Anxiety, depression and quality of life (QOL) related to COVID-19 among frontline health care professionals: A multicentric cross-sectional survey

Suresh K Sharma[1], Shiv K Mudgal[2], Kalpana Thakur[3], Aashish Parihar[4], Digpal Singh Chundawat[5], Jaydeep Joshi[6]

[1]Professor & Principal, College of Nursing, All India Institute of Medical Sciences, Jodhpur, Rajasthan, India, [3]PhD Scholar, College of Nursing All India Institute of Medical Sciences, Rishikesh, Uttarakhand, India, [2]Professor and Principal, Akal College of Nursing, Eternal University, Himachal Pradesh, India, [4]Assistant Professor, College of Nursing All India Institute of Medical Sciences, Jodhpur, Rajasthan, India, [5]Senior Nursing Officer, All India Institute of Medical Sciences, Bhopal, Madhya Pradesh, India, [6]Registered Mental Health Nurse, Huntercombe Manor Hospital, Huntercombe Ln S, Taplow, Maidenhead SL6 0PQ, United Kingdom

Abstract

Background: During this pandemic everyone is facing the wrath of this novel coronavirus but nurses who are meticulously working in closed contact with diseased are at more risk for developing anxiety, depression and compromised quality of life. This study was conducted with an intent to identify anxiety, depression and quality of life and its predictors among nurses who are actively involved in caring of COVID-19 patients. **Methods:** A cross-sectional online survey was carried out among nurses who were actively involved in COVID-19 duties at government tertiary health care institutes of India and data was collection through convenience sampling. Standardized tools (HADS, WHOQOL-BREF) were preferred for the assessment of participants' anxiety, depression and quality of life. Multivariate regression analysis was used to identify predictors for anxiety and depression. **Results:** Of 354 nurses, 12.1% were suffering from anxiety while 14.7% had depression. Mean score for physical, psychological, social and environmental domains were 14.75 ± 1.86, 14.92 ± 2.46, 15.21 ± 3.01, and 14.48 ± 2.38 respectively. Nurses' education was a significant predictor for anxiety (odds ratio [OR] = -0.262, 95% CI: -0.510- -0.014, and *P* value = 0.038). Similarly for depression, designation of nurses acts as a contributing factor (odds ratio [OR] = 0.287, 95% CI: 0.016- 0.557, and *P* value = 0.038). **Conclusion:** Nurses are providing their services beyond boundaries so that we can overcome with hard time of COVID-19 pandemic. Although less but still nurses are suffering from anxiety and depression which need to be addressed to protect and enhance their mental well-being.

Keywords: Healthcare professionals, psychological discomfort, psychological health, quality of life, somatic symptoms, well-being

Address for correspondence: Prof. Suresh K. Sharma, Professor and Principal, College of Nursing, All India Institute of Medical Sciences, Jodhpur - 342 005, Rajasthan, India.
E-mail: skaiims17@gmail.com

Access this article online

Introduction

Health care sector is possessed by a global pandemic caused by deadly coronavirus subsequently named as SARS-CoV-2 with the first case reported in Wuhan, China in December 2019[1] which later became ubiquitous with mushrooming of cases day

How to cite this article: Sharma SK, Mudgal SK, Thakur K, Parihar A, Chundawat DS, Joshi J. Anxiety, depression and quality of life (QOL) related to COVID-19 among frontline health care professionals: A multicentric cross-sectional survey. J Family Med Prim Care 2021;10:1383-9.

by day instead of all preventive strategies. In India, first case of COVID-19 was reported on 3ʳᵈ January 2020[1] and since then government and people of the country is trying all possible efforts to put a break on this chain of COVID-19 spread but no downfall in cases have been reported yet with the recent report of more than 85 thousand new cases per day. This rapid progress in number of cases with reported deaths bring out intense panic with feeling of fear and apprehension.

