

BMJ Open Understanding the mental health impact and needs of public healthcare professionals during COVID-19 in Pakistan : a qualitative study

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ABSTRACT

Objectives A dearth of qualitative studies constrains in-depth understanding of health service providers' perspectives and experiences regarding the impact of COVID-19 on their mental health. This study explored the mental health impact and needs of public sector healthcare workers during COVID-19 who working in secondary-level and tertiary-level healthcare settings of Pakistan.

Design An exploratory qualitative study.

Setting Twenty-five secondary-level and eight tertiary-level public hospitals of Sindh and Punjab provinces of Pakistan.

Participants In-depth interviews were conducted with 16 health service providers and 40 administrative personnel. Study data were analysed on NVivo V.11 using the conventional content analysis technique.

Results The study identified three overarching themes: (1) mental health impact of COVID-19 on health service providers that included the fear of acquiring the infection and transmitting it to their family members, fear of social isolation and stigma, anxiety related to the uncertainty of COVID-19, nervousness due to media exaggeration and stress associated with excessive workload; (2) mental health needs of health service providers involved in the COVID-19 crisis and available support from the healthcare system, including the expression of the need for counselling services and safe working conditions, the need for paid rest periods, and the need for appreciation and motivation to work in the pandemic; and (3) suggestions to address mental health needs of healthcare workers, including provision of specialised mental healthcare/ services, formal training of health managers on managing mental health needs of health facility staff, and assessment and addressing of these needs of the health workforce.

Conclusion The study emphasises the need to strengthen health system preparedness for recognising and addressing the needs of healthcare professionals. At the system level, there is a need for a specialised unit to provide mental health services and better communication strategies. At the staff level, continuous motivation and appreciation should be given to healthcare professionals either through monetary incentives or formal acknowledgement of their performance.

STRENGTHS AND LIMITATIONS OF THIS STUDY

- ⇒ This study provides an in-depth exploration of experiences of healthcare professionals regarding the mental health impact of COVID-19, as well as their mental health needs and suggestions to address these needs in a pandemic crisis.
- ⇒ Unlike previous urban-focused studies, the participants in this study were invited across 22 urban and rural districts in the two most populous provinces of Pakistan.
- ⇒ One key limitation of the study was that the interviews were conducted by phone owing to restricted mobility during the COVID-19 pandemic, which may have introduced some risk of bias as the interviewers did not have the opportunity to build rapport as in face-to-face interviews.

INTRODUCTION

Worldwide, health service providers are under insurmountable psychological pressures as they are expected to deal with a number of issues that arise due to the COVID-19 situation.¹ First, due to the increased clinical workload associated with COVID-19 cases, health service providers face increasingly long work hours, often with limited resources and weak infrastructure.² Second, they face physical discomfort associated with donning and doffing of personal protective equipment (PPE), or the unavailability of it, which is essential to keep them safe from exposure to the virus.³ Third, health service providers feel unprepared to deal with a new and unfamiliar task since the evidence-based clinical treatments for COVID-19 continue to evolve.³ Finally, there is a very valid fear of autoinoculation and the risk of transmitting the virus to family members.^{4,5} Unsurprisingly, all these factors take a toll on the mental health of healthcare professionals (HCPs), and result in various psychiatric issues including fear,⁶



anxiety,¹ depression,¹ burnout,⁷ trauma⁸ and insomnia.⁹ Evidence shows that mental health implications for health workers who are involved in the provision of healthcare during epidemics and pandemics are long-lasting.^{10 11}

While quantitative studies have significantly outnumbered qualitative investigations^{13 68 12} in terms of assessing the magnitude of mental health problems among HCPs resulting from COVID-19, they are limited in providing an in-depth understanding of HCPs' perspectives and experiences regarding the impact of COVID-19 on their mental health. Moreover, most qualitative investigations explored the general experiences of HCPs during the COVID-19 pandemic,^{13 14} whereas very few have specifically focused on their mental health experiences and these are mainly from high-income countries.¹² A qualitative study from England concluded that patients with COVID-19 brought a significant emotional toll, and strained relationships between immediate frontline staff and their families. At the beginning of the pandemic, staff were driven by adrenalin and optimism; but over time this dissipated to be replaced by exhaustion, numbness and dreadful expectation of a 'second wave'.¹⁵ Another qualitative study from Pakistan¹⁶ presented a thorough understanding of how the frontline emergency healthcare workers (HCWs) are dealing with the COVID-19 pandemic, their stress-coping strategies or protective factors, and challenges while dealing with patients with COVID-19. These studies are limited in providing evidence on health systems' preparedness to respond to the mental health needs of HCPs. Earlier evidence during the SARS epidemic showed that system-level interventions were effective in reducing health service providers' symptoms of anxiety and depression.^{1-4 11}

By and large, there is not only a dearth of qualitative studies on mental health impact of COVID-19 on HCPs from low/middle-income countries but there are also gaps in existing literature.¹³ For example, there is a lack of information about the psychosocial and mental health needs of HCPs and how well the health system has responded to those needs.¹² Furthermore, these qualitative studies had a predominant focus on hospitals situated in urban settlements or metropolitan cities, while their sample did not have adequate representation from rural settings. Also, the HCPs included in many quantitative studies were mainly doctors and nurses; few studies have gathered perspectives of other HCPs—such as health administrators.¹²

To the best of our knowledge, there is a paucity of qualitative evidence to understand the mental health needs of HCPs and the health system response, which is essential to develop context-specific mental health interventions. This study is the first to explore the mental health impact of COVID-19 as well as the mental health needs of health service providers in public healthcare settings of Pakistan from the perspective of health managers and health service providers including doctors and nurses.

Our study aims to answer the following research questions:

- ▶ What is the perceived mental health impact of the COVID-19 pandemic on the performance of health service providers in secondary and tertiary care settings in Pakistan?
- ▶ What are the health service providers' mental health needs working amid the COVID-19 pandemic, and how well the health system is responding to them?
- ▶ What are the recommendations by the health service providers to address their mental health needs?

