Original Research Article

Assessment of mental health and quality of life status in health care professionals during COVID-19 in a tertiary care hospital in Jammu, India

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ABSTRACT

Background: COVID-19 pandemic impacted all aspects of life in one way or the other may it be physical, mental or spiritual. The consequences following COVID-19 had a significant effect on quality of life (QOL) of all the people irrespective of caste, creed or religion.
Methods: The present study was conducted among health care professionals (HCPs) in a tertiary care hospital in Jammu city of UT of Jammu and Kashmir. To measure the mental health, DASS-21 scale was used to ascertain the prevalence of depression, anxiety and stress. To assess the quality of life, the tool used was World Health Organisation quality of life scale (WHO QOL- BREF).
Results: The data thus collected was analysed and chi square test was used as a test of significance. A total of 250 health care professionals were assessed and prevalence of depression, anxiety and stress was found to be 51.2%, 18% and 45.2% respectively. Gender was significantly associated with anxiety (p<0.05) while education levels had a statistically significant associated with anxiety and stress (p<0.05). All domains of QOL were found to be on higher side among male health care professionals and respondents living in urban areas. There was a statistically significant association between QOL and level of education (p<0.05).
Conclusions: The study has demonstrated that COVID-19 was negatively related to health care professionals' mental health and QOL. In this context authors recommend targeted interventions to ameliorate both mental health as well as QOL.

Keywords: COVID-19, Health care professionals, Mental health, Quality of life

INTRODUCTION

In the end of 2019 when people were making resolutions for new year, who on the earth had idea that the world will change completely until cluster of pneumonia with unknown etiology was found in city of Wuhan, China. Disease was found to be caused by novel corona virus subsequently named as COVID-19 on 11 February 2020. WHO carried out virtual conference on 11 March and confirmed our fear, COVID-19 was declared pandemic.[1]

This pandemic had brought a significant change in all walks of human life; economic, social, mental and political. COVID-19 has been challenging to people of all spheres of life, but it profoundly affected the life, lifestyle and quality of life of healthcare professionals (HCPs). They were confronted with a greater challenge on the line of duty and path of their mission which demanded high level of motivation and medical care for COVID-19 patients, be it in health institutions or among the community. They also reported experiencing high level of

stress, anxiety and depression symptoms which usually have long term psychological implication.[2] The WHO also emphasized the extremely high burden on healthcare workers, and called for action to address the immediate needs and measures needed to save lives and prevent a serious impact on physical and mental health of healthcare workers.[3] COVID-19 crisis placed additional pressure on healthcare professionals (HCPs) and on the healthcare system in general (owing to reasons like longer duty hours, involvement of high risk procedures, washing hands at regular intervals and being ostracized). The COVID-19 pandemic caused a substantial degree of panic, worry, fear and apprehension.[4]

Review of literature shows there is limited literature about mental health and quality of life among healthcare professionals during this pandemic. The present study was conducted to assess the mental health by estimating the prevalence and severity of mental health symptoms and its impact on quality of life during COVID-19 pandemic among HCPs working at GMC-H Jammu.

METHODS

The present research was a cross-sectional study with a purposive sampling technique. Data was collected from November 2020 to October 2021. The study was conducted among health care professionals (HCPs) working in a tertiary care hospital in Jammu city of UT of Jammu and Kashmir. For the study purposes HCPs were defined as those who deliver care services to the sick and ailing either directly as doctors/nurses or indirectly as aides, helpers, lab technicians etc.

Due permission was sought from institutional ethical committee (IEC) GMC Jammu (via order no: IEC/GMC/2021/672) before the start of the study. The inclusion criterion in this study were all the health care professionals working in a tertiary care hospital and were willing to participate. The following were the exclusion criteria for the current study: 1) the HCPs who were taking medicines for psychiatric ailments. 2) Those who had undergone surgery/ hospitalization in last six months. 3) Those who had mortality in the family in last six months.

The study was carried out once in a week with 5-6 interviews conducted on a daily basis and each interview lasting about 30 minutes. So, at the end of the study period a total of 250 HCPs were finally enrolled.

The instrument used in the study was a questionnaire consisting of 3 parts. The first part contains socio-demographic data and information about COVID-19. The second part consisted of depression, anxiety and stress scale-21 (DASS-21), designed to measure the emotional states of depression, anxiety and stress. The third part of the questionnaire was World Health Organization quality of life scale (WHOQOL-BREF). It comprises of 26 items which measure the four domains: physical health,

psychological health, social relationships and environment.

