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Original Research Article

Impact on quality of life among health care workers: a case-control study of COVID-19 pandemic situation

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ABSTRACT

Background: Quality of Life (QoL) as an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns.
Methods: A Case-control study was conducted to assess the QoL among health care workers (HCW) during the Covid-19 Pandemic and to compare QOL in cases and controls among HCW. The sample size was calculated to be 98 in each group comes around 196. QOL was assessed by using WHOQOL-BREF scale. The QoL comparison in both Covid-19 positive and negative and its association was done by mean and standard deviation with correlation coefficient using unpaired T test.
Results: Among 196, majority 157 (79.2%) were doctors and 39 (19.8%) were other health care providers like lab technicians and nursing staff. The health care workers with COVID-19 positive were had low QoL than the negative with respect to physical (46.90±9.60 vs 59.01±15.60), psychological (44.51±7.44 vs 51.13±15.68), social (39.82±15.98 vs 56.11±23.92), and environmental (48.33±10.28 vs 57.57±20.22) domains and all the domains showing highly statistically significant result with the P-value <0.001. The correlation coefficient between four domains was statistically significant and with overall QOL and satisfaction on health.
Conclusions: The QoL was poor among COVID-19 positive patients compared to negative with respect to physical, social, psychological, and environmental and age, marital status and occupation during the covid-19 pandemic.

Keywords: Case control study, COVID-19, Health care workers, Quality of life

INTRODUCTION

Coronavirus disease (Covid-19) has led to a global pandemic since its emergence in December 2019. The majority of research into Covid-19 has focused on transmission, and mortality and morbidity associated with the virus. World Health Organization (WHO) defines QOL as "an individual's perception of their position in life in the context of the culture and value systems in which they live and in relation to their goals, expectations, standards and concerns".[1] COVID-19 has created a public health emergency that affect the physical, social, and psychological functioning of individuals and societies.[2,3] The disease also had impact on quality of life (QOL) and the effects on social and human interactions.[4] Literature tells QoL is a significant predictor of persistence in overall health and well-being.[5]

Several studies across the globe had given that the health-related quality of life (HRQOL) is an evaluation of QOL and its relationship with health.[6]

METHODS

A case-control study among the health care workers to assess the Quality of life (QoL) among during the Covid-19 Pandemic situation and to compare the QoL and look for the association among different domains in Covid-19 among cases and controls. The data was collected during the months of 1st March to 30th April 2021. The Covid-19 positive patient confirmed with RTCPCR as inclusion and Control was without affected with Covid-19 in the last one year and those who were not willing to participate were excluded. The sample size was calculated by using the EPI info tool for case control study with the power of 80%, assumed odds ratio of 4, and expected proportions in controls is 0.05 with confidence level of 0.95%. The sample size in each group is calculated to be 98. So, the final sample in both the cases and controls were 196. QOL was assessed by using WHOQOL-BREF scale with physical, psychological, social relationships and environment domains (Total-26 questions).[7] Ethical clearance from was obtained. Participant information sheet and consent form was given to obtain for participation. The mean score of each domain, total score and average score were calculated.

Data collection procedure and analysis

We enlisted department wise all the health care workers and ask them for the informed consent personally or telephonically, once consent was given the questionnaire link will be sent via gmail or whatsapp for filling. Those who are positive for COVID-19 will be taken as cases and negative will be considered as controls in the last one year. The data was entered Microsoft excel sheet for analysis, demographic data was shown in frequencies/proportion, QoL in different domains with respect to Covid-19 pandemic will be displayed in the tabular form. The data was analysed using SPSS version 20.0 statistical software (SPSS, Inc., Chicago, IL, USA) and the comparison of QoL in both Covid-19 positive and negative in the tabular form and the association was done with mean and standard deviation along with correlation coefficient using unpaired T test with P value <0.05.

