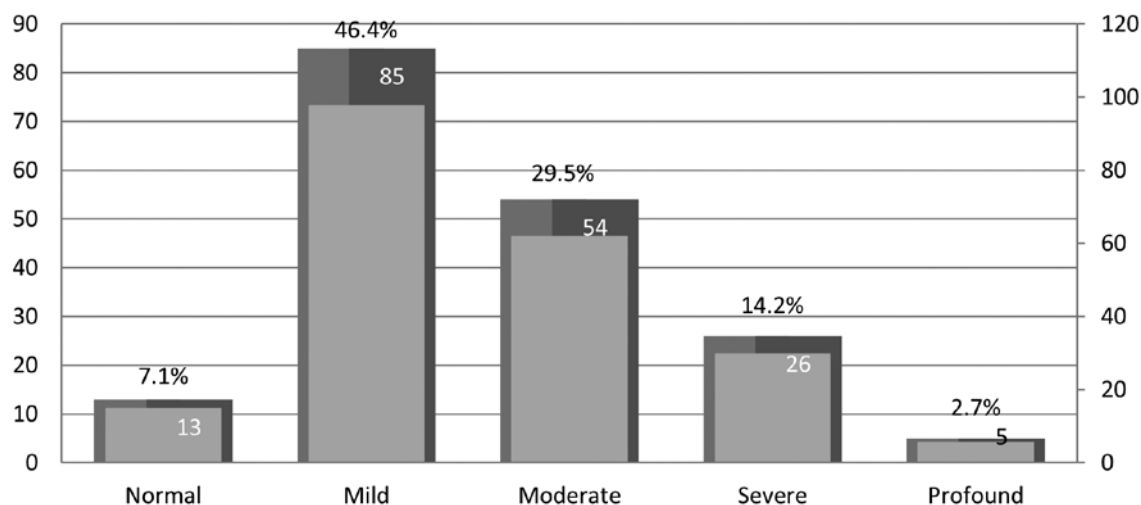
A total of 183 participants out of which, 112 (61.2%) male and 71 (38.8%) female patients diagnosed with COVID and admitted in public and private hospitals of Islamabad and Rawalpindi completed the survey. Descriptive statistics were calculated for socio-demographic variables, physical and psychological symptoms. Data was assessed for normality and no missing values were found in the data. Among many other symptoms (Figure 2), the most frequently reported symptom was shortness of breath that was reported by 86.9% of participants; the second most reported symptom was feeling one's own heart rate i.e. by 72.7% of participants.

Figure 2 shows the frequency of physical symptoms reported by patients due to COVID-19 infection, whereas Figure 3 shows the intensity of these symptoms. It depicts the percentage of participants, who were normal and reported least number of somatic symptoms, those who reported mild, moderate and severe level of physical complaints as assessed through PHQ-15.

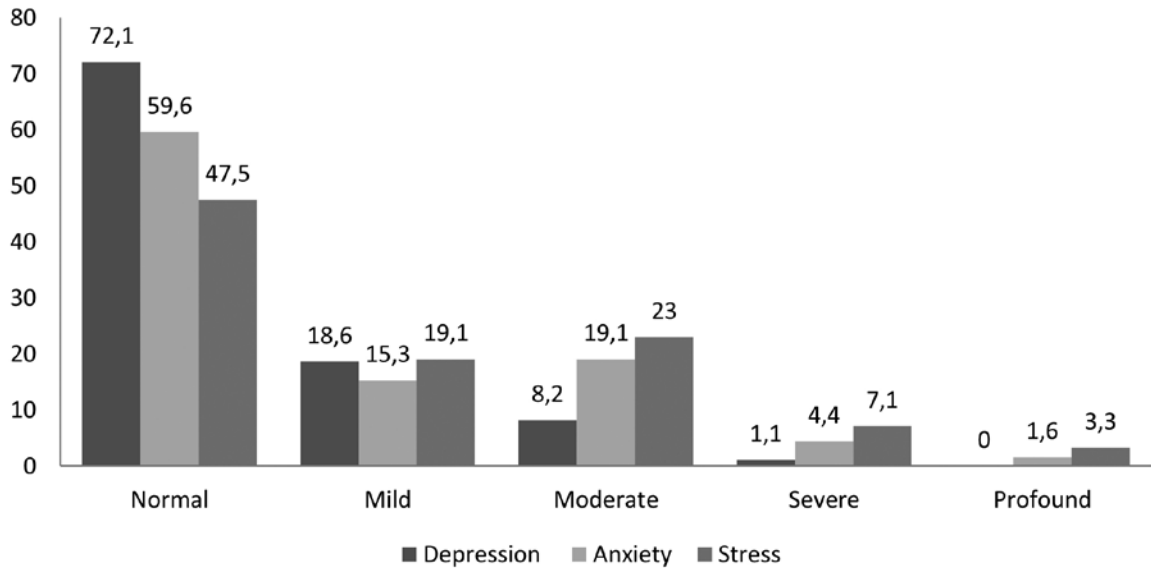
The scores in Figure 3 represent the percentages of psychological symptoms experienced by our study sample. These scores clearly depict the percentage of people who were having normal mental health, those with mild level, moderate, severe and profound level of depression, anxiety and stress.

