



Impact of COVID–19 on Mental Health of Female Healthcare Workers Working at Liaquat University Hospital, Hyderabad & Jamshoro

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ABSTRACT

Background: The COVID-19 pandemic placed an extraordinary psychological burden on healthcare workers, particularly females who face the dual responsibility of professional duties and household roles. This study assessed the impact of the pandemic on the mental health of female healthcare workers in a tertiary care setting in Pakistan.

Methods: A descriptive cross-sectional study was conducted at Liaquat University Hospital, Hyderabad, and Jamshoro. A total of 282 female healthcare workers, including doctors, nurses, house officers, emergency personnel, and administrative staff, were recruited through purposive sampling. Data were collected using a structured questionnaire covering demographics and psychological health. Analysis was performed using SPSS version 23, and results were expressed as frequencies and percentages.

Results: Most respondents (60.6%) were aged 25–30 years, 87.9% were postgraduates, 70%

were married, and 72.7% were mothers. High levels of psychological distress were reported: 95.7% experienced physical exhaustion, 85.1% anxiety, 69.5% depression while managing COVID-19 patients, and 96.8% feared infecting their families. Moreover, 88.7% reported post-duty stress, 87.9% felt overburdened, and 83.7% struggled to balance work and home responsibilities. Although 98.2% recognized their mental health status and 94.0% prioritized it, 87.6% stated that workplace mental health support was inadequate.

Conclusion: Female healthcare workers experienced significant psychological distress during COVID-19, largely due to workload, emotional strain, and lack of institutional support. Provision of effective mental health services is essential to safeguard their well-being and ensure sustainable healthcare delivery.

Keywords: COVID-19, Female Healthcare Workers, Mental Health, Stress, Anxiety, Depression, Work–Life Balance, Pakistan.

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INTRODUCTION

The COVID-19 pandemic has posed an unprecedented global public health challenge, profoundly affecting healthcare systems and workers across the world¹. Originating in Wuhan, China, in December 2019, the novel coronavirus rapidly spread to over 200 countries, including Pakistan. By March 11, 2020, the World Health Organization declared COVID-19 a global pandemic. Pakistan reported its first confirmed case on February 26, 2020, in Karachi. With neighboring countries such as Iran and China among the earliest and hardest hit, the risk of rapid cross-border transmission was high².

Healthcare professionals (HCPs) are on the frontlines during such health crises and often face immense physical and psychological burdens³. The surge in COVID-19 cases, escalating mortality rates, lack of specific treatments, overwhelming workloads, shortages of personal protective equipment (PPE), and insufficient institutional support significantly elevated stress levels among medical staff. Prolonged duty hours, challenging working conditions, and the constant threat of infection further exacerbated their mental strain⁴.

Lockdown measures, although crucial in curbing the spread, did little to mitigate the pressure on healthcare workers⁵. Many were forced to operate in overburdened health facilities with limited resources and inadequate safety infrastructure. Continuous use of PPE often led to physical discomfort, including respiratory distress. Moreover, the unpredictable nature of the virus and evolving treatment protocols added to their anxiety and fear⁶.

In Pakistan, the rising number of COVID-19 infections and deaths among healthcare workers raised serious concerns⁷. Both male and female medical professionals faced substantial mental and physical challenges, but women were disproportionately affected. Female healthcare workers not only had to manage their professional responsibilities under intense conditions but also struggled with domestic duties, caregiving roles, and personal safety concerns, particularly during night shifts. This dual burden significantly heightened their levels of stress and burnout⁸.

Mental health, defined as a state of well-being where individuals can realize their abilities, manage daily stress, work productively, and contribute to their community, is essential for healthcare workers, especially during crises⁹. However, in Pakistan, mental health remains one of the most neglected areas of healthcare. Estimates suggest that 10–16% of the population experiences psychiatric disorders, with anxiety and depression being highly prevalent, particularly among women. Provincial data indicates especially high rates in Balochistan and Sindh¹⁰.

