

Research Article

Immediate Psychological Impact of COVID 19 Pandemic on Mental Health of Pediatric Healthcare Workers

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Abstract

Background: COVID-19 pandemic has been effecting the world since December, 2019. Front line healthcare professionals faced increased stress level while dealing with overload of patients. Hence it triggered feelings of loneliness, despair and physical mental fatigue.

Objective: To determine the immediate psychological impact of COVID-19 pandemic on mental health of pediatric healthcare workers by using Depression Anxiety Stress scoring scale, DASS-21 scale.

Methods: This cross-sectional online survey was conducted from 1st July to 30th November 2020 in the department of Pediatric Medicine Unit II, King Edward Medical University/Mayo Hospital, Lahore. A 21-item Depression Anxiety Stress scoring scale was circulated online among Healthcare workers of Teaching hospitals of Lahore. These included Pediatric Specialists, General Physicians, Postgraduate Trainees in Paeds Medicine, House Officers in Paeds Medicine and Pediatric Nurses. 150 Healthcare workers (HCWs) participated. Responses were analyzed with SPSS V.26

Results: Out of 150 healthcare workers, 101(67.3%) were falling in the range of 20-30 years, 76(50.7%) were females, 81(54%) were singles, maximum 59(39.3%) were postgraduate trainees and majority 65(43.4%) had <2 years working experience. Overall, 121(80.7%) HCWs had depression, 116(77.3%) had anxiety and 80(50.3%) had stress in some form. Regarding marital status, married showed significant association more with anxiety 59(85%), ($p=0.007$) and stress 26(37.7%), ($p=0.001$). Similarly, postgraduate trainees were significantly affected, with 54(91.5%) showing anxiety ($p=0.005$), while 23(39%) showed severe to extremely severe forms of stress ($p=0.021$).

Conclusion: HCWs, esp. married or postgraduate trainees, are more prone to be affected by Depression, anxiety and stress during pandemics.

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Introduction:

Since December 2019, the world has been facing an outbreak of a novel infectious disease known as Coronavirus (COVID-19), that is now a pandemic since March, 2020¹. As till 6th June 2020, it has caused 6852322 cases worldwide with 98943 cases and approx 2000 deaths in Pakistan only². Pakistan is facing a peak time with approx 60 deaths/day. Its spread and lethality is proving to be higher than the previous epidemics in the world³.

Facing this large scale infectious threat, people are under increased psychological pressure. Data from previous epidemics i.e. SARS in 2003 and H1N1 influenza in 2009 illustrate that community suffered considerable fear and panic, resulting in a significant psychological impact⁴. This seems to be same, rather more with COVID-19 pandemic as well.

The general population is not the only one to suffer the psychological distress. Healthcare professionals (HCPs), who work on the frontline to quell the outbreak, are also significantly affected⁴.

In addition to high levels of anxiety, stress and depression being observed in people⁵, healthcare professionals also report feelings of extreme vulnerability, uncertainty and threat to life⁴.

Data shows that during the COVID-19 outbreak, healthcare professionals have confronted with challenges not faced before. These include decisions to be made fast, deciding whether to shut down departments/OTs when a patient/staff tests positive, pressure to act timely and successfully diagnose, isolate and treat esp. amid intense public and media scrutiny⁶. Moreover, due to increased risk of exposure to the virus, HCPs fear they may contract the infection themselves, or may bring it home and pass it on to family members, friends and colleagues⁷. They also face increased stress levels when dealing with patients unwilling to adhere to safety instructions or critically ill patients in the context of limited resources. The use of Personal Protection Equipment (PPE) for long periods may cause physical discomfort or difficulty breathing⁸. The height of helplessness and despair is seen when one of the loved ones dies due to COVID-19. Dealing with a pediatric patient, esp in presence of anxious parents/ aggressive attendants is another problem often faced by pediatric HCPs.

All these factors can result in different levels of psychological pressure, which may trigger feelings of loneliness, helplessness, or a series of dysphoric emotional states such as stress, irritability, physical/mental fatigue and despair^{7,9}.

In light of this increased psychological pressure on frontline healthcare staff, the purpose of this survey is to promptly adopt measures for psychological support and intervention to protect their mental health. This is very important as healthcare workers (HCWs) are the main pillars of health system and their efficient working would depend on their overall health. Most of them already reluctant to disclose their problems and facing this pandemic at its peak now, need to have their mental health screened and monitored regularly. When needed, psychiatric treatment including counseling, should be provided earlier.

