



## Original Article

## Impact of COVID-19 Pandemic on the Quality of Life of Nurses Working in the Public Sector Tertiary Care Hospitals of Karachi

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## ABSTRACT

COVID-19 has a substantial influence related to the quality of life of nurses by increasing the number of patients, which increases the work burden and stress level. **Objective:** To determine the impact of the COVID-19 pandemic on the quality of life of nurses working in the public sector tertiary care hospitals of Karachi. **Methods:** Present an analytical cross-sectional study design was employed to determine the quality of life of working nurses by using a non-probability convenient sampling technique to recruit 240 nurses. The quality of life of nurses was assessed by using the McGill Quality of Life (QoL) revised questionnaire. Results were considered significant at p-value of  $\leq 0.05$ . **Results:** Out of a total of 240 nurses, most of them 135 (56.2%) were male, 177 (73.88%) married, 128, 53.3% Post RN qualification, and 99 (41.2%) 6 to 10 years of working experience. The mean  $\pm$  SD of the overall QoL of nurses was  $6.56 \pm 2.53$ . Based on multiple logistic regression analysis, males had 2.79 times better QoL during the COVID-19 pandemic as compared to females (ORadj=2.79, 95% CI: 1.05 - 7.45, p= 0.04). Similarly, married persons had 3.06 times better QoL during the COVID-19 pandemic as compared to others (ORadj=3.06, 95% CI: 2.14 - 3.34, p= 0.003). **Conclusions:** It is concluded that the COVID-19 pandemic has a significant effect on all aspects of the physical, psychological, existential and social quality of life of nurses working in the public sector tertiary care hospitals of Karachi, Pakistan.

## INTRODUCTION

The Coronavirus disease (COVID-19) is a viral disease that evolved in Wuhan, China and was declared by WHO a pandemic on 11th March 2022, which affected the whole world [1]. The median of COVID-19 incubation was 4 days, and it is transmitted from human to human through respiratory droplets [2]. COVID-19 was identified as a family of severe acute respiratory syndrome, and it was transmitted from animals to humans [3]. Furthermore, in this unprecedented situation of a pandemic, it is quite challenging to cope with life-threatening disasters effectively [4]. During the pandemic, a relatively strong campaign with the slogan 'Stay home, stay safe' was used as a public awareness message to limit public meetings pro, promote home quarantine [5], and limit social gatherings of people who come in contact with coronavirus infected persons with close monitoring for appearing any

symptoms to prevent others from getting infection [6]. As frontline health workers, the vital responsibility of nurses is to provide proper nursing care to the patient, and in this pandemic in China, 28,679 nurses were sent to the affected provinces as frontline fighters against COVID-19 disease [7]. In the month of April 2020 COVID 19, reported cases were above 2 million worldwide, and this virus caused 2 lac deaths. At the same time, nurses who are working in an infectious environment have a fear of giving the infection to their loved ones, which increases mental distress, anxiety, and depression in the nurses [8]. Nurses working during this pandemic experienced depression, anxiety and stress that can disrupt the quality of life of nurses and reduce the capabilities of nurses in their different roles as well [9]; additionally, when nurses work in high-risk infection environments, which may affect adversely the nurse's

mental health [10].

Thus, the present study aimed to determine the impact of COVID-19 on the quality of life of nurses working in tertiary care hospitals in Karachi, Pakistan.

## METHODS

An analytical cross-sectional study was conducted among nurses working at Dow University Hospital and Dr. Ruth K.M Pfau Civil Hospital Karachi for the period of four months from August 2020 to December 2020. Nurses working in the Dow University Hospital and Dr. Ruth KM Pfau Civil Hospital Karachi during the COVID-19 outbreak were enrolled for the study. On the other hand, nurses not willing to participate in the study, student nurses, contract nurses and outpatient department (OPD) nurses were excluded from the study. Non-probability convenient sampling method was utilized to access the respondents. Sample size was calculated through PASS version 11, with a 95% confidence interval, 80% power of the test and 5% margin of error. The sample size was calculated by using a 43.61% prevalence of depression seen in the Chinese population [11]. Prior to data collection, written informed consent were obtained. Questionnaires were explicitly explained to all participants. Confidentiality of data was assured by assigning code numbers. The participation of subjects was voluntary. Ethical approval was obtained from Institutional Review Committee (IRC) of Dow Institute of Nursing and Midwifery, Dow University of Health Sciences, Karachi, Ref No: DIONAM/MSN/2020-18/394. A validated and adopted revised version of the McGill Quality of Life questionnaire was utilized for the data collection [12]. The reliability of the MGQOL-R version is 0.94 [13]. The questionnaire comprises 15 items divided into four Parts. Each item uses 0 to 10 scales with anchors at both ends, where 0 for the lowest desire / Worst condition and 10 for the highest desire / Best condition. The questionnaire consists of four parts.