The psychological well-being of female healthcare workers has been particularly vulnerable during the pandemic¹¹. The compounded pressure of managing professional duties and family obligations, along with a lack of emotional and social support, has led to elevated mental distress. Globally, the burden of mental illness increased significantly during 2020, with a 26–28% rise in anxiety and major depressive disorders¹². Despite the availability of effective treatments, access remains limited, and stigma continues to hinder mental health care utilization.

In such crises, the workload for female professionals significantly increases, as they are required to fulfill both their clinical responsibilities and their roles within the household. Highlighting these dual pressures is essential to better understand and address the psychological burden experienced by

female healthcare providers during public health emergencies. The present study aimed to highlight the mental health challenges faced by female healthcare professionals during the COVID-19 pandemic in Pakistan, emphasizing the need for targeted support systems and mental health interventions for this vital segment of the workforce.

METHODS

This descriptive cross-sectional study was conducted at Liaquat University Hospital, Hyderabad, and Jamshoro for 6 months from 1st March 2024 to 31st August 2024. Ethical approval was obtained from the Research Ethics Committee (REC) of Liaquat University of Medical and Health Sciences (LUMHS) (Approval No: LUMHS/REC/-15 Dated: 13th/01/2022).

The study population comprised female healthcare professionals working in various capacities, including physicians, gynecologists, obstetricians, surgeons, nurses, emergency medical personnel, house officers, administrative staff, and academic faculty (professors and lecturers) affiliated with Liaquat University of Medical and Health Sciences, Jamshoro. Participants were recruited from different hospital departments such as wards, emergency rooms (ER), intensive care units (ICU), and outpatient departments (OPDs).

The study was carried out over a period of six months following the approval of the research synopsis. Based on a prevalence estimate of 16%,⁸ the sample size was calculated using the standard formula $n = t^2 \times p \times q / e^2$ Where t represents the critical value at a 95% confidence level (1.96), p is the prevalence (0.16), q is (1 - p), and e is the margin of error (0.05). Substituting the values gives $n = 1.96^2 \times 0.16 \times 0.84 / 0.05^2 = 245.84$. Allowing for a 10% non-response rate (36.8), the final sample size was adjusted to 282 participants.

A non-probability purposive sampling technique was employed to select participants who met the inclusion criteria. Eligible participants included all female healthcare workers employed at Liaquat University Hospital, regardless of their age or job designation. Exclusion criteria were male healthcare workers, individuals not employed in healthcare, and those unwilling to participate.

Data were collected using a structured questionnaire comprising two sections: demographic variables and study-specific variables. Demographic information included gender, marital status, number of children, education level, family structure, and socioeconomic status. Study variables assessed work-related factors and mental health outcomes, such as working hours and setting, psychological impact, work performance, daily functioning, and work-life balance.

Informed written consent was obtained from each participant after explaining the study objectives and procedures. Participation was voluntary, and respondents were assured of confidentiality and anonymity. The study adhered to ethical standards and was approved by the Research Ethics Committee (REC) of LUMHS. All data collected was kept confidential and used solely for research purposes.

Data were analyzed using the Statistical Package for the Social Sciences (SPSS) version 23. For categorical variables, frequencies and percentages were calculated. Continuous variables were presented using means and standard deviations.

RESULTS

Table 1: Socio-Demographic Characteristics of Female Healthcare Workers (n = 282)

Variable	Category	n (%)
Educational Status	Graduate	34 (12.1%)
	Postgraduate	248 (87.9%)
Marital Status	Married	217 (77.0%)
	Unmarried	65 (23.0%)
Family Structure	Nuclear	152 (53.9%)
	Joint	130 (46.1%)
Number of Children	1–2 children	188 (66.7%)
	3–4 children	16 (5.7%)
	>4 children	1 (0.4%)
	No children	77 (27.3%)
Monthly Income	Poor (PKR 5,000–10,000)	4 (1.4%)
	Middle (PKR 15,000–30,000)	208 (73.8%)
	Upper (> PKR 100,000)	70 (24.8%)
Work Hours Per Day/Week	8–9 hours	221 (78.4%)
	Day shift	30 (10.6%)
	Night shift	1 (0.4%)
	More than 20 hours per week	30 (10.6%)
Age Group	25–30 years	171 (60.6%)
	35–40 years	98 (34.8%)
	Above 40 years	13 (4.6%)

Table 1 shows that among the 282 female healthcare workers who participated in the study, the majority (87.9%) held postgraduate degrees, while 12.1% had only completed graduation. Most respondents were married (77.0%) and lived in nuclear families (53.9%), with 46.1% belonging to joint families. In terms of family structure, 66.7% of the participants had one to two children, 5.7% had three to four children, and a small proportion (0.4%) had more than four children. Additionally, 27.3% of participants reported having no children.