Nurses have always been a frontline care providers in health care sector but this time remarkable professional service to public along with keeping their personal life at stake represented them as a warrior globally. Although, government and hospitals administration are trying their best to provide all necessary facilities to health care providers but suspicion of getting contracted, long working hours, lack of resources along with isolation from family and friends are all heart wrenching and difficult to deal with. Although, there is no systematic reporting system for tracking COVID-19 cases and associated mortality among health care workers but a recent published report stated that around 1.8% of the health care workers were tested positive[2] and those who are posted in high-risk units are at more risk for getting positive for COVID-19.

Emotional toll on the nurses is on the rise because they are providing emotional support to those diagnosed with COVID-19 and admitted in the hospital without family and closed ones by their sides. Situation is alarming as nurses are witnessing massive amount of grief, sorrow and deaths during this period which make them vulnerable for burnout, stress, anxiety, depression and post-traumatic stress disorder. Earlier studies done on SARS pandemic also reported presence of somatoform disorder and depression among nurses.[3-6] Recent studies report from India[7-9] and other countries[10-12] have reported strong evidence for presence of stress, burnout, anxiety, and depression with compromised quality of life among nurses caring for COVID-19 patients. Findings from a recent systematic review also suggested that there was significant level of anxiety, fear and depression among general population[13] and health care workers.[13,14]

Nurses are of no good to anyone if they themselves are not healthy and that is why it is of prime importance to provide them with mental health resources, resilience training, and counselling in abundance. Although few studies have been performed to explore anxiety and depression among nurses but majority of them were done in early exposure time of this pandemic and available data is still scarce. Therefore, we planned to conduct an online survey to explore anxiety, depression and quality of life and its predictors among nurses who are actively involved in caring of COVID-19 patients with an intention to put forward the reliable data that could be utilized for planning further interventions to improve mental well-being among nurses.

Materials and Methods

Study design and participants

A cross-sectional online survey was carried out among nurses who were actively involved in COVID-19 duties at government health care institutes of India. Web-based survey with the Google Form was used for data collection through convenience sampling. Online questionnaire included standardized tools for the assessment of participants' anxiety, depression and quality of life. Survey link was shared and circulated among nurses via official E-mails, WhatsApp groups, Facebook and other social media. Informed consent form and involvement in COVID-19 duties were the two important pre-requisite for participation in the study. Whosoever were not involved in care of COVID-19 patients and not willing to participate was not permitted to fill the form for further assessment. Data was collected during the month of May to July 2020 and no reward or incentives were given for participation. Participating nurses were aware of their right to withdraw at any point of time and anonymity of the information was taken care by researchers.

Ethical approval for the study was given by institutional ethical committee of All India Institute of Medical Sciences, Rishikesh vide approval No. AIIMS/IEC/20/288; dated 22/05/2020 and adhered to Helsinki Declaration.

Study instruments

Data collection questionnaire, consisted of four main components-demographic details, screening for anxiety, depression and quality of life assessment. Demographic characteristics includes information on age, gender, marital status, education, designation, area of work, working hours, experience in nursing, place of residence, and presence of any illness. For screening of anxiety and depression, Hospital Anxiety and Depression Scale (HADS)[15] was used which is a standardized tool comprised of total 14 items i.e. 07 for anxiety and 07 for depression assessment which includes both positive and negative statements. All the statements were scored on 4-point Likert scale (0 to 3) and the participants were instructed to tick on the closest and immediate response about how they feel. On HADS, Score of 0-7 are considered as 'normal', 8-10 as 'borderline' and 11-21 as abnormal anxiety or depression. Nurses' perception on their quality of life was assessed with WHOQOL-BREF version[16] involves 26 items measured on 5-point likert scale for the quality assessment on domains like physical health, psychological health, social relationships, and environment. Standardized method was used and obtained raw scores were converted into transformed score to range within 4-20 for making it comparable with WHOQOL-100. All the domains are scored in positive line and higher scores indicate better quality of life; therefore, mean score of all the domains are calculated and compared to explore nurses' quality of life. Reliability of the tools were well established and impressive i.e. 0.92 for HADS anxiety, 0.88 for HADS depression and 0.9 for WHOQOL-BREF.