Data was entered and analyzed through SPSS version-24.0. The quantitative data was measured by using mean and standard deviation, and categorical data was measured through percentages. Results were considered significant at p-value of  $\leq 0.05$ .

## RESULTS

Out of a total 240 nurses, a large number of 135 (56.2%) were male, 177 (73.88%) married, 128, 53.3%) Post RN qualification, 99 (41.2%) had 6 to 10 years of experience, 46 (19.2%) working in the emergency ward and 52 (21.7 %) working in COVID-19 ward. With regard to age classification, most of them are from 20-27 years 28 (11.7%), 28-35 years 126 (52.5 %), 36-45 years 57 (23.8%) and 46 and above years 29 (12.1%). Table 1 revealed Quality of life according to McGill's Quality of Life revised questionnaire. According to the McGill Quality of Life (QoL) Questionnaire, in part A, the

item scale for the overall quality of life section, the mean +SD of the overall QoL of nurses was about  $6.56 \pm 2.53$  which was higher than the middle point, which showed better QOL. Similarly, in Part B of the questionnaire, the overall average of the physical Scale of quality of life was about  $6.59 \pm 3.19$ , which also showed a higher score than the middle point, which showed that the physical QOL of nurses was better. In Part C of the questionnaire, the psychological Scale mean  $\pm$  SD score was about  $6.96 \pm 2.5$ , which also showed the better psychological QOL of nurses. The existential Scale mean  $\pm$  SD score was about  $6.63 \pm 1.8$ , which also showed a higher score that indicates better Existential QOL of Nurses working in the public sector tertiary care hospital of Karachi, Pakistan. In Part D of the questionnaire, the social Scale mean  $\pm$  SD score was about  $6.77 \pm 2.5$ , which was also higher than the middle point and indicates better Social QOL of Nurses.

**Table 1:** Quality of life according to McGill Quality of Life revised questionnaire

Questions Distribution	Questionnaire	Mean $\pm$ SD
<b>Part A Overall QoL</b>	1.Considering all parts of my life – physical, emotional, social, spiritual, and financial – over the past two (2) days the quality of my life has been:	6.56 $\pm$ 2.53
<b>Part B Physical Scale</b>	1. My physical symptoms (pain, nausea, weariness, and others) throughout the last two days (48 hours) were as follows:	6.89 $\pm$ 3.2
	2. I felt the following for the last two days (48 hours):	6.15 $\pm$ 3.3
	3. Being physically unable to accomplish what I desired for the previous two days (48 hours) was:	6.73 $\pm$ 3.08
<b>Part C Psychological Scale Feelings &amp; thoughts Existential Scale</b>	1. I was distressed for the last two days (48 hours):	7.15 $\pm$ 3.0
	2. I felt nervous or concerned over the last two days (48 hours):	7.16 $\pm$ 2.94
	3. I've been displeased for the previous two days (48 hours):	7.12 $\pm$ 3.02
	4. When I considered the future through-out the last 48 hours, or the previous two days, I was:	6.41 $\pm$ 3.17
	5. In the last 48 hours, or the last two days, my life has been:	7.22 $\pm$ 2.73
	6. When I think about my whole life, I feel that in achieving life goals, I have:	6.75 $\pm$ 2.72
	7. Over the past two days (48 hours), I felt that the amount of control I had over my life was:	5.48 $\pm$ 3.40
	8. Over the past two days (48 hours), I felt good about myself as a person:	7.08 $\pm$ 2.83
<b>Part D Social Scale</b>	1. Over the past two days (48 hours), communication with the people I care about was:	6.92 $\pm$ 2.97
	2. In previous two days (48 hours), I felt my relationship with people I care about were:	6.31 $\pm$ 2.96
	3. In previous two days, I perceived support:	7.08 $\pm$ 3.05

Table 2 depicts the association between total quality score and demographical variables. Based on chi-square analysis, gender (p-value <0.001), age classification (p-value 0.03) and working area (p-value 0.004) were significantly associated with total quality of life as compared to other demographical variables.