The data thus collected was entered into Excel spread sheet. Tests of significance like chi square test, t-test and ANOVA were used. A statistically significant difference between groups was determined at 95% confidence level (p value <0.05).

RESULTS

Figure 1 shows age group and gender wise distribution of the respondents. The mean age of the study population was 41±9.66 years. Females constituted higher proportions than males (57.2% versus 42.8%). Majority of the respondents belonged to 41-50 years of age group in males and 31-40 age group in females.
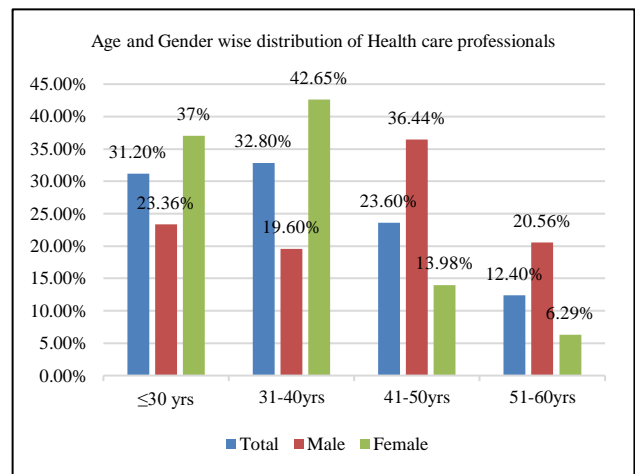

Figure 1: Age and gender wise distribution of study participants.

Table 1 shows the distribution of HCPs on the basis of various socio-demographic characteristics. Overall, a total of 250 individuals were surveyed during the course of the study, out of which majority (74.8%) of the respondents were married, 23.20% of the subjects were unmarried and more than half of the participants (60.4%) hailed from urban background. almost 2/3rd of study population was educated up to graduate and post graduate level (30% and 36% respectively). Only 11.2% of respondents were literate up to primary level. On the basis of job profile, most (43.6%) of the HCPs were doctors followed by paramedics (31.6%). Most (41.6%) of the HCPs were from para clinical and non-clinical departments, about 36% of the participants were from clinical department. Almost half of the participants had worked for <10 years in their respective departments and majority (88%) of the participants had no co-morbidity.

As evident from above Table 2, the overall prevalence of depression, anxiety and stress was 51.2%, 18% and 45.2% respectively among the study participants.

Table 1: Distribution of study participants on the basis of Socio-demographic characteristics.

Socio-demographic variables	No. of HCPs n=250	Percentage
Marital status		
Married	187	74.8
Unmarried	58	23.2
Widowed	5	2
Residence		
Rural	99	39.6
Urban	151	60.4
Level of education		
Primary	28	11.2
Secondary	22	8.8
Higher secondary	32	14.0
Graduate	75	30
Post graduate	90	36
Job profile		
Doctor	109	43.6
Paramedics	79	31.6
Nurse	53	21.2
Other	9	3.6
Current working department		
Flu-OPD	14	5.6
ICU	25	10
Isolation ward	22	8.8
Other clinical departments	85	34
Non-clinical and para-clinical department	104	41.6
Duration of service (years)		
≤10	146	58.4
11-20	79	31.6
>20	25	10
Co-morbidity		
Present	30	12
Absent	220	88

Table 2: Overall prevalence of depression, anxiety and stress among health care professionals (N=250).

	Depression (%)	Anxiety (%)	Stress (%)
Present	128 (51.2)	45 (18)	113(45.2)
Absent	122 (48.8)	105 (42)	137(54.8)
Total	250 (100)	250 (100)	250(100)

Figure 2 depicts, 29.2% of the study population had mild depression and 18.0% had moderate degree of depression where as 3.6% had severe depression. Only 0.4% of respondents had extremely severe degree of depression and 12.4% of the study subject had mild anxiety and 40% had moderate degree of anxiety. As evident from table, 30.8% study subject had mild stress and moderate level of stress was found in 10.4%. Only 4% respondent had extreme severe degree of stress.
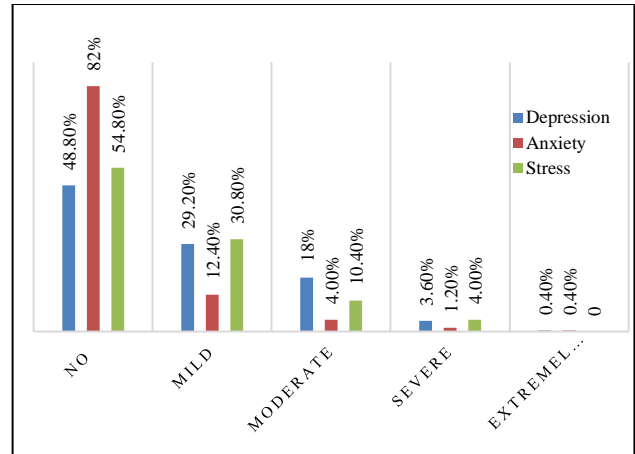