METHODS

Country context

Pakistan has a population of over 225 million inhabitants.¹⁷ The first COVID-19 case was identified in February 2020, and since then a total number of confirmed cases that exceed 1.5 million along with 30 574 deaths have been registered (until 29 August 2022).¹⁸ The country has experienced five waves—each with a different variant including omicron, more recently.¹⁸ With a focus on vulnerable groups of HCPs and elderly (65+ years) people, the country embarked on a nationwide vaccine campaign for COVID-19.¹⁸

Healthcare in Pakistan is delivered through a three-tiered health system. Secondary-level healthcare facilities concern with provision of technical, therapeutic and diagnostic services. Specialist consultation and hospital admissions fall into this category. The availability of specialised services vary from facility to facility across districts depending on the catchment population and their service needs and demands.¹⁹ It includes Tehsil Headquarters (THQs) and District Headquarters (DHQs) Hospitals. Tertiary healthcare hospitals are for more specialised inpatient care supported by availability of required resources. With few exceptions, these are also affiliated with the medical teaching institutions for graduates and postgraduates.²⁰ The government of Pakistan has taken several measures to combat this deadly pneumonia virus²¹ but it leaves a lot to be desired.²² The health system of Pakistan is weak,²³ with critical shortage of health workforce which is not prepared to sustain a major surge in COVID-19 cases.²⁴

Recent quantitative studies show the considerable impact of COVID-19 on the psychological health of HCPs.^{25 26} Generally in Pakistan, mental illnesses are stigmatised and widely perceived to have supernatural causes. The psychiatrist-to-population ratio is about 1 psychiatrist to 0.5–1 million people²⁷; this—combined with limited task-sharing interventions—results in a huge treatment gap in the country. The economic burden of mental illnesses in Pakistan is US\$4.2 billion annually.²⁸

Design, setting and participants

The Consolidated criteria for Reporting Qualitative research checklist has been used for designing this qualitative study²⁹ (see online supplemental file 1).

This research employed an exploratory qualitative research design using semistructured interviews and a criterion purposive sampling approach. Our study was

conducted at secondary-level and tertiary-level public sector hospitals of the two most populous (Sindh and Punjab) provinces of Pakistan. A total of 8 teaching hospitals, 8 DHQs, and 25 THQs were randomly selected from Sindh and Punjab provinces. The study was conducted in close collaboration with provincial health departments.

The data collection methods for this research included in-depth interviews (IDIs) with health service providers (doctors, nurses), head of department (HoD) and medical superintendent (MS). In terms of participants' involvement in the care of patients with COVID-19, health managers including MS and HoD were indirectly involved in the management of patients with COVID-19; however, health service providers including doctors and nurses were directly involved in the care of patients with COVID-19. For secondary-level health facilities, we contacted the MS who was invited to participate in the study. Moreover, he/she was further asked to nominate service providers from their respective health facilities who may or may not be involved in the provision of care to patients with COVID-19. Similarly, for teaching hospitals, we contacted the administrative head who identified a focal person on his/her behalf for further coordination. Similar request was made to the focal person for identification of department heads and service providers. Only nine participants refused to participate mainly due to their busy schedule and lack of interest.

Eligibility criteria

Health managers and health service providers employed in public sector hospitals of Sindh and Punjab provinces and were dealing directly or indirectly with patients with COVID-19 were eligible to participate in the study. Health service providers and hospital managers either belonging to private sector hospitals or from provinces other than Sindh and Punjab were excluded. Non-clinical staff such as janitors and technicians were also excluded from the study.

Data collection

Adapting to the COVID-19 situation, a total of 56 (Sindh: 34; Punjab: 22) semistructured telephonic IDIs were conducted individually in the local language (Urdu), by trained female data collectors who had a background in sociology, anthropology and psychology. The interviews are conducted at the Aga Khan University Hospital under close supervision of research investigators. Keynotes were also taken by data collectors during the interviews. It was ensured that the participant is comfortable during the interview and no one is sitting near to them whose presence could possibly influence his/her responses. To ensure data quality, a few initial interviews were conducted by WH (PhD scholar–health system), ASF (PhD scholar–public health) and NA (BS psychology) in the presence of trained data collectors. The IDIs were conducted until data saturation was achieved.³⁰ Data collection and data analysis were conducted iteratively to determine the point of data saturation.^{31 32} All interviews were completed in

the first interaction. Consistent with Creswell and Poth's³¹ guidelines on interviewing, all IDIs lasted approximately between 45 and 60 min. The interviews were audio-recorded on tablets with consent from study participants, which were later transcribed in the English language by a transcriptionist. The data collection took place between August and October 2020. The transcripts were not returned to the participant due to their busy schedule in the hospitals.

A semistructured interview guide was designed for IDIs through an extensive literature review and consultative approach seeking expert opinions. This guide was developed to interview all research participants. The guide includes five major themes: (a) mental health impact of COVID-19 on health service providers; (b) mental health needs of health service providers involved in the COVID-19 crisis; (c) support mechanisms available to address mental health needs of health service providers; (d) challenges in addressing mental health needs of health service providers; (e) recommendations to address mental health needs of health service providers. A free flow of information was encouraged, using the participants' verbatim account of the conversation to understand their perception of mental health needs during the COVID-19 pandemic.

The interview guide was used flexibly to allow participants to construct their accounts on their own terms. The guide was pilot tested with a non-study sample which shares the same characteristics as the study sample.³¹ The pilot testing provided evidence-based direction to improve the interview guide questions³² (see online supplemental file 2).