**Table 2:** Association between Total Quality Score and Demographical Variables

Demographical Variable	Poor Quality of Life	Better Quality of Life	Chi-Square p-value
<b>Gender</b>			
Male	32 (82.1%)	103 (51.2%)	<0.001*
Female	7 (17.9%)	98 (48.8%)	
<b>Age</b>			
20-27	5 (12.8%)	23 (11.4%)	0.03*
28-35	26 (66.7%)	100 (49.8%)	
36-45	7 (17.9%)	50 (24.9%)	
46 & above	1 (2.6%)	28 (13.9%)	
<b>Marital Status</b>			
Married	28 (71.8%)	149 (74.1%)	0.817
Unmarried	11 (28.2%)	51 (25.4%)	
Divorce/Widow	0 (0.0%)	1 (0.5%)	
<b>Educational Qualification</b>			
Diploma+ Speciality	11 (28.2%)	78 (38.8%)	0.329
Post RN-BS Nursing	24 (61.5%)	104 (51.7%)	
Generic Nursing	4 (10.3%)	18 (9.0%)	
MS Nursing	0 (0.0%)	1 (0.5%)	
<b>Working Experience (Years)</b>			
<2	2 (5.1%)	14 (7.0%)	0.06
3-5	14 (35.9%)	37 (18.4%)	
6-10	16 (41.0%)	83 (41.3%)	
>10	7 (17.9%)	67 (33.3%)	
<b>Working Area</b>			
ER	11 (28.2%)	35 (17.4%)	0.004*
ICU	12 (30.8%)	40 (19.9%)	
CCU	3 (7.7%)	11 (5.5%)	
NICU	1 (2.6%)	9 (4.5%)	
MW	8 (20.5%)	39 (19.4%)	
SW	0 (0.0%)	19 (9.5%)	
Covid Ward	4 (10.3%)	48 (23.9%)	

Table 3 exhibited the multiple logistic Regression analysis between the total quality score and demographical Variables. Based on multiple logistic regression analysis (adjusted analysis), males were 2.79 times more affected by COVID-19 as compared to females (OR<sub>adj</sub>=2.79, 95% CI: 1.05-7.45, p= 0.04). Similarly, married persons were 3.06 times more affected by COVID-19 season as compared to others (OR<sub>adj</sub>=3.06, 95% CI: 2.14-3.34, p= 0.003). Nurses who worked in the ICU were 3.24 times more affected by COVID-19 season as compared to others (OR<sub>adj</sub>=3.24(0.57-8.49).