## Discussion

This study confirms the physical and psychological impacts upon diagnosed COVID-19 patients admitted in the hospitals of Islamabad and Rawalpindi. These results coincide with the findings of previous studies performed on hospitalized patients of COVID [11]. The main findings of this study are based on PHQ-15 and DASS-21 scores; those



**Figure 2.** Frequency of Physical symptoms (PHQ-15)



**Figure 3.** Percentage of depression, anxiety and stress (DASS-21)

were used to assess somatic symptoms and level of depression, anxiety, and stress of COVID hospitalized patients. After getting permission from two public and private hospitals, data was collected during the third wave of COVID from 112 males and 71 females aged between 25 to 55 years.

Participants of our study reported several somatic complaints during hospitalization period after getting diagnosed with study. Assessing these symptoms, shortness of breath, feeling one's heart race, back pain, fatigue, low energy level, back pain, stomach pain, trouble sleeping and insomnia were few of the most common physiological complaints reported by the patients who willingly participated in the study. The findings reported 13 (17.1%) asymptomatic patients, whereas 170 (82.9%) with mild to severe level of symptoms. Majority of the patients reported presence of somatic symptoms after getting diagnosed with COVID.

Due to lack of medical care facilities, poor sanitation, unhealthy diet, and lack of preventive measures, Pakistan stands second in number of deaths in Asia. This caused an unpredictable rise in COVID-19 spread, thus worsening mental health of Pakistani people especially those diagnosed with this disease. In a multi-centered survey, rhinitis, persistent fever, breathing difficulties and cough were found to be the most prevalent physical symptoms and complaints that were significantly associated with bad mental health and fear among general population [3].

The findings of DASS-21 depression indicate that out of 183 participants, 51 (27.86%) participants had mild to severe level of depression. This percentage of prevalence of depression among COVID-19 patients depicts the impact of this pandemic and this disease on the mental health. Similar findings were reported by a study performed to assess the mental status and sleep quality of 317 COVID-19 diagnosed patients admitted in hospital

of Wuhan, China. 18.6% anxiety and 13.4% depression was prevalent among these patients [11].

The results of anxiety sub-scale of DASS-21 concluded that 74 (40.4%) participants were suffering from mild to profound level of anxiety. This high percentage depicts a significant impact of this pandemic upon mental health of the patients, as depicted in another study that was performed in India by Suryavanshi N. and associates. This study summarized high level of depression, and anxiety among health-care workers who worked in India during COVID-19 pandemic [12].

Stress scores of DASS-21 showed the prevalence of 52.45% i.e. 96 patients were suffering from mild to profound level of stress. Another study with similar aims by Tiraya Lerthattasilp and associates on patients in COVID-19 wards Thammasat Field Hospital Thailand. While assessing the impacts on their psychological health, it was found that 22.5% patients were suffering with moderate to profound level of depression [13].