Methods:

This was an online cross-sectional study conducted at

King Edward Medical University/Mayo hosp, Lahore from 1st July, 2020 to 30th November, 2020. As COVID-19 is a pandemic these days, open online invitation to all participants was given to be included in the study. Consecutive sampling technique was applied. As a result, 150 HCWs participated in the study. HCWs (pediatric specialists, PG trainees, House officers, nurses and GPs) of Lahore teaching hospitals were included. Any non-medical staff and HCWs of other specialities were excluded. A questionnaire containing DASS-21 scoring scale (Depression Anxiety Stress Scale)⁵ comprising 21 items was distributed online among the Healthcare workers. After receiving the responses, data was entered and analyzed using SPSS version 26. Qualitative data like age, gender, designation, marital status and job satisfaction was analyzed using frequencies and percentages. Quantitative data was analyzed by mean and standard deviation. The responses from the participants were compared using chi-square test. A p-value of ≤ 0.05 was considered significant.

Results:

Out of 150 healthcare workers, 101(67.3%) were 20-30 years old, 36(24%) were 30-40 years and 13(8.7%) were >40 years of age. Females comprised 76(50.7%), while 74(49.3%) were males. Majority 81(54%) were single. Regarding designation, 59(39.3%) were postgraduate

Table 1: Characteristics of Participant HCWS (N=150)

Variable	Category	N(%)
Age	20-30years	101(67.3)
	31-40years	36(24)
	>40years	13(8.7)
Gender	Male	74(49.3)
	Female	76(50.7)
Marital Status	Married	69(46)
	Single	81(54)
Designation	Specialist	33(22)
	PGT	59(39.3)
	GP	8(5.3)
	Nurse	13(8.7)
Working years	HO	37(24.7)
	<2	65(43.3)
	2-5	44(29.3)
	6-10	22(14.7)
Family living	>10	19(12.7)
	Joint	80(53.3)
	Nuclear	70(46.7)

trainees followed by 37(24.7%) house officers, 33(22%) specialists, 13(8.7%) nurses and 8(5.3%) general physicians. Of all these, maximum 65(43.4%) had <2 years, 44(29.3%) had 2-5 years, 22(14.7%) had 6-10 years and 19(12.7%) had >10 years of working experience. Regarding type of living, 80(53.3%) lived in joint family setting (Table 1).

Regarding job satisfaction, majority 108(72%) did not ever think of resigning from job because of COVID-19 pandemic. When asked for getting worried about self/family member being infected by COVID-19, maximum 145(96.7%) agreed. Almost comparable number agreed/disagreed regarding family members/friends

Table 2: Job characteristics of HCWS- (n=150)

Have you ever thought of resigning because of COVID-19 pandemic?	
Agree	25(16.7)
Disagree	108(72)
Unsure	17(11.3)
Have you worried about the threat to life once infected?	
Agree	107(71.3)
Disagree	30(20)
Unsure	13(8.7)
Are you worried about yourself/family member being infected by COVID-19?	
Agree	145(96.7)
Disagree	5(3.3)
Do you feel that family members/friends have avoided contact with you because of your work?	
Agree	66(44)
Disagree	69(46)
Unsure	15(10)
Are you satisfied with the full coverage of your department with protective measures for nosocomial infections?	
Agree	43(28.7)
Disagree	91(60.7)
Unsure	16(10.7)
Are you satisfied with your workshift arrangement?	
Agree	103(68.7)
Disagree	32(21.3)
Unsure	15(10)
Are you satisfied with logistic support/accommodation arranged by the hospital?	
Agree	37(24.7)
Disagree	96(64)
Unsure	17(11.3)

avoiding contact with them because of their work, i.e. 66(44%) and 69(46%) respectively. Regarding provision of their department with protective measures for infections, 91(60.7%) were not satisfied. Similarly 96(64%) were also not satisfied with logistical support/accommodation arranged by the hospital. But 103(68.7%) showed satisfaction with their work shift arrangement (Table 2).

A validated DASS-21 scoring scale was used which had a Cronbach Alpha value of 0.932, indicating its excellent reliability.