**Table 3:** Multiple Logistic Regression Analysis between Total Quality Score and Demographical Variables

Demographical Variable	Poor Quality of Life	Better Quality of Life	OR <sub>adj</sub> (95% CI)	p-value
<b>Gender</b>				
Male	32 (82.1%)	103 (51.2%)	2.79 (1.05-7.45)	0.04*
Female	7 (17.9%)	98 (48.8%)	--	--
<b>Age</b>				
20-27	5 (12.8%)	23 (11.4%)	2.06 (0.14-30.34)	0.598
28-35	26 (66.7%)	100 (49.8%)	2.60 (0.24-27.89)	0.429
36-45	7 (17.9%)	50 (24.9%)	1.59 (0.15-16.88)	0.698
46 & above	1 (2.6%)	28 (13.9%)	--	--
<b>Marital Status</b>				
Married	28 (71.8%)	149 (74.1%)	3.06 (2.14-3.34)	0.003
Unmarried	11 (28.2%)	51 (25.4%)	1.60 (1.24-2.89)	0.429
Divorce/Widow	0 (0.0%)	1 (0.5%)	--	--
<b>Educational Qualification</b>				
Diploma+ Speciality	11 (28.2%)	78 (38.8%)	1.50 (2.31-10.74)	0.987
Post RN-BS Nursing	24 (61.5%)	104 (51.7%)	3.98 (3.09-11.54)	0.002
Generic Nursing	4 (10.3%)	18 (9.0%)	2.56 (2.37-5.97)	0.120
MS Nursing	0 (0.0%)	1 (0.5%)	--	--
<b>Working Experience (Years)</b>				
<2	2 (5.1%)	14 (7.0%)	0.39 (0.05-2.87)	0.357
3-5	14 (35.9%)	37 (18.4%)	1.18 (0.32-4.35)	0.793
6-10	16 (41.0%)	83 (41.3%)	0.64 (0.20-2.0)	0.444
>10	7 (17.9%)	67 (33.3%)	--	--
<b>Working Area</b>				
ER	11 (28.2%)	35 (17.4%)	0.15 (0.69-10.12)	2.653
ICU	12 (30.8%)	40 (19.9%)	3.24 (0.57-8.49)	0.001
CCU	3 (7.7%)	11 (5.5%)	0.50 (0.31-10.74)	1.826
NICU	1 (2.6%)	9 (4.5%)	0.98 (0.09-11.54)	1.029
MW	8 (20.5%)	39 (19.4%)	0.56 (0.37-5.97)	1.503
SW	0 (0.0%)	19 (9.5%)	0.98 (0.12-5.23)	1.94
Covid Ward	4 (10.3%)	48 (23.9%)	--	--

## DISCUSSION

The present study was conducted to determine the impact of COVID-19 on the quality of life of nurses working in tertiary care hospitals in Karachi, Pakistan. In the current study, the established mean±SD of the overall QoL of nurses was 6.56 ± 2.53. In contrast, the highest mean + SD of overall QoL of nurses, 55.57 ± 18.70, was reported in Iran [14]. The present study disclosed that better physical scores among nurses showed improved quality of life of nurses. These results are dissimilar to a study accomplished in Brazil by Meneguim et al., which revealed low scores in the physical domain of quality of life among nurses during the COVID-19 pandemic [15]. Current study findings exhibited considerable social support among nurses, while a study carried out in Canada depicted low social support [16]. This study unveiled relatively better psychological QoL of nurses working during COVID-19. These study findings are more consistent with a research

study employed in Italy, which described a lack of insufficient psychological support that can lead to poorer psychological QOL of nurses [17]. Another research study was done in China found psychological changes in nurses includes fear, irritation, anxiety and depression [18]. In the present study, gender (p-value <0.001), age classification (p-value 0.03) and working area (p-value 0.004) were significantly associated with total quality. On the other hand, a research study conducted in Iran by Rashidi found no significant association between age, gender, education level, work experience, with quality of life among nurses while working in COVID-19 pandemic [19]. The present study results demonstrated that male nurses were 2.79 times more affected by COVID-19 as compared to females. These findings are dissimilar from a study conducted in China, which showed a higher prevalence of COVID-19 in females [20]. Present study observed married nurses much more affected than unmarried nurses. These study findings are parallel in study conducted in Quetta, Pakistan, showed lower health outcomes in married nurses [21]. Present study demonstrated that the nurses who worked in the ICU more affected by COVID-19 pandemic. This finding is in agreement with a study carried out in Belgium where nurses working in ICUs are more sufferer during COVID-19 outbreak and reported emotional exhaustion, depersonalization, and burnout as well [22].

## CONCLUSIONS

It is concluded that the COVID-19 pandemic has had a significant impact on all aspects of the quality of life of nurses, precisely in physical, psychological and social areas. Study assessed male nurses are more affected than female nurses and married nurses are more victim of harmful effect than single nurses. Furthermore, study observed considerable social support from the family.

## Authors Contribution

Conceptualization: AK

Methodology: AK

Formal analysis: SYS

Writing, review and editing: AK, B, AQ

All authors have read and agreed to the published version of the manuscript.

## Conflicts of Interest

The author declares no conflict of interest.

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