Data analysis

All study data including notes, recordings and transcriptions were uploaded into the NVivo V.11.0 software for data analysis.³³ The analysis looked at convergent and divergent lines of inquiry from the two main study groups, that is, health managers and health service providers (doctors and nurses). All qualitative data included were analysed using conventional content analysis.^{34 35} Two independent researchers (ASF and NA) read each transcript from beginning to end, and coded text that appeared to describe the mental health impact of COVID-19 as well as the mental health needs of health service providers in public healthcare settings of Pakistan. After open coding of initial few transcripts, independent researchers met to discuss and decide on the preliminary codes (codebook). Researchers then coded the remaining transcripts (and recoded the original ones) using the codebook and added new codes when they encountered data that did not fit into an existing code. Once all transcripts had been coded, researchers examined all data within a particular code. Some codes were combined during this process, whereas others were split into subcategories. The discrepancies in coding were resolved through



a discussion with a senior researcher. Throughout the analysis, the researcher made reflective notes (memos) to document important learning from the data.³⁶ ASF and NA independently performed coding to ensure that interpretations are coherent, plausible and grounded in the study data.³² Please see online supplemental file 3 to see an example of content analysis.

Trustworthiness of the study

Of the five markers suggested by Tracy³⁷ and Lincoln *et al*³⁸ to ensure trustworthiness and methodological rigour, we used validity and credibility and reliability/dependability. To ensure credibility, the study triangulated data via two basic types of triangulation: data source triangulation (exploring insights of different groups—hospital managers and health service providers) and investigator triangulation (use of multiple researchers in analysis phase—ASF and NA).³¹ In addition, the primary researcher maintained a reflexive journal during all stages of the research to recognise and acknowledge biases during the research process. For example, reflexivity was used to develop the interview guides and modify it based on the inputs from other investigators and after the initial interviews, and analyse the data in different groups to tell a story about how the health system responded to deal with the mental health needs of health service professionals during the COVID-19 pandemic.

Patient and public involvement

We sought inputs from target audience through pretesting of interview guides to ensure comprehension of the questions. Furthermore, in consultation with provincial health departments, we selected districts where COVID-19 cases were high. The focal person in each selected district was oriented about the study who connected our team with those in charge in the health facility to avoid any miscommunication. Lastly, they were also advised on the dissemination of research findings—that is, they specifically emphasised sharing it through research briefs to reach a wider audience in the country.

RESULTS

A total of 56 semistructured IDIs were conducted to explore the mental health needs of health service providers amidst the COVID-19 pandemic in Pakistan. Of 56 IDIs, 16 IDIs were conducted with health service providers, and 40 IDIs were conducted with health managers. All the participants (n=56) who were approached by the study team agreed to participate. The demographic information for all the study participants is illustrated in [table 1](#).

Based on the directed content analysis, three overarching themes were identified: (1) mental health impact of COVID-19 on health service providers;

Table 1 Characteristics of study participants

Characteristics of study participants	n (%)
Gender (n=56)	
Female	9 (16.1)
Male	47 (83.9)
Designation (n=56)	
Hospital managers	40 (71.4)
Health service providers	16 (28.5)
Facility type (n=56)	
Secondary healthcare hospitals	37 (66.1)
Tertiary healthcare hospitals	19 (33.9)
Age (n=48)	
Mean	46.6
Median	47
SD	10.6
Experience (n=53)	
Mean	15.4
Median	15
SD	9.5

(2) mental health needs of health service providers involved in the COVID-19 crisis and available support from the health system; and (3) suggestions to address mental health needs of health service providers. These themes and their categories are presented in [table 2](#).

Mental health impact of COVID-19 on health service providers

Fear of infection, isolation and stigma

The interviews with hospital managers and health service providers revealed that all health service providers felt fearful of acquiring the COVID-19 infection and transmitting the infection to their family members. A hospital manager mentioned that health service providers are particularly concerned about their parents and children who are vulnerable and might get infected.

They (HCPs) were afraid for their families that our parents are old and if we carry coronavirus from here then we might not get them infected. Even if we don't show any symptoms, we would get them infected or we would get our children infected. So this fear was also prevailing. (Hospital Manager, Punjab)

Health service providers were fearful that if they did acquire the infection, they would have to isolate themselves from their families. Many workers could not afford to isolate themselves in the event they tested positive for COVID-19.

They used to say that if the report comes back positive, then how they will stay at home because their homes are small. (Hospital Manager, Sindh)

Immediately after that, there was fear of isolation, like if you put yourself into isolation who will look

Table 2 Themes and subthemes

Themes	Subthemes
Theme 1: mental health impact of COVID-19 on healthcare professionals	1.1 Fear of infection, isolation and stigma 1.2 Stress due to poor availability of personal protective equipment 1.3 Anxiety due to uncertainty of COVID-19 1.4 Anxiety and nervousness due to media exaggeration 1.5 Excessive workload
Theme 2: mental health needs of the health workforce involved in the COVID-19 crisis and available support from the health system	2.1 Need to provide counselling services and safe working conditions 2.2 Need for paid rest periods, timely payment of workers' salaries and incentives 2.3 Need of appreciation and motivation to work in the pandemic
Theme 3: suggestions to address the mental health needs of healthcare professionals	3.1 Establish mental health services to address the mental needs of health workers 3.2 Conduct formal training of health managers in managing mental health needs 3.3 Assess and address mental needs of the health workforce

after your family and your kids. (Hospital Manager, Punjab)

Both groups of respondents highlighted that few health service providers resigned from their jobs since their families were getting infected because of them. In particular, female health service providers had higher pressure on them from their families to leave their jobs. While some providers refused to work in COVID-19 wards, others threatened health managers to commit suicide, if they were posted there. Health managers verbalised that a lot of the health service providers posted in COVID-19 wards revealed the fear of being isolated and stigmatised.

Health workers were hospital-bound and were afraid of living alone and being cut off from their families. They also felt the stigma from the people around them. (Hospital Manager, Sindh)

Stress due to poor availability of PPE

A major concern among the health service providers was the lack of protective gear available to them. Thus, treating COVID-19-positive or suspected cases without PPE was escalating their fear of getting infected. They felt that they had been sent to fight a war without weapons.

Firstly, the PPEs we were using, we had to use them twice or thrice... this was our main issue. We had to wear the mask for two to three days even one week continuously. (Health Service Provider, Punjab)

On the other hand, health managers revealed that some health service providers labelled them as being insensitive and unaware of the problems faced by workers due to a lack of available PPE. However, managers themselves were helpless due to PPE's lack of availability in the market and ended up buying masks and other protective equipment for the staff themselves, but this protective gear was not up to the mark.