Sample size was calculated by using formula,[17] $n = \{(Z1-\alpha/2)^2 (p) (q)\}/d^2$ where prevalence rate for assessment of anxiety and depression among nurses during COVID-19 was

considered 40% as reported in earlier study.[8] Hence, calculated sample size came out to be 406 by considering 10% dropout. Response rate was 94% (of 406 nurses) and total 382 nurses participated and responded to this online survey. We excluded 28 responses as participants took less than 2 minutes to mark and submit their responses and we considered them unreliable. Final statistical analysis was performed on data received from 354 study participants.

Statistical analysis

IBM SPSS Statistics version 23.0 is used for statistical analysis where both descriptive and inferential statistics were used. Frequency and percentage was calculated for demographic variables, anxiety and depression. Mean and standard deviation was considered for assessment of nurses' quality of life score in all domains. Independent t-test was used to find association of demographic variables with quality of life and paired t-test was used to find inter-domain association. Multivariate regression analysis were used to explore the predictors of anxiety and depression.

Results

A total of 382 nurses agreed and gave their consent for participation in this online survey. Of which, 28 respondents took less than 2 minutes to complete the survey and similar responses were marked by them for maximum number of questions. Therefore, such participants were excluded and data from 354 nurses were included in final analysis of this study.

Of the 354 nurses, 241 (68.1%) were male and 113 (31.9%) were female. The study population comprised of a relatively younger group so, the mean age of the participant was 28.78 ± 4.32, of whom majority 298 (84.2%) were in the age group of 25-35 years followed by 33 (9.3%) aged less than 25 years and 23 (6.5%) aged more than 35 years. A little more than half i.e., 199 (56.2%) nurses were married and 155 (43.8%) were unmarried. Very few nurses, 37 (10.5%) were diploma holders and around 317 (89.5%) had professional degree in nursing. Nursing officers formed the major proportion (308; 87%) and remaining 46 (13%) were senior nursing officers. Around 241 (68.1%) nurses had less than five years of professional experience. There were 275 (77.7%) nurses working in COVID-19 in-patient unit and only 79 (22.3%) were working in out-patient screening unit, of whom 190 (53.7%) were working for more than 8 hours in a day. Nurses staying outside campus were more in number, i.e. 293 (82.8%). Of all, only 09 (2.5%) nurses reported that they have health issues.

Among 354 total participants, 247 (69.8%) did not experience symptoms of anxiety but there were around 107 (30.2%) who were suffering from anxiety, among which 64 (18.1%) were found to be borderline abnormal and 43 (12.1%) were abnormal or experiencing severe anxiety as they scored higher on anxiety assessment scale. While exploring depression among study participants, there were 116 (32.8%) nurses experiencing depression where 64 (18.1%) were borderline abnormal and

52 (14.7%) had severe symptoms or abnormal as per depression scores. Mean scores for anxiety and depression were 5.75 ± 3.95 and 5.73 ± 3.92, respectively. [Table 1] Multivariate regression model was used to identify the predictors for nurses 'anxiety and depression. Nurses' education was found to be the only significant predictor for their anxiety (odds ratio [OR] = –0.262, 95% CI: –0.510- –0.014, and *P* = 0.038). Similarly for depression, designation of nurses acts as a contributing factor because participants who working as a nursing officer were more in number for depression status (odds ratio [OR] = 0.287, 95% CI: 0.016- 0.557, and *P* = 0.038). Other demographic characteristics of nurses including gender, marital status, area of work, working hours, experience in nursing, place of residence, and history of any illness were not related to the nurses' anxiety and depression level [Table 2].

Quality of life among nurses working in COVID-19 units were explored with WHOQOL-BREF and it was found that the transformed mean score for all the four domains i.e. physical, psychological, social and environmental were 14.75 ± 1.86, 14.92 ± 2.46, 15.21 ± 3.01, and 14.48 ± 2.38, respectively. [Table 3] Mean scores of nurses on all domains clearly depict that quality of life was not much affected as they rated high scores for their perception of quality living. Paired *t* test was used to find the association between scores of all four domains and it was found that nurses' physical and psychological domains were not associated with each other but rest of the domains had significant association with each other at *P*<.05. Nurses' marital status was a significant factors contributing towards impairment in their psychological domain (*P* = 0.008) and social domains (*P* = 0.000). Moreover, social domain also has significant associated with experience in nursing (*P* = .038) and physical domain has shown significant association with nurses' present health or illness status (*P* = .031) [Tables 4 and 5].