Figure 2: Distribution of health care workers on the basis of severity of depression, anxiety and stress.
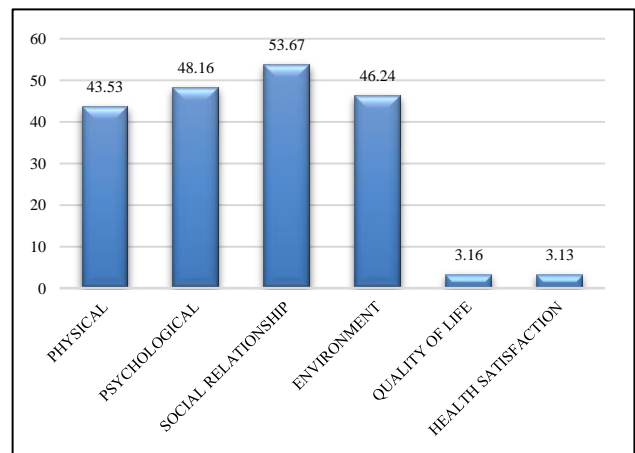

Figure 3: Mean scores of Health care workers across various domains of quality of life.

Table 3 shows the association between different socio-demographic variables with depression, anxiety and stress among respondents. Depression was found to be more in age group 41-50 years (64.40%) while anxiety (23%) and stress (52.5%) were found to be more in age group ≤30 years, only depression was found to be significantly associated with age. Analysis of results showed that females reported higher levels of distress and gender and it was found to be associated with anxiety ($p<0.05$). Prevalence of depression, anxiety and stress was reported higher in participants hailing from urban areas and those with higher level of education. On the basis of job profile and current working department, depression was reported higher among nurses and those working in ICU (56.60%, 72%), higher level of anxiety was found in doctors and professionals working in Flu-OPD's (27.52%, 42.85%). Stress was found to be more in paramedics staff and those working in isolation ward (77.21%, 63.63%). Although the prevalence of co-morbidity was lower, psychological distress was reported higher in participants with any existing health condition and this association was statistically significant in case of depression and anxiety.

Table 3: Association of various socio-demographic variables with depression, anxiety and stress.

Socio-demographic variable	Depression (n=128) N (%)	Anxiety (n=45) N (%)	Stress (n=113) N (%)
Age (years)			
≤30	42 (53)	18 (23.0)	41 (52.5)
31-40	35 (42.68)	12 (14.63)	32 (39.0)
41-50	38 (64.40)	9 (15.25)	27 (45.76)
51 and above	13 (41.93)	6 (19.35)	13 (41.93)
χ^2	7.78	2.33	3.11
P value	0.049*	0.51	0.37
Gender			
Male	49 (45.79)	13 (12.14)	43 (40.18)
Female	79 (55.24)	32 (22.37)	70 (48.95)
χ^2	2.19	4.34	1.90
P value	0.14	0.037*	0.168
Marital status			
Single	28 (48.27)	10 (17.24)	29 (50)
Married	97 (51.87)	34 (18.18)	83 (56.1)
Widowed	3 (60)	1 (20)	2 (40)
χ^2	0.13	0.016	0.643
P value	0.714	0.897	0.422
Residence			
Rural	48 (48.4)	14 (14.1)	43 (43.4)
Urban	80 (52.9)	31 (20.52)	70 (46.3)
χ^2	0.483	1.65	0.20
P value	0.48	0.09*	0.32
Level of education			
Primary	13 (46.42)	3 (10.71)	15 (53.57)
Secondary	8 (36.30)	0 (0)	3 (13.63)
Higher Secondary	20 (57.14)	3 (8.57)	15 (42.85)
Graduate	38 (50.66)	14 (18.60)	36 (48)
Post graduate	49 (55.68)	27 (28.40)	44 (50)
χ^2	3.076	16.09	10.45
P value	0.545	0.003*	0.033*
Job profile			
Doctor	55 (50.4)	30 (27.52)	54 (49.54)
Paramedics	40 (50.63)	7 (8.86)	61 (77.21)
Nurse	30 (56.60	7 (3.20)	28 (52.83)
Other	3 (33.33)	1 (11.11)	6 (66.66)
χ^2	1.803	12.28	15.96
P value	0.614	0.006*	0.001*
Duration of service (years)			
≤10	72 (49.31)	28 (19.1)	73 (50)
11-20	44 (55.69)	28 (19.1)	73 (50)
>20	12 (48)	12 (15.15)	31 (39.24)
χ^2	0.946	0.627	3.345
P value	0.622	0.731	0.188
Current working department			
Flu-OPD	9 (64.28)	6 (42.85)	7 (50)
ICU	43 (50.58)	7 (8.23)	30 (35.29)
Isolation ward	18 (72)	5 (20)	14 (56)
Other clinical departments	13 (59.09)	5 (22.72)	14 (63.63)
Non-clinical and para-clinical department	45 (43.26)	22 (21.15)	48 (46.15)
χ^2	8.467	12.45	7.732
P value	0.0758	0.014*	0.102
Co-morbidity			
Present	21 (70)	25 (83.33)	15 (50)
Absent	108 (49.09)	40 (18.18)	98 (44.54)
χ^2	4.144	58.24	0.317
P value	0.042*	<0.001*	0.573

