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# Assessment of burnout in healthcare professionals amid COVID-19

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## Abstract

According to WHO latest by April 2nd 2020, it has now become a global threat and also it has become a serious issue in Pakistan with increasing number of active cases every day. Physicians, consultants, paramedics and other staff working in hospitals are at risk due to the emergence of COVID-19 which also is responsible for severe burnout which effects job performance, job satisfaction, interpersonal relationships, and vulnerability to illnesses. This research aims at finding the burnout in healthcare professionals of Karachi, Pakistan due to the current situation of COV-19 pandemic. We carried out a cross-sectional study in the tertiary care hospitals of Karachi, Pakistan from Feb'2020 – Apr' 2020 in which the questionnaire based on Malsch burnout inventory were distributed amongst the healthcare professionals including doctors and paramedics, working in the departments of emergency, COVID special units and others. A scoring system of 1-4 was applied (strongly disagree-strongly agree). The results showed that highest burnout was faced by healthcare professionals in the category of depersonalization and personal accomplishment amid Covid-19 while the association between the burnout and the demographic factors mentioned was also found to be significant. The challenges faced by the healthcare professionals because this pandemic showed lack of presence of personal protective equipment and fear to spread infection to be as the biggest challenges. The study concluded that the current pandemic situation of COVID-19 has particularly associated with the burnout and stress amongst our health care professionals who are working on the frontline.

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## Introduction

Burnout effects job performance, job satisfaction, interpersonal relationships, and vulnerability to illnesses (Chemali *et al.*, 2019). Physicians and consultants working in the specialties at the front lines of care such as emergency medicine, general internal medicine, neurology, and family medicine) are among the highest risk of burnout. According to a study More than half of the doctors and paramedics in United States are suffering substantial symptoms of burnout (Dyrbye *et al.*, 2017). Similar finding are seen in United Kingdom, A study conducted in 2017 showed the burnout prevalence in general practitioners and consultants to be 54% (Imo, 2017). Healthcare professionals include doctors, nurses and paramedics, are taking important life changing decisions every moment and that is why their mental and physical wellbeing is an outright obligation (Baruah *et al.*, 2019). Various studies have been conducted throughout the world to gauge the burnout in health care professionals. one such study is conducted by Ehsan Zarei who showed the results of burnout in workers of primary health care center in to be 52.9% (Zarei *et al.*, 2019).

The emergence of the COVID-19 has been the hot cake since December 2019 and its consequences has led to fears, uncertainties, and anxiety among individuals worldwide and is by far the largest outbreak of atypical pneumonia since the severe acute respiratory syndrome (SARS) outbreak in 2003 (Ahorsu *et al.*). At this time, there are no specific vaccines or treatments for COVID-19 (Watkins, 2020). According to WHO latest by April 2nd 2020, it has now become a global threat with globally 896,450 confirmed cases and 45,526 deaths involving 220 countries. NIH Pakistan has reported the national tally of COVID 19 cases in Pakistan to 2,291 and total deaths 31 hence it has become a serious issue in Pakistan like rest of the world.(National Institute of Health Pakistan).

As far as pandemic is concerned, several studies have been conducted to evaluate burnout in health professionals during the outbreak of MERS (middle east respiratory syndrome and SARS (severe acute respiratory syndrome) (Kim and Choi, 2016, Maunder *et al.*, 2006). Currently, there is no known information on the psychological impact and mental health of the healthcare professionals dealing with COVID-19 pandemic. This is especially relevant with the ambiguity surrounding an outbreak of such supreme extent. As far as the research on COV-19 is concerned, most of the studies focuses on identifying the epidemiology and clinical characteristics of infected patients (Wang *et al.*, 2020). To the best of our knowledge no study till date has been conducted to assess the burn out in healthcare professionals who are working day and night to fight against COV-19. This research aims at finding the burnout in healthcare professionals of Karachi, Pakistan due to the current situation of COV-19 pandemic.

## Materials and methods

### *Study Setting*

We carried out a cross-sectional study from February' 2020 to April'2020, at tertiary care hospitals of Karachi.

### *Inclusion and Exclusion Criteria*

The health care workers including doctors, nurses and paramedical staff working full time in Covid-19 special units of the hospital are included our study. While All the other professional Health Care Workers who were not employed by the Covid-19 special units of the hospital and any other staff members including IT department, management and guards were excluded our study.

### *Sample Size*

The sample size was calculated through RAOSOFT software keeping the population size of 2000 and confidence level of 95%(n=323) and the sampling done through convenience sampling technique.