Discussion

Nurses working and caring for COVID-19 patients during this pandemic are continuously feeling stressed because of apprehension and uncertainty associated with this fatal and contagious disease. A recent study has reported that in around 3000 health care workers were contracted with this novel coronavirus and 22 of them lost their life[18] and such sort of data enhances distress and therefore, anxiety along with somatic symptoms are commonly experienced by nurses. This study explored the anxiety, depression and quality of life among nurses who are involved in care of COVID-19 patients and our findings are concluded into

Table 1: Frequency and Percentage of participants' Anxiety and Depression (*n*=354)

Categories of Score	Anxiety Score	Depression Score
Normal (0-7)	247 (69.8)	238 (67.2)
Borderline Abnormal (8-10)	64 (18.1)	64 (18.1)
Abnormal (11-21)	43 (12.1)	52 (14.7)
Mean±SD	5.75±3.95	5.73±3.92

Table 2: Level of anxiety and depression depending on different characteristics of nurses (Multivariate regression analysis) (n=354)

Demographic Characteristics	Anxiety					Depression				
	Normal f (%)	Borderline f (%)	Abnormal f (%)	OR (95% CI)	P	Normal f (%)	Borderline f (%)	Abnormal f (%)	OR (95% CI)	P
Gender										
Male	175 (72.6)	36 (14.9)	30 (12.5)	0.054 (-0.109-0.216)	0.516	160 (66.4)	47 (19.5)	34 (14.1)	-0.005 (-0.178-0.167)	0.952
Female	72 (63.7)	28 (24.8)	13 (11.5)			78 (69.0)	17 (15.1)	18 (15.9)		
Marital Status										
Married	148 (74.4)	29 (14.6)	22 (11.0)	0.103 (-0.066-0.273)	0.232	133 (66.8)	37 (18.6)	29 (14.6)	0.015 (-0.166-0.195)	0.873
Unmarried	99 (63.9)	35 (22.6)	21 (13.5)			105 (67.7)	27 (17.4)	23 (14.9)		
Education										
Diploma	22 (59.5)	07 (18.9)	08 (21.6)	-0.262 (-0.510--0.014)	0.038*	22 (59.5)	10 (27.0)	05 (13.5)	-0.106 (-0.369-1.58)	0.431
Degree	225 (71.0)	57 (18.0)	35 (11.0)			216 (68.1)	54 (17.1)	47 (14.8)		
Designation										
Nursing Officer	216 (70.1)	55 (17.9)	37 (12.0)	0.206 (-0.049-0.460)	0.113	213 (69.1)	52 (16.9)	43 (14.0)	0.287 (0.016-0.557)	0.038*
Senior Nursing Officer	31 (67.4)	09 (19.6)	06 (13.0)			25 (54.3)	12 (26.1)	09 (19.6)		
Area of Work										
In-Patient COVID-19 Unit	194 (70.5)	48 (17.5)	33 (12.0)	0.049 (-0.132-0.230)	0.595	186 (67.6)	48 (17.5)	41 (14.9)	0.002 (-0.191-0.195)	0.984
Out-Patient COVID-19 Unit	53 (67.1)	16 (20.2)	10 (12.7)			52 (65.8)	16 (20.3)	11 (13.9)		
Working Hours										
<8 h	114 (69.5)	28 (17.1)	22 (13.4)	-0.049 (-0.202-0.104)	0.528	106 (64.6)	32 (19.5)	26 (15.9)	-0.105 (-0.267-0.058)	0.206
>8 h	133 (70.0)	36 (18.9)	21 (11.1)			132 (69.5)	32 (16.8)	26 (13.7)		
Experience in Nursing										
<5 Years	163 (67.6)	47 (19.5)	31 (12.9)	-0.121 (-326-0.084)	0.246	165 (68.4)	38 (15.8)	38 (15.8)	-0.112 (-0.330-0.106)	0.312
>5 Years	84 (74.3)	17 (15.1)	12 (10.6)	-0.071		73 (64.6)	26 (23.0)	14 (12.4)		
Place of Residence										
Inside Campus	41 (67.2)	11 (18.0)	09 (14.8)	(-0.265-0.123)	0.471	38 (62.3)	10 (16.4)	13 (21.3)	-0.149 (0.355-0.057)	0.155
Outside Campus	206 (70.3)	53 (18.1)	34 (11.6)			200 (68.3)	54 (18.4)	39 (13.3)		
Are you suffering from any illness?										
Yes	04 (44.5)	03 (33.3)	02 (22.2)	-0.366 (-0.829-0.107)	0.130	05 (55.6)	02 (22.2)	02 (22.2)	-0.244 (-0.742-0.253)	0.334
No	243 (70.4)	61 (17.7)	41 (11.9)			233 (67.5)	62 (18.0)	50 (14.5)		