That time if anyone didn't get PPE they (health service providers) would get hyper but we provided PPEs

at our facility. We would provide requisite equipment soon so we didn't have to face so much trouble. (Hospital Manager, Punjab)

Anxiety due to uncertainty of COVID-19

Health service providers reported feeling extremely anxious working with patients with COVID-19. Owing to the novelty and unfamiliarity of the virus, along with workers being inadequately equipped with the required knowledge about the disease, they were uncertain about the consequences. Health service providers were also having trouble identifying cases of COVID-19 since there were both symptomatic and asymptomatic cases. They were not clear about the mode of transmission of the virus.

One can call it anxiety, you can see it, and they were under a depressive state. All healthcare workers were. From doctors to nursing staff, paramedics, our sweepers, all our workers were going through depression. (Health Service Provider, Sindh)

Some hospital managers had contrasting views about the difficulties faced by their staff while working during the pandemic. They claimed that health service providers were not stressed while working during the COVID-19 pandemic and that none of them came to the managers to express their concerns.

I don't think their mental health was affected, I don't think so, and there was stress only in the beginning when they were not aware of the atmosphere. (Hospital Manager, Sindh)

No there was no pressure on them, we were doing many meetings, we were explaining it to them, that there's no issue, this time has come we will solve it Insha'Allah, we will be successful, there wasn't an issue like this in our staff, they were definitely cooperating with us, that's why there was no stress or any problem like that. (Hospital Manager, Sindh)

Anxiety and nervousness due to media exaggeration

Both groups of respondents reported that the media has a strong role in mounting anxiety and distress among HCWs. The media was seen to exaggerate the magnitude of the situation and there was a bombardment of information. News regarding deaths of workers due to COVID-19 was also creating panic among the majority of the HCWs.

But this novel coronavirus made hype through digital media as no one knew what it was as initially people were stressed. (Hospital Manager, Sindh)

False information was seen to circulate about the negative consequences for people testing positive for COVID-19, which was creating a lot of distress among HCWs currently working in COVID-19 wards. In addition, news related to the long-term complications of COVID-19 increased nervousness among HCWs.

If you take my personal opinion, the hype created regarding this is too much, that has spread too much tension. That has bothered people a lot about what will happen, God forbid if somebody has corona then he will be taken away or this will happen or that will happen, etc or because of me, my children will suffer. (Health Service Provider, Punjab)

Excessive workload

Both groups of respondents mentioned that health service providers felt strained and exhausted because of the clinical workload. Due to the shortage of health workforce, the existing pool of health service providers had to bear the burden of extra clinical work. Their duty hours increased along with the number of shifts they had to do per week, which resulted in increased psychological distress among health service providers.

So far, no one told me that their mental health has been affected... yes, some people have said that they are depressed... they are feeling tired and have motion sickness due to extra working hours. (Health Manager, Punjab)

The COVID-19 outbreak among health service providers led to further staff shortages and increased mental pressure among health service providers. Both groups of respondents mentioned that even after returning from sick leave, health service providers were not performing at their best. Some of them seem to become weak and some of them would faint. In addition, some workers' tests were negative for the COVID-19 infection, but they still had cough symptoms which would make their coworkers anxious. Hence, they also had to be given leave.

As the work load increased, so did the pressure on the HCWs and their efficiency began to decrease. (Health Manager, Sindh)

Both groups of respondents mentioned that their commute time to the hospital also significantly increased due to the unavailability of public transport during the

lockdown, which further increased the psychological burden among health service providers.

Our doctors faced a lot of transport issues but we tried our best to support them. Few of our staff were punctual initially, but some of them were not coming at all due to fear of COVID-19. Their wages are less so we reduced the duration of their duties and counselled them a lot after which they started coming to work. They come from far off areas so they should be given space here at the hospital so that they can perform their duties easily. (Health Manager, Sindh)

Psychological needs of the health workforce involved in the COVID-19 crisis and available support from the health system

Need to provide counselling services and safe working conditions

Health service providers and health managers highlighted the need for counselling services for health service providers working under pressure to provide care to patients with COVID-19. Health service providers mentioned the desire to receive one-to-one counselling sessions from mental health professionals to reduce the stress and anxiety they were experiencing because of working during the COVID-19 pandemic.

All hospitals should at least provide one-to-one... counselling sessions... to reduce staff anxiety and stress. (Health Service Provider, Sindh, male)

Since no proper counselling services from mental health professionals were available, informal counselling to health service providers was provided by hospital managers. Although the managers were trying to support their staff, they lacked formal training in providing counselling. They motivated them via reinforcing health providers' professional and moral obligations but it did not prove fruitful for most of the workers.

Whatever knowledge I had regarding the disease and its spread, and I also told them that we must serve humanity, and death is inevitable and I did whatever I could, regarding the moral values, whatever I could make them understand, some of them understood and most of them didn't. (Hospital Manager, Sindh)

I told them with a passion that the death Allah has written, if we die on this job, they will be martyred. (Hospital Manager, Punjab)

Health managers from few facilities reported that the government had arranged webinars for health service providers to help them manage psychological stress. However, the effectiveness of this training was quite low because many health workers had duties due to which they were unable to attend or sit through training.

In addition, health service providers highlighted the need of working in a safe and secure working environment. They further mentioned that the lack of safety was largely attributed to the inadequate supply of protective equipment. To make up for the lack of PPE, health service

providers resorted to using the same protective gear they had repeatedly used for multiple days.

In many places, we have seen that doctors and paramedical staff were affected and all this is due to the lack of what was needed, for example, the lack of hand sanitizers and masks. (Hospital Manager, Sindh)

Need for paid rest periods, timely payment of workers' salaries and incentives

Health service providers also highlighted the need for extra rest periods so that they could get enough time to relax from the exhaustive routine and then come back to work. A common strategy employed by the health managers was to give short leave to the health service providers most affected by the COVID-19 stress. This leave helped the staff in regaining their mental and physical strength to work.