RESULTS

A total of 196 participants were participated among them 103 (52.5%) males and 93 (47.5%) females respectively. The majority of the participants (Table 1) 93 (47.4%) belong to 31-40 years, 71 (36.2%) were 20-30 years and 36 (16.2%) were more than 41 years respectively. Among the health care workers involved in the study 157 (79.2%) were doctors and 39 (19.8%) were lab technicians and nursing staff. More than 50% of the participants 122 (62.2%) were married and 74 (37.8) were unmarried. In (Table 2) the means and standard deviation (SD) scores of quality of life with respect to different domains among COVID positive and negative by using unpaired T test. The health care workers with COVID-19 positive were had low quality of life than the negative patients with respect to physical (46.90±9.60 vs 59.01±15.60), psychological (44.51±7.44 vs 51.13±15.68), social (39.82±15.98 vs 56.11±23.92), and environmental (48.33±10.28 vs 57.57±20.22) domains and all domains showing statistically significant result (p value <0.001).

Table 1: Socio-demographic distribution of participants.

Age in years	Male	%	Female	%	Total (%)
20-30	26	25.2	45	48.3	71 (36.2)
31-40	59	57.2	34	36.5	93 (47.4)
41-50	18	9.1	11	5.5	29 (12.7)
>50	0	0	3	3.2	7 (3.5)
Total	103	52.5	93	47.5	196 (100)
Occupation					
Doctor	85	86.8	72	73.6	157 (79.2)
Other HCW	13	33.3	26	66.6	39 (19.8)
Total	98	50.0	98	50.0	196 (100)
Marital status					
Married	67	60.3	44	39.6	111 (62.2)
Unmarried	36	42.3	49	57.6	85 (37.8)
Total	103	52.5	93	47.5	196 (100)
Are you affected with corona in the last one year					
Yes	61	62.3	37	37.7	98 (50.0)
No	51	54.1	47	45.9	98 (50.0)
Total	112	58.1	84	41.9	196 (100)

The correlations coefficient (Table 3) of WHOQOL-BREF; between overall QOL (Q1) and patient satisfaction (Q2) on their own health and scores obtained from different domains were statistically significant ($p \leq 0.0001$).

In Figure 1, the comparison of transformed scores (0-100) of the WHOQOL-BREF in four domains (physical:52.9 vs 52.5, psychological 47.8 vs 47.1, social 47.9 vs 48.5 and 52.9 vs 51.8) with respect to male and female and total mean scores (53.3, 48.5, 47.3 and 54.1) respectively. Table 4 showing the mean score and standard deviation of four domains of WHOQOL-BREF according to sex, age, marital status and occupation. The age more than 40 years were having less quality of life scores compare to less than 40 years and it was statistically significant with p value <0.05 with respect to physical, social, environmental domains and the quality of life was not significant and in psychological domain. With respect to marital status those who are married had less QoL in social domain and it is statistically significant and those who are doctors are having poor QoL than other health care workers with p value <0.005.

Table 2: Quality of life with their mean score in 4 domains among COVID positive and negative patients.

Domain	Covid +ve Mean±SD	Covid-ve Mean±SD	P value
Physical	46.90±9.60	59.01±15.60	<0.0001
Psychological	44.51±7.44	51.13±15.68	<0.0002
Social	39.82±15.98	56.11±23.92	<0.0001
Environmental	48.33±10.28	57.57±20.22	<0.0001

Independent samples t test with p value<0.05

Table 3: Correlation coefficient in two overall questions and four domains of WHO QOL-BREF.

	Q1	Q2	Physical domain	Psychological domain	Social domain	Environmental domain
Over all perception of QOL	1	0.428	0.405	0.333	0.338	0.480
		0.0001	<0.000	<0.000	<0.000	<0.000
Individual overall perception of their health		1	0.261	0.329	0.277	0.244
			<0.000	<0.000	<0.000	0.001
Domain-1			1	0.594	0.608	0.716
				<0.000	<0.000	<0.000
Domain-2				1	0.574	0.720
					<0.000	<0.000
Domain-3					1	0.699
						<0.000
Domain-4						1

Q1- How would you rate your quality of life?; Q2- How satisfied are you with your health?

Table 4: Comparison of mean scores in four domains with gender, age, marital status and occupation.