*P<0.05 is statistically significant

two major results: status of nurses' anxiety, depression, quality of life and predictors or factors affecting all of them.

Table 3: Domain wise Mean and standard deviation of Nurses' quality of life score (*n*=354)

Domains	Raw Score		Transformed Score (4-20)	
	Mean±SD	Min-Max Score	Mean±SD	Min-Max Score
Physical	25.89±3.17	13-33	14.75±1.86	7-19
Psychological	22.41±3.69	9-30	14.92±2.46	6-20
Social	11.40±2.24	3-15	15.21±3.01	4-20
Environmental	28.46±4.79	10-40	14.48±2.38	5-20

Table 4: Paired *t*-test to find out the association between four domains of WHOQOL-BREF (*n*=354)

Domains	Mean	SD	95% CI		*t*-test	Sig. (2 tailed)
			Lower	Upper		
Domain 1-Domain 2	-0.169	1.820	-0.359	0.208	-1.752	0.081
Domain 1-Domain 3	-0.454	2.597	-0.726	-0.183	-3.294	0.001*
Domain 1-Domain 4	0.276	1.804	0.088-	0.465	2.887	0.004*
Domain 2-Domain 3	-0.285	2.206	-0.515	-0.547	-2.433	0.015*
Domain 2-Domain 4	0.446	1.854	0.252-	0.640	4.529	0.000*
Domain 3-Domain 4	0.731	2.606	0.459-	1.004	5.282	0.000*

*p<0.05 is statistically significant

Everyone's mental health is affected to some level during this pandemic but for nurses working with COVID-19 patients, this situation is not less than a war because they see lot of pain, suffering and deaths on regular basis. Our study findings clearly indicate that around 18.1% nurses were at borderline for their experience of anxiety and depression but the more tragic point to note was that there were nurses who had severe anxiety (12.1%) and depression (14.7%) which require further assessment and treatment. Our study results were somewhere in line with another study done by Wilson W *et al.*[7] who reported 11.4% depression and 17.7% anxiety cases among health care workers. On the contrary, Swapnil *et al.*[19] concluded high prevalence rate for HCWs anxiety i.e., 64.60% but the rate of depression reported were similar to our results. Study findings from other countries had presented alarming data where huge number of nurses and physicians are suffering from high-level stress, anxiety and depression during this pandemic[6,11,20] but surprisingly the same is not true in Indian scenario. Although, there were nurses experiencing anxiety and depression but the number is comparatively less and reason could be the habit of Indian nurses to handle patient overload and long working hours.

Mental well-being is very crucial as it contributes a lot in persons' quality of life and nurses in this pandemic time need to be

Table 5: WHOQuality of Life-BREF mean scores depending on different characteristics of nurses (*n*=354)