They (health service providers) used to say we will do work for 15 days and then require 15 days for holidays, we will relax during that time, I said ok I will give that to you. (Hospital Manager, Sindh)

In addition, the majority of health service providers and health managers reported that the lack of additional allowance for staff directly dealing with patients with COVID-19 was a demotivating factor especially for paramedical staff.

The poor paramedical staff who are the first ones to interact with the patients get paid very less. The government did not do anything for them because the staff used to complain that we are getting the same salaries while having maximum exposure to COVID-19. (Health Service Provider, Punjab)

Health service providers also wanted to be given monetary incentives because working during the pandemic meant that their lives were at stake. This would also help to increase their motivation to work during such difficult conditions.

They should be given incentive because they are keeping their life on risk. (Health Service Provider, Sindh)

Need for appreciation and motivation to work in the pandemic

Hospital managers and health service providers reported that workers needed appreciation for all the hard work they were doing. Moreover, providing appreciation would, in turn, lead to the workers becoming motivated to continue their efforts. Health service providers were putting their lives at stake while working in such difficult conditions without adequate resources, hence their efforts should be commended.

Then they (health managers) should arrange programs in which they appreciate and motivate their employees and provide them proper guidance then

it will have major positive effects on mental health. (Health Service Provider, Punjab)

It was also suggested that the staff should be given certificates to appreciate the work they were doing and to hold regular meetings with them to see work progress and understand their needs. Health service providers mentioned that motivating sessions are also needed to boost morale of the workers who are working in such difficult conditions.

I told my hospital director that we need a psychologist. I also highlighted that our human resource team should be given appreciation certificates other than monetary incentives which might boost their motivation to work. Meetings should also be conducted with them to ask them about their work and what else they need since this is also lacking currently. (Hospital Manager, Sindh)

Suggestions to address mental health needs of HCPs

Establish mental health services to address the mental health needs of health workers

Both groups of respondents stressed that there needed to be an increase in the budget allocated to the health sector to establish mental health services for health service providers working during the COVID-19 pandemic. More funds and resources would lead to the betterment of HCWs. Hiring mental health professionals including psychologists and psychiatrists to support health service providers psychologically was strongly recommended and emphasised repeatedly by health managers.

With regard to the roles of provincial governments in improving the mental health of HCPs, there was a need for the implementation of formal programmes addressing mental health. The government was also advised to arrange seminars on mental health for health service providers alongside launching a mobile application for providing relevant information on the topic.

There should be seminars and sessions and the Punjab government should launch an app regarding this so that we get information from it regarding mental and physical health and keep on updating it. This will improve the situation. (Health Service Provider, Punjab)

Hospital managers were also of the view that government officials should visit hospitals and have discussions with all levels of health service providers to understand their experiences and needs. This would enable the government to formulate effective strategies in dealing with problems faced by health service providers. Some health service providers complained that their health managers were not bothered if their staff were facing any issues.

Nobody bothers to discuss any issue faced by workers. They only give orders to perform their duties. Our hospital managers, they don't have any concerns

if workers are having any problems or not. (Health Service Provider, Sindh)

Sorting logistical issues such as providing transportation facilities for health service providers to and from quarantine centres was also stressed upon.

Conduct formal training of health managers in managing mental health needs

Since hospital managers were directly overseeing the health service providers and had the most interaction with them, their formal training in providing basic counselling to the staff was deemed necessary. Health service providers wanted managers to hold daily meetings with them where they could discuss the difficulties they were facing while caring for COVID-19-positive patients.

The administrator of the hospital should talk about it from every doctor. He should do meeting with them to see if they face any mental pressure or not and if he has so the problem then he should sort out his problem. (Health Service Provider, Sindh)

Some health service providers also remarked that hospital managers should be more approachable so that the staff feel comfortable in sharing their concerns with them.

If employees are guided properly in monthly or weekly meetings, their issues are being heard whatever they are. There should be less difference of job between an employee and MS or head of the department so that he can go and discuss his problems with him, so many of problems can be solved. (Health Service Provider, Punjab)

Assess and address mental health needs of the health workforce

Another recommendation for the future was for the government and health managers to plan all the measures the health system would need to take in the event of such a crisis. They should have observed the situation in countries such as China where the outbreak first began and started thinking of strategies to get a better grip of the impending problems.

We don't know if this pandemic will subside or not. God Forbid if this second waves comes and traffic of patients increases, then what will we do? This way we will get depressed, so proper training should definitely be given, mental health workers should come, go to the institution and guide the HCWs. (Health Manager, Sindh)

Health service providers also suggested that keeping in mind the difficult conditions they were eventually going to have to work in, there should have been sessions that would mentally prepare them for these difficult conditions.

When you send a doctor in the COVID-19 ward, there should have been a week-long training with a

psychologist, to explain them the situation, what will be their duties, the government has selected you, for this task, they should have been prepared and there is nothing to worry about, the mortality rate is low, and most people recover. (Health Service Provider, Sindh)

DISCUSSION

The large-scale unprecedented public health catastrophe, in the form of COVID-19, placed the frontline HCPs, who are directly involved with all aspects of care of patients with COVID-19, at risk of developing psychological distress and other mental health symptoms.³⁹ Our study provided an in-depth investigation into the mental health impact of COVID-19 on HCPs and mental health needs of different cadres (health service providers and administrators) in public health sector settings.