Out of the three domains of depression, anxiety and stress, overall 121(80.7%) HCWs had anxiety, 116(77.3%) had depression while 80(53.3%) had stress. In the depression subscale, 18(12%) suffered from mild, 41(27.3%) from moderate, 21(14%) from severe

Table 3: Frequencies of DASS (n=150)

Severity	Depression N(%)	Anxiety N(%)	Stress N(%)
Normal	34(22.7)	29(19.3)	70(46.7)
Mild	18(12)	10(6.7)	24(16)
Moderate	41(27.3)	13(8.7)	14(9.3)
Severe	21(14)	24(16)	21(14)
Extremely severe	36(24)	74(49.3)	21(14)

Table 4: Association of marital status with DASS(n=150)

Marital status	Severity	Married n(%)	Single n(%)	Total	Asy. Sig
Depression	Normal	10(14.5)	24(29.6)	34(22.7)	.060
	Mild	8(11.6)	10(12.3)	18(12)	
	Moderate	17(24.6)	24(29.6)	41(27.3)	
	Severe	14(20.3)	7(8.6)	21(14)	
	Ext. Severe	20(29)	16(19.8)	36(24)	
	TOTAL	69	81	150(100)	
Anxiety	Normal	10(14.5)	19(23.5)	29(19.3)	.007
	Mild	1(1.4)	9(11.1)	10(6.7)	
	Moderate	3(4.3)	10(12.3)	13(8.7)	
	Severe	15(21.7)	9(11.1)	24(16)	
	Ext. Severe	40(58)	34(42)	74(49.3)	
	TOTAL	69	81	150(100)	
Stress	Normal	27(39.1)	43(53.1)	70(46.7)	.001
	Mild	14(20.3)	10(12.3)	24(16)	
	Moderate	6(8.7)	8(9.9)	14(9.3)	
	Severe	5(7.2)	16(19.8)	21(14)	
	Ext. Severe	17(24.6)	4(4.9)	21(14)	
	TOTAL	69	81	150(100)	

and 36(24%) from extremely severe depression. In the anxiety subscale, 10(6.7%) reported mild, 13(8.7%) moderate, 24(16%) severe and 74(49.3%) extremely severe symptoms. In the stress subscale, 24(16%) had mild, 14(9.3%) moderate, 21(14%) severe and 21(14%) extremely severe stress.

No significant association was observed between any of the DASS-21 scores and participants' age, gender and years of working.

Regarding association of marital status with DASS-21 scores, married 59(85%) were significantly more affected by anxiety than the singles 62(65%)-(p=0.007). Out of these, 55(79.7%) suffered from severe-extremely severe anxiety. Similarly 26(37.7%) married showed some kind of stress symptoms, with 22(31.8%) falling in the severe-extremely severe categories, while 23(28.4%) singles were overall affected (p=0.001) (Table 4).

suffered from severe-extremely severe symptoms (p=0.005). Similarly, PGTs were seen to suffer significantly from stress as 23(39%) showed severe-extremely severe symptoms (p=0.021) (Table 5).

Discussion:

COVID-19 was declared pandemic in March 2020. Since then, many changes overtook our country, esp. affecting our healthcare system. The declaration of a pandemic, lockdowns, looking after COVID-19 patients, suffering from fear of acquiring/transmitting the infection to the loved ones^{10,11}, are some of the various fears affecting HCWs lifestyle. Studies show that doctors have high levels of stress even under normal circumstances. The pandemic posed an additional pressure on them, leading to psychological distress¹².

As seen in this study, HCWs were affected by anxiety and depression, followed by stress, supported by many

Table 5: Association of designation with DASS (n=150)