Demographic Characteristics	Mean±SD			
	Physical Domain	Psychological Domain	Social Domain	Environmental Domain
Gender				
Male	14.85±1.84	15.02±2.53	15.37±3.021	14.60±2.42
Female	14.55±1.88	14.74±2.29	14.87±2.96	14.22±2.29
p	0.161	0.330	0.137	0.157
Marital Status	14.85±1.61	15.24±2.41	15.84±2.73	14.64±2.19
Married	14.64±2.13	14.53±2.48	14.40±3.16	14.28±2.60
Unmarried	0.279	0.008*	0.000*	0.165
Designation				
Nursing Officer	14.79±1.82	14.89±2.45	15.13±3.01	14.41±2.37
Senior Nursing Officer	14.56±2.11	15.17±2.56	15.74±2.92	14.93±2.47
p	0.447	0.471	0.205	0.168
Area of Work				
In-Patient COVID-19 Unit	14.70±1.92	14.97±2.56	15.20±3.17	14.52±2.46
Out-Patient COVID-19 Unit	14.95±1.60	14.78±2.08	15.26±2.37	14.35±2.11
p	0.304	0.554	0.841	0.555
Working Hours				
<8 h	14.83±1.71	14.97±2.39	15.41±2.79	14.46±2.25
>8 h	14.70±1.97	14.89±2.52	15.04±3.18	14.50±2.49
p	0.515	0.743	0.246	0.886
Experience in Nursing				
<5 Years	14.73±1.89	14.77±2.40	14.99±3.01	14.40±2.37
>5 Years	14.81±1.78	15.25±2.58	15.70±2.95	14.63±2.41
p	0.707	0.087	0.038*	0.433
Place of Residence				
Inside Campus	14.65±1.79	14.93±2.51	14.87±3.10	14.70±2.11
Outside Campus	14.78±1.87	14.93±2.45	15.29±2.99	14.44±2.44
p	0.631	0.986	0.324	0.425
Are you suffering from any illness?				
Yes	13.44±3.04	14.55±2.92	14.88±3.48	13.66±3.00
No	14.79±1.81	14.94±2.45	15.22±3.00	14.50±2.36
p	0.031*	0.645	0.743	0.298

*p<0.05 is statistically significant

examined for their quality of life in order to intervene timely for betterment. It has been observed that burnout, high level of stressful environment, anxiety and depression have negative impact on self-efficacy and quality of life. Earlier studies[6,21] reported during SARS outbreak highlighted that emotional distress was more common among those who were in close proximity and treating infected patients and many studies have concluded that mental health of the hospital employees were terrible as compared to general public.[22-24] Nurses who participated in this survey reported normal scoring for quality of life on all four domains i.e. physical, psychological, social, and environmental. The reason for nurses' normal perception about their quality of life may be due to the professional skill, ethical values and serving attitude toward others which are the core elements of this profession. However, earlier studies[25] have also reported that nurses work more efficiently under pressure and because of their confidence and professional skills they always act in forefront during crisis situations.

Distinctive finding on predictors of anxiety and depression in our study revealed that education and designation are the two risk factors. It was noticed that nurses who had diploma were more anxious and those working at the post of nursing officer were more at risk of depression than those who were working as senior nursing officer. While there are other studies in literature with contradictory findings that states age,[26] gender,[7] time spent in COVID unit[26,27] are the risk factors that brings negative emotions among nurses make them more susceptible to anxiety and depression. It was stated in a study that nurses who were given accommodation and residential facilities were at less risk for developing anxiety and other somatic symptoms[28] but our study findings suggest that nurses' residence did not contribute significantly in their anxiety and depression status. It was reported in a study that nurses with co-morbidity and older age had physical symptoms and it effect overall physical and emotional health.[29] However, this study indicated that around 2.5% nurses were suffering from illness and their illness status had significant association with physical domain in quality of life. Similarly, Chatterjee SS *et al.*[8] have also stated that around 5.9% frontline warriors had presence of comorbidities which put them at risk for coronavirus infection. Furthermore, nurses' quality of life on psychological and social domains had significant association with their marital status but a study reported in Toronto, Canada stated contrary findings where marital status did not have any association with PTSD symptoms.[28] As per authors opinion it is due to cultural difference and Indian nurses who are married scored less in psychological and social domain because they are living away from family and children because of COVID duties and quarantine policies.