### *Consent*

The participants were informed about the purpose of the study and consent was taken prior to data collection. Ethical approval for the study was taken from the institutional ethics committee. The participants were asked to fill a questionnaire.

### *Questionnaire Design*

The questionnaire comprised of demographic data and a validated Maslach Burnout Inventory (MBI).

It is used to measure burnout specifically in people working in healthcare. MBI constitutes of 22 items covering three elements of burnout: emotional exhaustion EE, depersonalization DP and personal accomplishment PA. Emotional exhaustion refers to a state of feeling emotionally drained and worn out and indicates negative attitude towards work. The cut of values for EE is 0-17 for low level, 18-29 for medium level and more than 29 for high level burnout. Depersonalization is characterized by loss of interest in job and colleagues. The cut off values for depersonalization is 0-5 for low level, 6-11 for medium level and more than 12 for high level burnout. Personal accomplishment is a dimension of burn out which refers to associated with feeling of competence, high self-efficacy and sense of accomplishment reduced personal accomplishment indicates burnout. The cut off values for personal accomplishment includes 0-33 as high level burnout, 34-39 as medium level and more than 39 as low level burnout. Thus, it is self-evident that high scores in section a and b and low scores in section c are associated with high burnout(Baruah *et al.*, 2019). A scoring system of 1-4 was applied, (strongly disagree-strongly agree).

*Statistical Analysis*

Data analysis was conducted on SPSS Version 21. Mean and standard deviation was calculated for numerical data. For categorical data we took out frequency and percentages. P value of less than 0.05 was taken as significant.

**Results**

The maximum number of respondents i.e. n=217 (66.0%) were among age group of 25-39 years of age and only n=9 (2.7%) were in 40-59. All participants were Pakistan nationals of which n=155 (47.4%) were males and n=167 (51.7%) were females. There was no big difference in percentages of singles and married n=135 (43.5%) and (n=183) 59% and participants who were divorced were only n=2 (0.6%) Most participants n=190 (57.8%) had higher education and only n=35 (10.6%) had secondary level education. Of 329 participants n=271 (82.4%) were doctors and remaining n=58 (17.6%) comprised of paramedics. Respondents employed in private work setup were n=162 (49.2%) and those employed in public work set up were n=167 (50.8%). Amid corona virus outbreak duty hours of participants were varying, n=176 (53.5%) were working for 10-12 hours while n=81 (24.6%) were working 12-24 hrs and n=33 (10%) of hcp working for more than 24 hrs. Hence the time they get to relax and sleep also vary between 6-8 hours n=233 (70.8%) and 4-6 hrs. n=71 (21.6%). Majority n-324 (98.5%) were allowed to meet family, however maximum family hours varied between 6-8 hrs, n=153 (46.5) and 4-6 hours, n=129 (39.2). The n=274 (83.3%) of hcp used caffeine while n=51(15.5%) participants used cigarettes and n=4 (1.2%) take medicines to relieve stress.

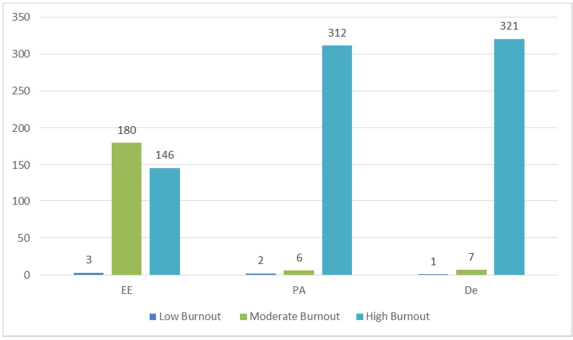


**Fig. 1.** Burnout for all three categories, EE (Emotional Exhaustion), PA (Personal Accomplishment) and DE (Depersonalization).

As fig. 1 shows, our healthcare professionals are emotionally exhausted and displayed the characteristics of moderate n=181(55%) and high burnout n=146 (44.3%). The n=312 (94.8%) participants presented with individualities of high burnout in the factor of personal accomplishment while n=321 (97.5%) of them also exhibited high burnout when asked about aspects of depersonalization during these tough times of COVID-19.

