



Research Article

Impact of the COVID-19 on the Quality of Life and Psychological Well-Being of Healthcare Professionals During and After Pandemic: A Prospective Study

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Abstract

Background: The COVID-19 pandemic has profoundly affected healthcare professionals (HCPs) worldwide, particularly in India, where the healthcare system faced unprecedented challenges. This study investigates the impact of the pandemic on the quality of life (QOL) and psychological well-being of Indian HCPs, focusing on changes during and after the pandemic.

Methods: A prospective study was conducted from September 2021 to March 2023 at a tertiary care hospital in India. A total of 120 HCPs were selected through simple random sampling. Data were collected using a semi-structured questionnaire, including the WHOQOL-BREF tool, to assess overall QOL and psychological health during COVID and post COVID. Paired t-tests were performed to compare QOL measures during and after the pandemic using SPSS version 26.

Results: During the pandemic, the mean score for Overall Quality of Life and General Health was 5.98 (SD = 1.81), and the Psychological Domain score was 17.58 (SD = 3.87), indicating poor quality of life and psychological well-being. Post-pandemic, these scores improved significantly, with mean scores of 7.17 (SD = 1.52) for Overall Quality of Life and General Health and 21.14 (SD = 3.75) for the Psychological Domain. Statistical analysis revealed significant improvements ($p < 0.001$) in both QoL and psychological well-being from the pandemic period to the post-pandemic period.

Conclusion: The COVID-19 pandemic had a marked negative impact on the QOL and psychological well-being of HCPs, with significant improvements observed post-pandemic. Overall, the COVID-19 pandemic highlighted the critical need for better preparedness and support systems to ensure healthcare professionals to have good QOL and manage future health emergencies effectively.

Keywords: COVID-19, healthcare professionals, quality of life, psychological well-being, India, WHOQOL-BREF, post-pandemic recovery

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INTRODUCTION:

The severe acute respiratory syndrome-coronavirus-2 (SARS-CoV-2) pandemic, widely known as COVID-19, first emerged in Wuhan, China, in late December 2019. It rapidly spread across the region and soon captured global attention [1]. By March 2020, the World Health Organization (WHO) officially declared COVID-19 a global pandemic [2]. As of March 2024,

the WHO reported a staggering 775,132,086 confirmed COVID-19 cases worldwide, with 7,042,222 fatalities and a total of 13.59 billion vaccine doses administered [3].

Quality of life (QOL) is a multidimensional concept that reflects an individual's perception of their position in life, shaped by their cultural background, belief systems, aspirations, expectations, and priorities [4-6]. The COVID-19

pandemic exposed significant gaps in health preparedness among healthcare professionals, revealing vulnerabilities in healthcare systems worldwide subjecting them to increased strain, physical exhaustion, social isolation, and a lack of support systems. Additionally, inadequate preventive measures, the risk of occupational viral transmission, and unprecedented ethical dilemmas related to care rationing have significantly impacted their physical and emotional well-being [7]. Recognizing these challenges, the WHO was among the first to emphasize the importance of protecting healthcare professionals from occupational infections during pandemics, acknowledging their heightened vulnerability to psychological distress, especially in the early stages of a pandemic [8].

The COVID-19 pandemic has not only strained global public health systems but has also taken a profound toll on the mental and emotional well-being of individuals, particularly those on the front lines of the response. Healthcare professionals have faced extraordinary challenges, including overwhelming patient loads, shortages of critical resources, and personal risks of infection. These factors have collectively contributed to a substantial psychological burden. Studies conducted globally have documented the elevated levels of stress, anxiety, and burnout experienced by HCPs during the pandemic [9]. In India, these challenges were exacerbated by the sheer scale of the outbreak and the limitations of healthcare infrastructure in certain regions. The second wave, in particular, placed immense pressure on the healthcare system, raising widespread concerns about the psychological health and QOL of medical staff [10].

While global studies provide valuable insights into the psychological and emotional impact on healthcare workers, there is a noticeable lack of region-specific research focused on the Indian context, especially regarding the long-term effects as the pandemic evolved. Understanding the psychological impact and overall QOL of HCPs in India during and after the pandemic is crucial for developing targeted interventions to support this essential workforce. This study aims to compare the psychological impact and overall QOL of HCPs in India during and after the COVID-19 pandemic.