Variable	Physical Mean±SD	Psychological Mean±SD	Social Mean±SD	Environmental Mean±SD
Gender				
Males	52.57±14.21	47.16±12.09	48.52±19.97	51.83±16.29
Females	53.38±14.40	48.54±13.33	47.35±23.89	54.19±17.05
P value	0.69	0.44	0.71	0.32
Age in years				
≤40	51.79±13.26	47.03±12.37	45.36±20.76	51.65±16.30
>40	58.93 ±17.68	51.84±13.68	61.31±22.88	59.62±17.10
P value	0.03*	0.07	<0.001*	0.01*
Marital status				
Married	53.91±14.69	48.79±12.80	53.23±22.16	53.73±16.59
Unmarried	51.70±13.69	46.55±12.49	41.09±19.56	51.94±16.79
P value	0.27	0.22	<0.001*	0.45
Occupation				
Doctor	54.21±12.20	48.95±11.93	49.73±21.13	54.72±14.36
Other HCW	49.66±18.39	44.83±14.15	43.31±23.28	48.29±21.01
P value	0.09	0.06	0.08	0.04*

*P-value<0.05 is significant.

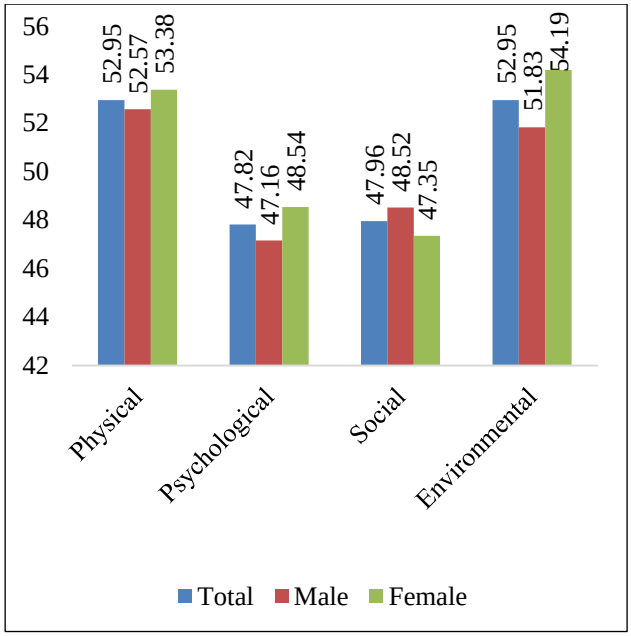

Figure 1: Comparison of transformed scores (0-100) of WHOQOL-BREF in four domains according to gender and total scores.

DISCUSSION

In our study for assessing the QoL amongst involved were doctors and very few were other health care providers like nursing staff and lab technician. The study done by Dhaheri et al also used the same instrument (WHOQOL BREF) for the assessment of the QoL among health care providers.[8] The present study indicates that individual level perception on health and overall QoL of health care workers with respect to different domains like physical, social, psychological and environmental from the impact of COVID-19 were significantly lower. The study done by Lau J T et al during the SARS epidemic in 2003 reported that the quality of life in Hong Kong residents were also low due to psychological and other factors.[9] Its results were consistent with the current study findings as mentioned that different factors like the marital status, employee status also affected the quality of life.

Our study revealed that the QoLwith respect to environmental and physical domain was significantly affected during the pandemic season. The restricted access to training facilities, self-isolation, lock down of the country and not allowing the individuals to do any kind of outdoor activities or exercising will affect the quality of life.[10,12] The study done by Tessitore et al and a systematic review also revealed that effects of social, physical and psychological are the determinants affect the quality of life.[10,11] Our study showed that the social and psychological domains lowers the QoL. Several studies revealed that individuals with psychological cessation, due to the social distancing, quarantine, and isolation.[13-16] Several studies had revealed that the psychological distress that creates more panic and illness which in turn had influence on physical, mental environmental factors which hampers the quality of life.[17-19] The limitation of was use the Google form and not able to interview by face to face because of the pandemic. Our sample were involved more of doctors than the other health care providers were dealing with high risk areas during the pandemic. Thus, our study findings were limiting generalizability of the findings to the all the health care providers.

CONCLUSION

The COVID-19 pandemic has impacted low QOL among health care workers in almost all the domains of physical, psychological social and environmental. Health education about environmental changes, incentivise during the lock down period to overcome the work load and good social relationship may improves the QOL in the health care providers.

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