We documented an adverse perceived mental health impact experienced by health service providers while working during the pandemic as revealed in other studies from other countries.^{12 40} The health service providers expressed several explanations for psychological stress including the fear of acquiring the infection and transmitting it to their family members, fear of social isolation and stigma, anxiety related to the uncertainty of COVID-19, nervousness due to media exaggeration and stress associated with excessive workload. Evidence shows that exaggeration by the media tends to negatively affect the mental health of HCPs.^{41 42} Similarly, lack of knowledge about COVID-19 infection is likely to increase anxiety/depression among physicians⁴³ and inadequate precautionary measures in the workplace cause fear and anxiety among HCPs.⁴⁴ Furthermore, overburdening due to high intensity of care and increased volume of clinical services has been associated with work-related stress, burnout and post-traumatic stress disorder, which in turn negatively affect job performance and quality of services.^{42 45}

Perceptions of the two groups of respondents (service providers and health managers) on most issues were largely similar. However, at some instances, we noted divergent views among the two groups regarding the impact of COVID-19 on the mental health of health service providers. It is worrisome to note that while health service providers claimed to experience significant adverse psychological effects due to COVID-19, some health managers denied that their staff faced any stress or difficulty working during the pandemic. These contradictory views may be attributed to a disconnect or lack of communication between service providers and health managers. Another reason for this denial from health managers could be an attempt to express that things are managed well by them since they are generally responsible for the safety and well-being of service providers. Nonetheless, it is important to investigate the causes of such contrasting views about the same phenomenon by

different groups, especially when it affects the health system at large.

The study revealed the mental health needs of health service providers including the need to provide counselling services and safe working conditions, the need for paid rest periods and timely payment of workers' salaries, and the need for appreciation and motivation to work in the pandemic. This finding is consistent with other studies where HCWs expressed similar needs.^{46 47} For example, previous experience from the Ebola outbreak in western Africa highlighted the need to provide risk allowance for motivating and retaining HCWs.⁷ Our study also highlighted the need to provide risk allowance to health service providers. In addition, our study emphasised the need to provide timely salaries to health service providers and extra rest periods. Both groups of respondents revealed that the health system response in the given scenario has been weak given the lack of existing support mechanisms to address the mental health needs of the health workforce during the COVID-19 pandemic. Inefficient management of the pandemic from the healthcare system was also reported in other countries.^{40 48 49}

Finally, the health service providers and health managers provided three suggestions to address the mental health needs of health service providers in the future including the provision of mental health services to address the mental needs of health service providers, and conducting formal training of health managers in managing and anticipating the mental health needs of the health workforce to guide future initiatives. Experiences from similar outbreaks suggest that an early mental health intervention and the establishment of early support systems are particularly important to promote the emotional release and improve health service providers' well-being.⁵⁰ Similar interventions have been used in the past to address mental health issues in HCWs during an infection disease outbreak.⁵¹ Capacity building of health facility staff on the provision of psychosocial support is also recommended in the WHO (2020) interim guidance document on COVID-19.⁴² Call centres have been established in many countries—including Pakistan⁵²—to provide needs-based mental health support to HCPs. In Pakistan, the 'WeCare' Programme probably needs to expand its scale of services to effectively address the psychosocial and mental health needs of HCPs. Our study will use knowledge translation tools to share the key findings of this qualitative study with a diverse audience including policymakers, knowledge users, clinicians, researchers, health service providers and hospital managers. Concerning future research direction, insights from the qualitative study would help in streamlining health system response in addressing the mental needs of the health workforce working during the COVID-19 pandemic.

Strengths and limitations

The study has several strengths and limitations. First, the study used multiple cadres of the health system (health service providers and health managers), which allowed

researchers to look for converging and diverging lines of inquiry to identify common themes/concepts and incongruence between data sources. Second, our study sample provides adequate representation from rural settings in the country. Third, the study was conducted in close collaboration with the provincial governments. However, this study is also subject to limitations. First, the study was conducted with a focus on public sector hospitals in only two provinces of Pakistan (Sindh and Punjab), which would limit the transferability of the findings to other provinces.⁵³ Guba and Lincoln argue for the concept of 'fittingness', which emphasises analysing the degree to which a situation studied matches other situations in which one is interested, and provides a more workable way of thinking about transferability.⁵³ Thus, this study may provide insights for similar public hospitals across Pakistan that are interested in understanding the mental health impact and mental health needs of health service providers during the COVID-19 pandemic. Second, the study was unable to carry out member checking with study participants, which may have affected the validity of study findings. Lastly, the authors did not have the opportunity to build rapport and obtain non-verbal cues during interviews since the participants were interviewed telephonically due to the COVID-19 situation. In addition, the interviewees might have been distracted during interviews by the activities in their environment and might have experienced fatigue due to long telephonic interviews.

CONCLUSION

Our findings show that the health system of Pakistan was not prepared to deal with the mental health needs of health service professionals during the COVID-19 pandemic. This information is crucial in anticipating and preparing for tackling possible future pandemics. Health managers and health service providers shared similar concerns about working during the outbreak. Multiple recommendations are made to the government stakeholders for initiating nationwide initiatives for catering to the mental health needs of HCPs. At the system, (a) communication strategies should be devised to ensure better communication between health managers and health service providers at all hierarchies so that the needs and concerns are timely heard and taken care of; and (b) there is a need to establish a specialised unit that should provide mental health services to mitigate the detrimental effects of COVID-19 on the mental health of HCPs. At the staff level, HCPs should be given recognition to boost their morale either through monetary incentives or through formal appreciation based on their performance.

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Competing interests None declared.

Patient and public involvement Patients and/or the public were involved in the design, or conduct, or reporting, or dissemination plans of this research. Refer to the Methods section for further details.

Patient consent for publication Obtained.

Ethics approval Ethical approval for this study was obtained from the Aga Khan University Ethical Review Committee (AKU-ERC; 2020-5186-11602) and National Bioethics Committee of Pakistan (4-87/COVID-45/NBC/20/393).

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COREQ (COnsolidated criteria for REporting Qualitative research) Checklist

A checklist of items that should be included in reports of qualitative research. You must report the page number in your manuscript where you consider each of the items listed in this checklist. If you have not included this information, either revise your manuscript accordingly before submitting or note N/A.