Regarding monthly income, 73.8% of respondents fell within the middle-income bracket (PKR 15,000–30,000), 24.8% were in the upper-income group (more than PKR 100,000), and 1.4% reported poor income levels (PKR 5,000–10,000). The majority (78.4%) worked for 8–9 hours per day or week, 10.6% were involved in day shifts, 10.6% worked more than 20 hours per week, while

only 0.4% were working night shifts. The age distribution showed that 60.6% of participants were between 25–30 years, 34.8% were between 35–40 years, and 4.6% were older than 40.

Table 2: Work Environment, Psychological Impact, and Mental Health Awareness (n = 282).

Variable	Response	n (%)
Knowledge about COVID-19	Yes	267 (94.7%)
	No	15 (5.3%)
Support for Lockdown	Yes	251 (89.0%)
	No	31 (11.0%)
Adequate PPE Provided	Yes	222 (78.7%)
	No	60 (21.3%)
Worked Directly with COVID-19 Patients	Yes	214 (75.9%)
	No	68 (24.1%)
Infected with COVID-19 During Work	Yes	199 (70.6%)
	No	83 (29.4%)
Fear of Infecting Family Members	Yes	273 (96.8%)
	No	9 (3.2%)
Physical Exhaustion After Work	Yes	270 (95.7%)
	No	12 (4.3%)
Anxiety During Job	Yes	240 (85.1%)
	No	42 (14.9%)
Depression While Handling COVID-19 Patients	Yes	196 (69.5%)
	No	86 (30.5%)
Stress After Work	Yes	250 (88.7%)
	No	32 (11.3%)
Overburdened During Duty	Yes	248 (87.9%)
	No	34 (12.1%)
Overburdened Managing Work and Home	Yes	236 (83.7%)
	No	46 (16.3%)
Family Support for Work–Home Balance	Yes	275 (97.5%)

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	No	7 (2.5%)
Awareness of Own Mental Health Conditions	Yes	277 (98.2%)
	No	5 (1.8%)
Prioritization of Mental Health	Yes	265 (94.0%)
	No	17 (6.0%)
Availability of Mental Health Assistance at the Workplace	Yes	35 (12.4%)
	No	247 (87.6%)

Table 2 shows that almost all respondents (94.7%) had prior knowledge of COVID-19. A large majority (89.0%) agreed with the imposition of lockdown to control the spread of the virus. While 78.7% reported that they were provided with adequate personal protective equipment (PPE), 75.9% stated they had worked directly with COVID-19 patients. Notably, 70.6% of the respondents reported contracting COVID-19 during their professional duties. A significant proportion (96.8%) expressed fear of infecting their family members due to occupational exposure. Physical exhaustion after work was reported by 95.7% of the participants. Regarding mental health, 85.1% experienced anxiety, 69.5% felt depressed while managing COVID-19 patients, and 88.7% reported feeling stressed after work. Additionally, 87.9% of respondents felt overburdened during their professional duties, and 83.7% reported difficulty in managing both household and professional responsibilities.

Despite these challenges, 97.5% of the respondents reported receiving support from their families to maintain a work–life balance. An overwhelming majority (98.2%) were aware of their mental health conditions, and 94.0% stated they prioritized their mental well-being. However, only 12.4% of respondents believed that their workplace offered adequate mental health assistance, while 87.6% reported the absence of such support systems.

DISCUSSION

This study aimed to assess the impact of the COVID-19 pandemic on the mental health of female healthcare workers at Liaquat University Hospital, Hyderabad, and Jamshoro. The findings revealed that a significant proportion of respondents experienced mental health challenges during the pandemic, including stress, anxiety, depression, overburden, nervousness, and fear. These psychological issues were largely attributed to the dual burden of professional responsibilities and domestic obligations, coupled with the lack of mental health support at the workplace.