Designation	Severity	Specialist n(%)	PGT n(%)	GP	Nurse	HO	Total	Asymp. Sig
Depression	Normal	7(21.2)	6(10.2)	2(25)	6(46.2)	13(35.1)	34(22.7)	.066
	Mild	5(15.2)	6(10.2)	0(0)	1(7.7)	6(16.2)	18(12)	
	Moderate	7(21.2)	17(28.8)	1(12.5)	4(30.8)	12(32.4)	41(27.3)	
	Severe	6(18.2)	9(15.3)	2(25)	1(7.7)	3(8.1)	21(14)	
	Ext.							
	Severe	8(24.2)	21(35.6)	3(37.5)	1(7.7)	3(8.1)	36(24)	
	TOTAL	33	59	8	13	37	150(100)	
Anxiety	Normal	3(9.1)	5(8.5)	2(25)	6(46.2)	13(35.1)	29(19.3)	.005
	Mild	4(12.1)	1(1.7)	0(0)	2(15.4)	3(8.1)	10(6.7)	
	Moderate	3(9.1)	5(8.5)	0(0)	2(15.4)	3(8.1)	13(8.7)	
	Severe	9(27.3)	9(15.3)	1(12.5)	0(0)	5(13.5)	24(16)	
	Ext.							
	Severe	14(42.4)	39(66.1)	5(62.5)	3(23.1)	13(35.1)	74(49.3)	
	TOTAL	33	59	8	13	37	150(100)	
Stress	Normal	17(51.5)	20(33.9)	2(25)	10(76.9)	21(56.8)	70(46.7)	.021
	Mild	6(18.2)	9(15.3)	2(25)	1(7.7)	6(16.2)	24(16)	
	Moderate	1(3)	7(11.9)	1(12.5)	0(0)	5(13.5)	14(9.3)	
	Severe	1(3)	11(18.6)	3(37.5)	1(7.7)	5(13.5)	21(14)	
	Ext.							
	Severe	8(24.2)	12(20.3)	0(0)	1(7.7)	0(0)	21(14)	
	TOTAL	33	59	8	13	37	150(100)	

Regarding designation, postgraduate trainees showed to be the affected by all 3 domains but significant association was seen with anxiety and stress. 54(91.5%) suffered from some variety of anxiety, with 48(81.4%)

other studies^{13,14,15}. Multiple risk factors underlie these symptoms. Prolonged working hours, working in high risk atmosphere, lack of resources esp. PPEs, improper infection control, and a diagnosed family member were

some of the factors identified by Shaukat N, et al¹⁰. Moreover, confinement and social isolation, inability to visit family/friends, not being able to go out for recreation may exacerbate the impact of current stressors¹⁶. Tsamakidis K, et al also showed that as frontline warriors, HCWs have to decide fast, act timely, diagnose successfully, deal with patients unwilling to cooperate or critically ill patients, use PPEs for long hours which may cause breathing difficulty^{8,17} and be in quarantine when infected which itself is a mental trauma⁹.

Significant association of married status with anxiety and stress found in this study, was against many studies where singles were more affected, but supported by some other studies¹⁸. These explain the cause as married people, most being parents, have a change in their normal routine during the pandemic. Instead of going to offices and children going to schools, now both tasks have to be managed from home, posing a diverse role. Staying together the whole day often leads to frustration and conflicts between partners¹⁸. Moreover, HCWs are most fearful regarding transmission of infection to their kids¹⁹.

Regarding designation, mental health of postgraduate trainees was found to be significantly affected, the most by anxiety and stress. This also may have many reasons. Due to stressful postgraduate training, they are already vulnerable to psychological issues^{20,21}. The need to study and work simultaneously make them more susceptible to psychological problems. They are the ones working on frontline²², work for long hours, are sleep-deprived,^{20,21} have direct contact with COVID-19 patients, at times even face shortage of medical equipment^{10,14} daily face deaths of infected patients.

Although not significant, but our study showed prevalence of DASS to be more in 20-30 years old HCWs, females, with less working experience and living in joint family setting. Job satisfaction is also necessary to combat DASS esp. during such a critical pandemic period.

As fate of current pandemic is yet not known, HCWs being frontline warriors would definitely be at risk of experiencing emotional breakdown, leading to possible collapse of health system. To avoid this and to maintain their mental health, we need timely intervention in the form of preventive strategies. These include easing their duties with adequate resources and workplace env-

ironment, develop shift systems and breaks from duties, provide incentives, early psychological assessment and counseling along with motivational sessions as soon as possible. A psychotherapy center-only for HCWs-must be made functional in every hospital. Providing accurate and up-to-date health information and avoidance of rumors, esp. by general public and social media can also play an important role in this aspect.

Although our study also showed considerable evidence that COVID-19 pandemic has significant impact on mental health of HCWs, but there were certain limitations. First, the sample size was small, as most of HCWs were busy fighting the pandemic and came across multiple ongoing online surveys, so it may not represent the general population characteristics. Second, this was an observational online survey, depending on subjective feelings of participants which may have been under/over-reported. Clinical interviews would have further elaborated the symptoms.

Conclusion:

HCWs esp. married and postgraduate trainees, who are already under some stress, are more prone to DAS during epidemics.

Ethical Approval: Given

Conflict of Interest: The authors declare no conflict of interest.

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