This study was aimed to explore COVID-19 impacts on the patients admitted in the hospitals of Islamabad and Rawalpindi, but due to the peak in cases reported during third wave, it was quite difficult to get permission from hospitals for data collection. Therefore, data was collected from few hospitals from where permission was granted. Also, even after following all precautionary measures and SOPs for data collection, it was quite difficult and risky to approach and brief patients and their caretakers regarding the importance of this study during this crucial time of pandemic. Due to time limitations and critical situation, previous physical and mental illnesses of

the participating patients couldn't be assessed, that could assist in identification of difference in pre and post COVID health status.

Further researches are critically needed to assess the long term impact upon physical health, mental health of recovered patients. Furthermore, development and implementation of effective physical therapy and psychotherapy should be provided to COVID-19 patients that may help them recover fast. Moreover, it is recommended that trials should be conducted in low middle income countries including Pakistan to assess the impact of therapeutic procedures and interventions upon health of COVID-19 diagnosed patients. If anxiety and depression are not addressed through early physical and psychological interventions, the risk of physical complaints, post-traumatic stress disorder and other health implications may increase significantly.

This study concluded that high prevalence of mental and physical health related issues was reported among hospitalized COVID patients. Furthermore prevalence of somatic complaints, depression, anxiety and stress was found among hospitalized patients during the third wave of COVID-19 outbreak.

### Acknowledgements

None.

### Conflict of interest

None to declare.

### Funding Sources

None.

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## Fizički i psihološki utjecaji na COVID-19 hospitalizirane pacijente trećeg vala

**Sažetak** - Pozadina: COVID ustanove i brojni hitni centri osnovani su kao protumjera za suzbijanje ove pandemije koja se pojavila krajem 2019. Zbog nedostupnosti medicinske skrbi, uz probleme s tjelesnim zdravljem, ovi pacijenti pate od psihičkih problema. Ciljevi: Ova studija imala je za cilj istražiti fizičke i psihičke utjecaje na pacijente s dijagnozom COVID-19 i koji su primljeni u jedinice intenzivne njege u bolnicama u Pakistanu tijekom trećeg vala pandemije. Metode: Ovo istraživanje poprečnog presjeka provedeno je tijekom vrhunca pandemije COVID-19 u trajanju od dva mjeseca, tj. travnja i svibnja 2021. Nakon dobivanja etičkog odobrenja od Shifa International Hospital (Ref # 070-021), dopuštenje je razvrstano po javnim i privatnim bolnicama Pakistana. Iz bolnica u Islamabadu i Rawalpindiju nasumično su odabrana 183 pacijenta pri svijesti s dijagnozom COVID-a koji su trenutno primljeni na odjele intenzivne njege. Pismeni pristanak uzet je od pacijenata i njihovih skrbnika nakon što su bili informirani o važnosti studije. Uпитnik PHQ-15 je korišten za procjenu somatskih simptoma povezanih s COVID-19, dok je DASS-21 upitnik korišten za procjenu razine depresije, tjeskobe i stresa među pacijentima. Rezultati: Od 183 hospitalizirana pacijenta s COVID-19 u jedinicama intenzivne njege, 170 (92,9%) sudionika pokazalo je blagu do tešku razinu somatskih simptoma na PHQ-15 upitniku. Kratkoća daha, osjećaj srčanog udara, bol u leđima, bol u trbuhu, slaba energija i poteškoće sa spavanjem bile su najčešće somatske tegobe koje su prijavili pacijenti. Statistička obrada DASS-21 upitnika pokazala je da je 51 (27,9%) sudionik imao blagu do tešku razinu depresije, 74 (40,4%) je imalo blagu do duboku razinu anksioznosti, a 96 (52,5%) je prijavilo blagu do duboku razinu stresa. Zaključak: Ova studija je prikazala bolje razumijevanje i potvrđuje fizičke i psihološke utjecaje na hospitalizirane pacijente s COVID-19, naglašavajući stoga potrebu za intervencijama na fizičkom i mentalnom zdravlju kako bi se ti utjecaji minimizirali.

**Ključne riječi:** COVID-19 treći val; pandemija; fizički utjecaji; psihološki utjecaji; tjelesni simptomi