*Statistically significant

Table 4: Association of socio-demographic profile with various domains of quality of life among the health care workers.

Age distribution (years)	Physical health Mean±SD	Psychological Mean±SD	Social relationship Mean±SD	Environment Mean±SD	Quality of life as rated by respondents Mean±SD	Health satisfaction as rated by respondents Mean±SD
Age distribution (years)						
≤30	43.94±12.87	50.14±13.92	32.97±29.67	44.57±13.80	3.25±0.74	3.25±0.74
31-40	44.01±11.03	48.65±13.86	62.25±26.27	47.14±13.61	3.30±0.764	3.20±0.79
41-50	41.44±11.07	44.62±14.86	63.94±23.40	45.84±13.79	3.00±0.96	3.05±0.70
51-60	44.94±12.90	49.05±16.10	63.13±24.75	49.21±14.54	2.84±0.75	2.81±0.56
P value	0.478	0.153	0.0004*	0.391	0.014*	0.014*
Gender						
Male	46.37±12.34	50.60±14.59	59.73±28.25	49.04±14.33	3.10±0.83	3.22±0.79
Female	43.92±11.89	48.51±13.89	51.14±29.25	45.73±13.13	3.20±0.71	3.02±0.70
P value	0.11	0.39	0.02*	0.06	0.33	0.004*
Marital status						
Single	43.48±11.1	47.93±15.75	62.90± 24.26	46.27±13.85	3.17±0.81	3.10±0.73
Married	43.03±13.43	49.93±10.30	27.22±29.06	47.18±13.69	3.22±0.72	3.28±0.76
Widowed	41.40±13.24	36.40±11.23	15.00±21.04	34.00±17.63	2.00±1.00	2.60±0.89
P value	0.901	0.129	0.000*	0.127	0.005*	0.084
Level of education						
Primary	45.00±12.15	46.39-17.29	52.64-29.86	48.25-16.70	2.79-0.83	3.07-0.81
Secondary	45.86±12.76	53.63-15.97	73.90-14.47	50.22-15.06	3.43-0.63	3.23-0.6
Higher secondary	44.45±12.84	45.77-16.02	59.42-29.60	46.60-13.37	3.22-0.94	3.05-0.59
Graduate	41.89±10.93	48.28-12.55	44.04-31.12	43.84-13.70	3.18-0.92	3.01-0.81
Post graduate	43.40±11.71	48.17-14.15	54.82-28.80	46.57-13.08	3.38-0.59	3.23-0.74
P value	0.680	0.489	0.001*	0.446	0.002*	0.207
Job profile						
Doctor	44.64±12.5	49.18±13.46	47.38±30.19	16.44±12.62	3.29±0.65	3.19±0.74
Paramedics	47.13±12.3	48.20±15.85	61.56±26.15	45.67±15.42	3.19±0.72	3.12±0.75
Nurse	42.07±11.1	48.88±12.70	56.28±28.36	47.58 ±13.25	3.11±0.933	3.00±0.733
Other	48.00±11.8	49.50±14.66	68.75±22.20	52.83±13.40	3.41±0.79	3.166±0.834
P value	0.713	0.036*	0.019*	0.005*	0.000*	0.015*
Duration of service						
<10 years	46.00±31.67	46.29±13.7945	43.99±11.84	50.00±13.54	3.28±0.794	3.25±0.75
11-20 years	464.40±21.8	35±13.00	42.11±11.38	44.60±15.27	3.03±0.82	2.96±0.72
>20 years	64.56±29.0	48.72±17.57	45.32±14.39	48.72±17.46	2.84±0.80	2.96±0.73
P value	40.392	40.030*	0.000*	0.576	0.012*	0.010*
Current working department						
Flu-OPD	45.85±11.12	52.28±12.60	49.57±25.86	47.07±13.39	3.43±0.75	3.35±0.63
Clinic	43.62±12.28	48.51±14.48	58.44±29.05	46.04±14.24	3.23±0.88	3.3±0.740
ICU	39.24±11.07	42.44±15.00	39.04±24.71	38.48±12.73	2.40±0.86	2.48±0.65
Isolation ward	40.86±11.88	47.18±11.58	60.50±21.06	49.63±11.52	3.18±0.66	3.04±0.72
Others	44.74±11.93	48.91±15.44	52.39±32.85	47.43±14.09	3.24±0.68	3.13±0.72
P value	0.207	0.256	0.044*	0.041*	0.000*	0.000*