According to the current scenario of COVID-19 we have asked our respondents about the biggest challenge in coping with the present situation and n=274 (83.3%) were worried about non availability of personal protective equipment, n=203 (61.7%) were in stress because of little or no information on corona virus transmission and treatment, while the biggest fear our healthcare professionals are going through

with is, concern to spread infection to their family and friends n=295 (89.9%) and the consequences covid 19 might cause on their health. And lastly we also compared burnout amongst the individual health professionals with the demographic data provided and the results are shown in the table below:

**Table 1.** Comparison of burnout with the demographical data

| | Low Burnout | | Moderate Burnout | | High Burnout | | p-value |
|---|---|---|---|---|---|---|---|
| | n | % | n | | N | % | |
| Age Group | | | | | | | |
| 18-24 | 0 | 0.0% | 13 | 13.0% | 87 | 87.0% | .677 |
| 25-39 | 4 | 1.8% | 23 | 10.6% | 190 | 87.6% | |
| 40-59 | 0 | 0.0% | 0 | 0.0% | 9 | 100% | |
| >60 | 0 | 0.0% | 0 | 0.0% | 3 | 100% | |
| Gender | | | | | | | |
| Males | 4 | 2.5% | 15 | 9.4% | 140 | 88.1% | .86 |
| Females | 0 | 0.0% | 21 | 12.4% | 149 | 87.6% | |
| | | | | | | | |
| Marital status | | | | | | | |
| Single | 1 | 0.7% | 14 | 9.8% | 128 | 89.5% | .864 |
| Married | 3 | 1.6% | 22 | 12.0% | 159 | 86.4% | |
| Divorced | 0 | 0.0% | 0 | 0.0% | 2 | 100% | |
| Working hours | | | | | | | |
| 8hrs | 0 | 0.0% | 5 | 12.8% | 34 | 87.2% | .713 |
| 10-12hrs | 3 | 1.7% | 19 | 10.8% | 154 | 87.5% | |
| 12-24hrs | 0 | 0.0% | 10 | 12.3% | 71 | 87.7% | |
| >24hrs | 1 | 3.0% | 2 | 6.1% | 30 | 90.9% | |
| Educational level | | | | | | | |
| Matric | 0 | 0.0% | 5 | 38.5% | 8 | 61.5% | .016 |
| Secondary | 0 | 0.0% | 2 | 5.7% | 33 | 94.3% | |
| University | 2 | 2.2% | 5 | 5.5% | 84 | 92.3% | |
| Higher | 2 | 1.1% | 24 | 12.6% | 164 | 86.3% | |
| Designation | | | | | | | |
| Doctor | 4 | 1.5% | 29 | 10.7% | 238 | 87.8% | .626 |
| Paramedical staff | 0 | 0.0% | 7 | 12.1% | 51 | 87.9% | |
| Work setup | | | | | | | |
| Private | 2 | 1.2% | 22 | 13.6% | 138 | 85.2% | .319 |
| Public | 2 | 1.2% | 14 | 8.4% | 151 | 90.4% | |
| Sleeping hours | | | | | | | |
| 8-10hr | 0 | 0.0% | 0 | 0.0% | 4 | 100% | .013 |
| 6-8hr | 2 | 0.9% | 28 | 12.0% | 203 | 87.1% | |
| 4-6hr | 0 | 0.0% | 8 | 11.3% | 63 | 88.7% | |
| <4hr | 2 | 9.5% | 0 | 0.0% | 19 | 90.5% | |
| Meet_family | | | | | | | |
| Yes | 4 | 1.2% | 36 | 11.1% | 284 | 87.7% | .704 |
| No | 0 | 0.0% | 0 | 0.0% | 5 | 100% | |
| Family hours | | | | | | | |
| 12-16hr | 0 | 0.0% | 0 | 0.0% | 12 | 100% | .077 |
| 6-8hr | 2 | 1.3% | 25 | 16.3% | 126 | 82.4% | |
| 4-6hr | 1 | 0.8% | 7 | 5.4% | 121 | 93.8% | |
| <4hr | 1 | 2.9% | 4 | 11.4% | 30 | 85.7% | |
| Stress reliever | | | | | | | |
| Caffeine | 4 | 1.5% | 23 | 8.4% | 247 | 90.1% | .000 |
| Cigarette | 0 | 0.0% | 10 | 19.6% | 41 | 80.4% | |
| Medicine | 0 | 0.0% | 3 | 75% | 1 | 25% | |

**Discussion**

This study was much needed to find out burnout in healthcare professional due to coronavirus disease 2019 (COVID-19) pandemic which has become one of the major health crises for this generation as it has affected the people across the globe (Shanafelt *et al.*, 2020).