METHODOLOGY:

This prospective study was conducted among healthcare professionals at a tertiary care hospital from September 2021

to March 2023. This study was done as a part of follow-up study, utilising data collected during the COVID-19 pandemic and the current data collected post-pandemic on quality of life among healthcare professionals. A total of 120 participants were selected using a simple random sampling method to minimize selection bias and ensure that the sample accurately represented the broader population of HCPs at the institution. Prior to the study's initiation, approval was secured from the institutional human ethics committee, confirming that all procedures adhered to ethical standards. Informed consent was obtained from all participants, who were fully briefed on the study's objectives, their voluntary participation, and their right to withdraw at any time without penalty.

Data collection was carried out through face-to-face interviews, which facilitated direct interaction with participants and allowed for the clarification of any ambiguities in their responses. Trained researchers conducted these interviews using a semi-structured questionnaire, which was divided into two main sections. The first section gathered socio-demographic information, including age, gender, marital status, educational level, years of professional experience, and specific roles during the pandemic. The second section employed the WHOQOL-BREF Questionnaire, a validated tool designed to assess quality of life across four domains: physical health, psychological health, social relationships, and environment [11]. Given the significant impact observed on overall quality of life and psychological well-being during the COVID-19 pandemic in previous studies, the follow-up study focused specifically on these two domains.

Socio-demographic characteristics were analyzed statistically and presented as frequencies and percentages, providing a clear overview of the participant population. To compare the quality of life (QOL) during and after the COVID-19 pandemic, a paired t-test was employed, utilizing SPSS version 26 for all statistical analyses. This approach was chosen to assess the differences in QOL measures across two time points, with the paired nature of the test accounting for the fact that the same individuals were assessed during both periods. The analysis aimed to quantify the changes in QOL, offering insights into how the pandemic affected the well-being of healthcare professionals and how their quality of life evolved in the post-pandemic period.

RESULTS:

Table 1: Characteristics of the study participants (n=120)

S.no	Variables		Frequency (n)	Percentage (%)
1	Age (Current age)	≤ 32	71	59.2
		> 32	49	40.8
2	Gender	Male	53	44.2
		Female	67	55.8
3	Healthcare professionals	Doctor	48	40
		Nurse	31	25.8
		Allied health science	41	34.1
4	Marital status	Married	87	72.5
		Unmarried	33	27.5
5	Co morbidity	Present	12	10

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		Absent	108	90
6	Type of family	Nuclear	86	71.7
		Joint/Three generation	34	28.4
7	Previous h/o COVID infection	Yes	50	41.7
		No	70	58.3

The Table 1 provides a detailed demographic profile of a sample population, showcasing various key characteristics. The majority of participants are 32 years old or younger (59.2%), with a higher proportion of females (55.8%) compared to males. Most are healthcare professionals, with doctors being the largest group (40%), followed by allied health science professionals (34.1%) and nurses (25.8%). A significant majority are married (72.5%) and live in nuclear families (71.7%). Additionally, 90% of the participants do not

have co-morbidities, and 58.3% have not had a previous COVID-19 infection. This data provides a detailed demographic and professional breakdown of the study participants. This demographic profile reflects a predominantly young, female, and married group of healthcare professionals, largely living in nuclear family environments with minimal comorbidity and a relatively low incidence of prior COVID-19 infection.

Table 2: Quality of life score of study participants during COVID

S.no	QOL-BREF Component	Minimum score	Maximum score	Mean score	Standard deviation
1	Overall Quality of Life and General Health	2	10	5.98	1.81
2	Psychological Domain	8	27	17.58	3.87

The table 2 presents key statistical measures for two components of the QOL-BREF assessment during COVID-19 pandemic . The results indicate that both the overall quality of life and psychological well-being of healthcare professionals are considered poor. The mean score for Overall Quality of Life and General Health is 5.98 out of 10, reflecting a poor perception of quality of life and general health. Similarly, the

Psychological Domain score has a mean of 17.58 out of 27, which also suggests poor psychological well-being, despite it being slightly better than the overall quality of life score. These results highlight areas of concern regarding both general and psychological health among the participants because of lack of health preparedness during pandemic.

Table 3: Quality of life score of study participants post COVID

S.no	QOL-BREF Component	Minimum score	Maximum score	Mean score	Standard deviation
1	Overall Quality of Life and General Health	3	10	7.17	1.52
2	Psychological Domain	11	30	21.14	3.75

The table 3 presents key statistical measures for two components of the QOL-BREF assessment after COVID-19 pandemic. The results reveal that the quality of life and psychological well-being of healthcare professionals are considered good. The mean score for Overall Quality of Life and General Health is 7.17 out of 10, reflecting a relatively high perception of both quality of life and general health. Similarly, the Psychological Domain score, with a mean of

21.14 out of 30, indicates good psychological well-being, suggesting a favorable level of mental health among the participants. Overall, the current data reflects a trend towards better perceived quality of life and psychological health, with less variation among responses, highlighting an overall improvement in the quality of life and general well-being of the respondents compared to the earlier dataset