Female healthcare workers, like their male counterparts, faced heightened physical and mental strain due to their direct involvement in patient care during the pandemic. However, women in the healthcare sector often bear additional responsibilities, such as caregiving roles at home, which compound their stress levels. This is consistent with other studies that report similar findings, highlighting that healthcare professionals were under immense pressure due to factors such as stigmatization, risk of infection, inadequate staffing, limited support, and the general uncertainty surrounding the pandemic^{13,14,15}. Female frontline workers, in particular, were found to be at high risk of developing psychological disorders, including anxiety, depression, stress, and insomnia².

In the broader Pakistani context, mental health remains a critically neglected area of healthcare. National estimates suggest that 10–16% of the population, primarily women, suffer from psychiatric conditions. In total, over 970 million individuals are believed to be living with some form of mental illness¹⁶. Despite this burden, mental health services and awareness remain limited, particularly among working women^{17,18}.

Women in healthcare face unique challenges, including balancing their professional duties with family responsibilities, managing household tasks, and often lacking emotional and social support. Marital status, early age at marriage, number of children, financial dependence on spouses, and living in extended family systems further contribute to psychological stress^{19,20}. These pressures can result in feelings of overwork, fatigue, and emotional exhaustion. Many female healthcare workers reported that after long and demanding shifts caring for COVID-19 patients, they returned home to continue performing household responsibilities without adequate rest or support, further escalating their mental burden⁶.

The findings from this study are particularly telling. A majority of respondents (95.7%) reported physical exhaustion after work, and 85.1% experienced anxiety during duty hours. Approximately 69.5% felt depressed while treating COVID-19 patients, and an overwhelming 96.8% feared transmitting the virus to their families. Moreover, 88.7% reported stress after work, 87.9% felt overburdened during their duties, and 83.7% struggled to manage both home and work responsibilities. While 98.2% were aware of their mental health status and 94.0% prioritized their mental well-being, a striking 87.6% stated that they lacked access to adequate mental health assistance in their workplace.

Other studies echo these findings, emphasizing that many mothers feel guilty for seeking time for themselves, as societal expectations often discourage prioritizing personal well-being over caregiving duties^{21,22,23}. Female healthcare professionals not only grapple with the professional pressures of pandemic care but also with emotional and cultural expectations that restrict their ability to decompress and seek help.

These results underscore the urgent need for institutional interventions and policy-level changes aimed at protecting and supporting the mental health of female healthcare workers. According to recent reviews, effective policies, when implemented proactively, can significantly mitigate the psychological burden experienced by this vulnerable group^{24,25}. Workplace mental health resources, family-friendly policies, emotional support systems, and public awareness campaigns are essential components of such strategies.

This study was limited to female healthcare workers from only two institutions, Liaquat University Hospital in Hyderabad and Jamshoro. The sample size, while adequate for the scope of this research, was relatively small and may not reflect the experiences of all female healthcare professionals across different regions. Further large-scale studies are needed to enhance the understanding of mental health challenges among healthcare workers and to identify broader national gaps in workplace mental health support.

CONCLUSION

This study highlighted the significant psychological impact of the COVID-19 pandemic on female healthcare workers. The findings revealed a high prevalence of common mental health concerns such as stress, anxiety, depression, fear, nervousness, and feelings of being overburdened. These issues were largely attributed to the dual responsibility of managing professional duties alongside household obligations, coupled with the lack of institutional support for mental health. The absence of proper workplace-based mental health assistance further exacerbated these challenges. These findings underscore the crucial need to establish structured mental health support systems within healthcare settings.

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CONFLICT OF INTEREST

None

ETHICAL APPROVAL

Ethical approval was obtained from the Research Ethics Committee (REC) of Liaquat University of Medical and Health Sciences (LUMHS) (Approval No: LUMHS/REC/-15 Dated: 13th/01/2022).

AUTHORS' CONTRIBUTION

All contributed equally as per ICMJE.

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