Our healthcare professionals who are fighting with this pandemic on the frontline have been under constant stress which is a great influencing factor for job related burnout. As table 1 shows more than 70% of our doctors and paramedics both in private or public setup are working for about 10-24 hrs. to cope

up with this pandemic. Long duty hours have always been key factor in generating stress, our results are in agreement to various studies including a study conducted in Saudi Arabia that also concluded that the majority of residents work 60 or more hours per week, and there was a very high degree of burnout amongst residents(Hameed *et al.*, 2018). Physician burnout is a significant problem in the medical profession, and work overload is the main contributor to it fatigue, stress, and accentuate resiliency(Patel *et al.*, 2018). Few health care workers chose not to meet their family (1.5%) and most of them were allowed to meet their family (98.5%) since COVID 19 is a community spread infection due to which the risk of infection is evenly distributed across the population hence health care workers feel isolated by their family because of their hospital work (40.1%) and this isolation also leads to stress and anxiety (Kumar, 2016).

Fig. 1 shows burnout in all three categories i.e emotional exhaustion, personal accomplishment and depersonalization due to COVID-19 outbreak. As far as we know no study has reported burnout in healthcare professionals during the times of COVID-19. A study took place in Korea that assessed the burnout in nurses in the times of MERS-COV and resulted in that there is significant correlation between stress and burnout specially emotional exhaustion and depersonalization (Kim *et al.*). The flaws of health care systems all over the world are now mainly highlighted. Even the highly developed countries with an extraordinary smoothly working health care systems are unable to meet with the demands of controlling the situation in this pandemic including the number of patients in need of treatment, primarily, intensive care with endotracheal intubation and mechanical ventilation (Chughtai and Khan, 2020). The challenges health professionals are facing in this pandemic has also played a great role in increasing anxiety and stress and the results suggest that most of the respondents think that little or no information about the COVID-19 is an enormous issue to deal with (Nagesh and Chakraborty, 2020). The unavoidable stress, fear and anxiety is reported to be insightful in healthcare professionals and other front line workers, due to the fact that very limited knowledge is available regarding COVID-19 hence, the emotional and physical surge has been increased (Harapan *et al.*, 2020). Another study pointed out the stress and fear in surgical residents in tertiary care hospital of Pakistan (Osama *et al.*, 2020). A questionnaire based study was conducted to evaluate the knowledge of healthcare professionals about COVID- 19 which suggests that there were significant knowledge gaps present in health care professionals and it is critically to improve the knowledge and perceptions of HCWs (Bhagavathula *et al.*, 2020). We need to cope with this challenge by providing informational sessions on how to deal with this pandemic and all latest researches should be shared. One such study was conducted which showed that all healthcare professionals, especially nurses who were constantly pressured to work in highly infected areas of the hospital were given adequate support, clinical supervision and briefing and debriefing sessions to alleviate potential burnout among nurses and other healthcare workers (Lopez *et al.*, 2004).

Another challenge is availability of personal protective equipments Medical personnel protection is of particular importance because of the risk of infecting other members of medical teams, including not only physicians, nurses or paramedics, but also other support personnel necessary to maintain the continuity of care for patients (Smereka and Szarpak, 2020). Based on the observations of other countries' pandemic outbreak, the maximum standing should be given to infection control preparedness in Pakistan's healthcare system (Mukhtar, 2020)The results also showed that 89.9% of respondents are horrified due to the spread of this infection to their family. A study conducted in India suggested that The health care professionals who are dealing with confirmed/ suspected COVID19 patients are being quarantined and isolated and the rest of them are separated from their family concerning the fear of transmitting the disease to their own family members (Li *et al.*, 2020).

One of The major contributing factor for causing burnout in health care professionals is long working shifts also our frontline workers are not on high risk themselves but also their families are equally exposed (Sasangohar *et al.*, 2020).

There is lack of preparedness especially in Pakistan which is further highlighted due to Rapid spread of covid19. The public hospitals were dealing the situation in a traditional way which was something under required (Sarwar *et al.*, 2020).

We conducted this study to evaluate the burnout amongst health care workers at the peak time of COVID-19 in Pakistan which is a strong point of this study, also that we modified the questionnaire (MBI) to find out the challenges which are health care workers were going through due to the pandemic. The limitations of the study includes that this study could have been done on a large scale to see a bigger picture.

**Conclusion**

The study concluded that the current pandemic situation of COVID-19 has particularly associated with the burnout and stress amongst our health care professionals who are working on the frontline which has shown to be associated with various factors including demographics, emotional exhaustion, personal accomplishment, depersonalization and challenges to cope up with COVID-19 as mentioned in the study.

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**Declaration of conflict of interest**

There was no conflict of interest.

**Patients consent form**

Not applicable.

**Authors contribution**

The concept of this study, data analysis, drafting, and finalizing of the results were done by Dr. Nisha Zahid and Marium Syed. The article was critically reviewed and finally approved by Dr. Syed Hasan Danish. While the data collection and analysis based work was performed with the help of Dr. Sharmake Harsi.

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