Topic	Item No.	Guide Questions/Description	Reported on Page No.
Domain 1: Research team and reflexivity			
<i>Personal characteristics</i>			
Interviewer/facilitator	1	Which author/s conducted the interview or focus group?	6
Credentials	2	What were the researcher's credentials? E.g. PhD, MD	6
Occupation	3	What was their occupation at the time of the study?	6
Gender	4	Was the researcher male or female?	6
Experience and training	5	What experience or training did the researcher have?	6
<i>Relationship with participants</i>			
Relationship established	6	Was a relationship established prior to study commencement?	6
Participant knowledge of the interviewer	7	What did the participants know about the researcher? e.g. personal goals, reasons for doing the research	7
Interviewer characteristics	8	What characteristics were reported about the interviewer/facilitator? e.g. Bias, assumptions, reasons and interests in the research topic	N/A
Domain 2: Study design			
<i>Theoretical framework</i>			
Methodological orientation and Theory	9	What methodological orientation was stated to underpin the study? e.g. grounded theory, discourse analysis, ethnography, phenomenology, content analysis	5
<i>Participant selection</i>			
Sampling	10	How were participants selected? e.g. purposive, convenience, consecutive, snowball	5
Method of approach	11	How were participants approached? e.g. face-to-face, telephone, mail, email	6
Sample size	12	How many participants were in the study?	6
Non-participation	13	How many people refused to participate or dropped out? Reasons?	5
<i>Setting</i>			
Setting of data collection	14	Where was the data collected? e.g. home, clinic, workplace	6
Presence of nonparticipants	15	Was anyone else present besides the participants and researchers?	6
Description of sample	16	What are the important characteristics of the sample? e.g. demographic data, date	8
<i>Data collection</i>			
Interview guide	17	Were questions, prompts, guides provided by the authors? Was it pilot tested?	6
Repeat interviews	18	Were repeat interviews carried out? If yes, how many?	6
Audio/visual recording	19	Did the research use audio or visual recording to collect the data?	6
Field notes	20	Were field notes made during and/or after the interview or focus group?	6
Duration	21	What was the duration of the interviews or focus group?	6
Data saturation	22	Was data saturation discussed?	6

Transcripts returned	23	Were transcripts returned to participants for comment and/or correction?	6
Domain 3: analysis and findings			
<i>Data analysis</i>			
Number of data coders	24	How many data coders coded the data?	6
Description of the coding tree	25	Did authors provide a description of the coding tree?	6
Derivation of themes	26	Were themes identified in advance or derived from the data?	6
Software	27	What software, if applicable, was used to manage the data?	6
Participant checking	28	Did participants provide feedback on the findings?	6
<i>Reporting</i>			
Quotations presented	29	Were participant quotations presented to illustrate the themes/findings? Was each quotation identified? e.g. participant number	7
Data and findings consistent	30	Was there consistency between the data presented and the findings?	7
Clarity of major themes	31	Were major themes clearly presented in the findings?	9
Clarity of minor themes	32	Is there a description of diverse cases or discussion of minor themes?	11

Developed from: Tong A, Sainsbury P, Craig J. Consolidated criteria for reporting qualitative research (COREQ): a 32-item checklist for interviews and focus groups. *International Journal for Quality in Health Care*. 2007. Volume 19, Number 6: pp. 349 – 357

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COVID-19: psychosocial and mental health needs of health workers during the outbreak management in Pakistan

IN-DEPTH INTERVIEW GUIDE FOR HEALTH MANAGERS AND SERVICE PROVIDERS

SECTION 1: PARTICIPANT CONTACT SHEET			
S.no	Questions	Responses	Skip
<i>Please complete before the interview.</i>			
101	Name of province	Sindh Punjab	1 2
102	Name of district		
103	Name of TALUKA / Tehsil		
104	Name of Union Council		
105	Type of health facility	Basic Health Unit (BHU) Rural Health Centre (RHC) Taluka Head Quarter (THQ) District Head Quarter (DHQ) Tertiary care hospital Specialised Isolation Centre	1 2 3 4 5 6
106	Name of health facility / Hospital		
107	Date of interview	____ / ____ / ____ dd mm yyyy	
SECTION 2: PARTICIPANTS PROFILE			
201	Sex	Male Female	1 2
202	Marital status	Never married Currently married Divorced Separated Widowed	1 2 3 4 5
203	Age (in years)	Years <input type="text"/> <input type="text"/>	
204	Number of living children	Children <input type="text"/> <input type="text"/>	
205	Do you live in a nuclear family or joint family?	Nuclear Joint	1 2
206	Highest level of education completed?	Matriculation Intermediate Bachelors Masters / M.Phil. PhD	1 2 3 4 5
207	Professional qualification	Lady Health Visitor Lady Health Worker	1 2

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		Midwife	3	
		Nurse	4	
		M.B.B.S	5	
208	What is the current position you hold in the organization?	Lady health supervisors (LHSS)	1	
		Managers from secondary level health facility (DHQ/THQ)	2	
		Medical superintendent of tertiary care teaching hospital	3	
		Specialist from Field isolation center, Karachi	4	
		Others specify_____	5	
209	How long you have been working in this health facility / catchment area?	Years	<input type="text"/>	<input type="text"/>
210	What is the total years of your professional experience?	Years	<input type="text"/>	<input type="text"/>