Table 4: Comparison between the mean values of QOL during COVID and post COVID

Outcome measure	Group	Mean	Standard deviation	Mean difference	t value	df	p value
Overall Quality of Life and General Health	During COVID	5.98	1.81	-1.73	-11.5	119	<0.001
	Post COVID	7.17	1.52				
Psychological Domain	During COVID	17.58	3.87	-3.56	-11.2	119	<0.001
	Post COVID	21.14	3.75				

The table 4 results compare the overall quality of life and psychological well-being of individuals during the COVID-19 pandemic to their status post-pandemic. The results show a

significant improvement in both overall quality of life and psychological well-being from the pandemic period to the post-pandemic period. During COVID-19, the mean score for

Overall Quality of Life and General Health was 5.98 (SD = 1.81), which was considered poor. This improved to a mean score of 7.17 (SD = 1.52) post-COVID, indicating a good quality of life. Similarly, the Psychological Domain score during the pandemic had a mean of 17.58 (SD = 3.87), reflecting poor psychological well-being. Post-pandemic, this score increased to 21.14 (SD = 3.75), signifying good psychological health. The statistically significant p-values underscore the reliability of these differences, highlighting the profound effect the pandemic had on individuals' well-being and the positive shift following its decline.

DISCUSSION:

Healthcare professionals, including doctors, are inherently at a higher risk of mental health issues due to the demanding nature of their work. The pandemic exacerbated this situation, with increased workplace stress leading to a rise in cases of depression, anxiety, and panic attacks [12]. A study conducted among Indian healthcare professionals during the COVID-19 epidemic revealed a significant prevalence of depression and anxiety symptoms, along with a negative impact on quality of life. The findings underscore the urgent need to prevent and treat mental health problems among frontline healthcare providers [13].

Similarly, a national survey in China focused on frontline psychiatric practitioners during the COVID-19 pandemic, examining the relationship between depression and quality of life. The average quality of life (QoL) score among participants was 6.64 (1.60%), with those free from depression scoring 7.12 (1.42%) and those with depressive symptoms scoring 5.46 (1.39%) [14]. There is a growing recognition that, while protecting healthcare professionals from infection during the pandemic is crucial, safeguarding their overall quality of life is equally important. Indeed, 45% of the healthcare professionals in our study reported a low QoL [15].

Zhang et al. (2021) reported improvements in quality of life among frontline psychiatric clinicians in China as the immediate crisis of COVID-19 subsided, reflecting a similar recovery trend [13]. Additionally, the study by Duva et al. (2022) demonstrated the effectiveness of resiliency training and support systems in improving well-being among healthcare workers during and after the pandemic, supporting the positive outcomes observed in this study [19]. The improvement in psychological well-being and QOL post-pandemic underscores the importance of effective support systems and preparedness measures. The current study's findings are consistent with research emphasizing the need for comprehensive support systems to mitigate the impact of future crises. Young et al. (2021) highlighted that healthcare workers' mental health improved when appropriate support and resources were made available [8]. The lack of effective interventions during the pandemic, as noted in the study, aligns with concerns raised by Pereira-Sanchez et al. (2020) about inadequate support for healthcare workers, which exacerbated mental health issues during the peak of the pandemic [17]. The current study's post-pandemic data suggest that improvements in support systems and resilience-building efforts could be crucial for enhancing the well-being of healthcare professionals.

During COVID-19 patients proper information, training, patient workload, increasing isolation wards, allowing necessary breaks, and ensuring an adequate supply of PPE. These strategies are consistent with research conducted in Indonesia, which found that strict protective measures, awareness of virus prevention and transmission, social isolation, and a positive attitude helped to reduce stress levels [17]. The findings suggest that health preparedness is necessary during the pandemic. Policymakers should consider conducting comprehensive and longitudinal assessments of holistic programs aimed at building resilience and training for public health emergencies. One limitation of the study is that the sample size, although providing valuable insights, may not be sufficiently large to generalize the findings to all healthcare professionals throughout different regions of India. Variations in healthcare infrastructure, resources, and pandemic management strategies across various regions might have led to different experiences, which are not reflected in this study.

CONCLUSION:

This study reveals that the COVID-19 pandemic severely impacted the quality of life and psychological well-being of healthcare professionals due to lack of preparedness to face the pandemic, but significant improvements were noted post-pandemic due to the resilience of healthcare professionals and underscore the critical need for continued support and resources. Effective health preparedness and support systems are essential not only for managing future public health emergencies but also for sustaining the well-being of healthcare professionals.

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