*Statistically significant

Figure 3 shows the mean (SD) scores across various domains of quality of life (QOL). The result revealed that respondents have scored maximum mean scores (53.67%) in domain of social relationship.

Analysis of association of socio-demographic profile with various domains of quality of life among the health care workers showed that social relationship had significant association with all the sociodemographic characteristics. Job profile and duration of service were seen to have

statistically significant association with psychological domain of quality of life (Table 4).

DISCUSSION

The mean age of the study population was 41±9.66 years and majority of the respondents were in 31–40-year age group. These findings are in agreement with those reported by Zhang et al.[5]

Regarding prevalence of psychiatric morbidities among the respondents it was 51.2%, 18% and 45.2% for depression, anxiety and stress respectively. These results are in consonance with those reported by young et al, Zhang et al and Rossi et al but were in contrast to the findings reported by Aly et al, Suryavanshi et al and Tan et al.[6-11] The probable difference reported by various authors is likely to be use of different tools in different geographical areas and population.

The results further revealed that female health care professionals suffered higher levels of psychiatric morbidities (depression, anxiety and stress) than their male counterparts and these findings were ably supported by Tomar et al.[12] The possible reason for higher levels of psychiatric morbidities in females could be due to increased physiological vulnerability and not able to handle higher levels of stress in an efficient manner.

During the present study, it was found that association of level of education with anxiety and stress was statistically significantly (p<0.05) and it was in line with the results reported by Xie et al.[13] It was also found that doctors (half of the respondents) had higher levels of anxiety while stress levels were more in paramedics and depression was found to be high in nurses. All this could be related to COVID-19 related care, being in touch with them besides increased hours.

Prevalence of depression was found to the tune of 72% in the respondents working in ICU and results were statistically significant for association between anxiety and current working department. These results are in consonance with that reported by Tomar et al.[12]

The scoring in all domains of QOL was on higher side in male respondents and association of gender was to be statistically significant (p<0.05) with social relationship and health satisfaction. The results were in agreement to those reported by Hawalder et al.[14] The results also revealed significant association between QOL and level of education. However, Zhang et al reported contrasting results while assessing QOL among local residents in Liaoning province of china.[5]

The scores of various domains of QOL were better in respondents who had no contact with COVID 19 positive patients and who themselves tested negative for COVID-19. Similar findings were reported by Shah et al.[15] The results also elucidated better scores in all domains of QOL in respondents who were residing in urban areas and it was in consonance with those reported by Hawlader et al.[14]

CONCLUSION

Prevalence of depression, anxiety and stress was found to be 51.2%, 18% and 45.2% respectively among the health care professionals. Age and co-morbidity were significantly associated with depression while literacy level and job profile were statistically associated with anxiety and stress. Variable found to have statistical association with QOL were job profile, duration of service, current working department and thought of resignation from job due to COVID-19 pandemic. Authors recommend that health planners evolve strategies to combat mental health problems and improve QOL of HCPs by rationalizing work load, allowing adequate breaks and counselling sessions as and when required.

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