No.	Questions	Responses	Probe
1	THEME : Understanding psychological impact of covid-19 on healthcare workers		
	First, I would like to ask you some questions to understand the psychological impact of covid-19 on healthcare workers. The psychological adverse outcomes may include stress, anxiety, depression, burnout, post-traumatic stress disorder, fear-triggered panic attacks, psychosomatic symptoms, psychological violence, fatigue, stigma etc.		
1.1	How healthcare workers feel about working under tremendous pressure with COVID -19 situation?		Probes: <ul style="list-style-type: none"> Can you use example to explain the situation?
1.2	In your opinion, how has COVID-19 affected mental health of healthcare workers?		Probes: <ul style="list-style-type: none"> How healthcare workers are dealing with anxiety and fear related to managing COVID-19 inpatients? Is it affecting healthcare workers both negatively and positively?
1.3	Can you specify the reasons for adverse psychological outcomes among healthcare workers?		Probes: <ul style="list-style-type: none"> Reasons related to procedural changes (increased workload, long working hours)
1.4	How negative emotions among healthcare workers will affect the overall functioning of organisations/ institutions?		Probes: <ul style="list-style-type: none"> Do you think negative emotions among health worker may lead to poor health worker attention, understanding and decision-making ability
1.5	Do you think health workers have capacity to cope with psychological risk?		Probes: <ul style="list-style-type: none"> If yes, what are the coping mechanisms of healthcare workers? If no, why do you think healthcare workers lack capacity to cope with psychological risk?
1.6	Do you think psychological needs of population has changed in recent times?		Probes: <ul style="list-style-type: none"> How health system is responding to those psychological needs? Are health workers prepared to address changing psychological needs of patients with covid-19?
2	THEME: Identifying psychological needs of health workforce involved in covid-19 crisis		
	Now I would like to ask some questions to understand the psychological needs of health workforce involved in covid-19 crisis. The psychological needs of healthcare workers may include enabling working environment, safe and secured hospital environment, adequate staffing, support from mentors and floor managers, support from mental health counsellors, etc.		
2.1	What are the psychological needs of health workforce involved in covid-19 crisis		Probes: <ul style="list-style-type: none"> How did you get to know about their psychological needs?

2.2	Do you think healthcare workers are able to talk about their psychological needs and concerns?		Probes: <ul style="list-style-type: none"> • If yes, please share examples of some instances where healthcare workers have shared their psychological needs • If no, why healthcare workers are not able to talk about their concerns?
2.3	As a _____, how do you see your role in identifying the psychological needs of the health workforce		
3	THEME: Support mechanisms available to address mental health needs of healthcare workers		
	<i>I would like to know the support mechanisms/ processes available to address mental health needs of healthcare workers. These support mechanisms may include providing mental health support services, delivering counselling sessions, supporting workers through mental health helpline, etc.</i>		
3.1	What are the mechanisms available to support the mental health needs of healthcare workers?		Probes: <ul style="list-style-type: none"> • What interventions are currently used to support the mental health needs of healthcare workers? •
3.2	Do you think healthcare workers are able to receive adequate mental health support with these processes?		Probes: <ul style="list-style-type: none"> • Are they effective? Are these interventions appreciated by current health workforce?
3.3	Do you think your institution/health facility is prepared to manage mental health needs of the healthcare workers?		Probes: <ul style="list-style-type: none"> • If yes, please share a recent experience whereby mental health needs of a health worker were adequately addressed. • Do you think health system is currently prepared to address the mental health needs of health care workers <ul style="list-style-type: none"> ○ If yes, why? If no, why?
3.4	Have you received any formal training/ session on supporting mental health needs of the healthcare workers?		Probes: <ul style="list-style-type: none"> • How many times the training was conducted and for whom? • Can you tell me the objective of each training? • What aspects were covered in the training? • Who conducted those trainings? • What was the duration of each training?
3.5	As a _____, how do you see your role in addressing the psychological needs of the health workforce		Probes: <ul style="list-style-type: none"> • How do you provide the support to your staff? • Do you feel confident while addressing the mental health needs of your staff?

			<ul style="list-style-type: none"> How do you feel about your capacity in terms of addressing psychological needs of your staff How effective it is?
4	Theme: Understanding challenges in addressing mental health needs of healthcare workers		
	<i>Now I would like to understand the challenges you face while addressing mental health needs of health care workers like lack of adequate trainings, tools and resources</i>		
4.1	What are some of the barriers you face in addressing mental health needs of healthcare workers?		Probes: <ul style="list-style-type: none"> Do you think lack of trainings/resources as one of the barriers to addressing mental health needs of healthcare workers? How health system can address these barriers?
4.2	In your opinion, how these barriers could be handled efficiently, to ensure adequate mental health support for healthcare workers?		
5	Theme: Suggestions and recommendations to address psychological needs of health care workers		
	<i>Here I would like to understand how institutions could provide mental health support to healthcare workers. Specifically, we would like to understand the interventions that the health system can offer to alleviate psychological burden of healthcare workers.</i>		
5.1	What kind of relief healthcare workers expect to manage with these pressures?		
5.2	Do you have suggestions on how institutions could provide mental health support services for coping with stress related to this pandemic		Probes: <ul style="list-style-type: none"> How health system is prepared to address psychological needs of healthcare workers? How health system can ensure implementation of process and tolls to support mental health needs of healthcare workers? How health system will sustain the mental health support activities for its healthcare workers?
5.3	Do you have suggestions on how provincial/federal government could provide mental health support services for coping with stress related to this pandemic		

Table S1: Sample process of conventional content analysis

Text from transcript	Step 1: Readings transcripts and formulating open codes	Step 2: Developing Codebook	Step 3: Combined codes into categories	Step 4: Combine categories into themes
They (HCPs) were afraid for their families that our parents are old and if we carry coronavirus from here then we might not get them infected. Even if we don't show any symptoms, we would get them infected or we would get our children infected. So this fear was also prevailing	Infection to old parents Infection to children	Fear of infection	Fear of of infection, isolation and stigma	Psychological impact of Covid-19 on health service providers
Immediately after that, there was fear of isolation, like if you put yourself into isolation who will look after your family and your kids Health workers were hospital-bound and were afraid of living alone and being cut off from their families. They also felt the stigma from the people around them	Afraid of living alone No one to look after family Stigma from the people	Fear of Isolation Fear of Stigma		
Firstly, the PPEs we were using, we had to use them twice or thrice. this was our main issue. We had to wear the mask for two to three days even one week continuously One can call it anxiety, you can see it, and they were under a depressive state. All healthcare workers were. From doctors to nursing staff, paramedics, our sweepers, all our workers were going through depression	Reuse PPEs Workers going through depression	Lack of availability of PPEs Depression due to COVID-19	Stress due to poor availability of personal protective equipment Anxiety due to uncertainty of Covid-19	