Indian government has adapted various strategies by providing facilities and services to general public and healthcare workers as well; measures including lockdown, enhancing treatment facilities, quarantine facilities for health care facilities, customer helpline services and availability of other resources like personal protective equipment and ventilators etc. However, measures to deal with psychological distress especially for health care workers are still fragmentary and need to be revaluated on the basis of current prevalence of anxiety and depression among nurses and other health care workers. More in-depth focus is essential toward mental health component of health care workers if we intent to avoid another pandemic of psychiatric issues. Although, various educational along with awareness modules have been circulated and all of these are somewhat helpful in reducing stress but well defined individual approach is much needed in this time of prolonged exposure to stressful and threatening environment. Research evidences have also suggested that specific interventions during crisis or such pandemic situation can prevent the risk of long term mental illnesses.[29]

Our study findings are unique as we have included nurses working in government tertiary care hospitals and therefore, it generated recent evidence on anxiety, depression and quality of life experienced by nurses working in COVID areas. This study findings clearly state that nurses are suffering from anxiety and depression and some of them are at borderline. However, it is such a relief to observe that many of them were normal and their quality of life has not been affected but still we require measures to deal with these psychological issues. Primary care physicians could be very helpful in early diagnosis and treatment of mental health issues among HCWs. They can bring forth unique strategies to address psychological issues and challenges at the earliest and hence, promote quality life among nurses and other health care professionals working in this pandemic. COVID-19 is not going to end soon as per current scenario; we need more psychological facilities available not only for health care workers but for everyone in the country.

Conclusion

Coronavirus has changed many dynamics in everyone's life but nurses who are serving and involved in treatment of COVID-19 sufferers should be monitored or screened regularly for their physical and mental health. Nurses are making emotional investment with sick or critical patients and therefore their psychological health can be compromised if timely measures are not taken on time. Governmental and hospital administration should make provision for resilience development programme along with individual counselling services available in the hospital campus and telephonically. Frontline health workers are the greatest taskforce working efficiently in this critical time and therefore, we require innovative strategies or plans where primary care physicians should render their services to prevent upcoming crisis of psychological distress and psychiatric illnesses in the country.

Declaration of patient consent

The authors certify that they have obtained all appropriate patient consent forms. In the form the patient(s) has/have given his/her/their consent for his/her/their images and other clinical information to be reported in the journal. The patients understand that their names and initials will not be published and due efforts will be made to conceal their identity, but anonymity cannot be guaranteed.

Financial support and sponsorship

Conflicts of interest

There are no conflicts of interest.

References

1. Coronavirus disease (COVID-19), Situation Report – 105. [cited 2020 Sep 21]. Available from: https://www.who.int/docs/default-source/coronaviruse/situation-reports/20200504-covid-19-sitrep-105.pdf?sfvrsn=4cdda8af_2.

2. Jha S, Soni A, Siddiqui S, Batra N, Goel N, Dey S, *et al.* Prevalence of flu-like symptoms and COVID-19 in healthcare workers from India. J Assoc Physicians India 2020;68:27-9.

3. Matua GA, Wal DM. Living under the constant threat of ebola: A phenomenological study of survivors and family caregivers during an ebola outbreak. J Nurs Res 2015;23:217-24.

4. Tam CW, Pang EP, Lam LC, Chiu HF. Severe acute respiratory syndrome (SARS) in Hong Kong in 2003: Stress and psychological impact among frontline healthcare workers. Psychol Med 2004;34:1197-204.

5. Lee SM, Kang WS, Cho AR, Kim T, Park JK. Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. Compr Psychiatry 2018;87:123-7.

6. Lee AM, Wong JG, McAlonan GM, Cheung V, Cheung C, Sham PC, *et al.* Stress and psychological distress among SARS survivors 1 year after the outbreak. Can J Psychiatry 2007;52:233-40.

7. Wilson W, Raj JP, Rao S, Ghiya M, Nedungalaparambil NM, Mundra H, *et al.* Prevalence and predictors of stress, anxiety, and depression among healthcare workers managing COVID-19 pandemic in India: A nationwide observational study. Indian J Psychol Med 2020;42:353–8.

8. Chatterjee SS, Bhattacharyya R, Bhattacharyya S, Gupta S, Das S, Banerjee BB. Attitude, practice, behavior, and mental health impact of COVID-19 on doctors. Indian J Psychiatry 2020;62:257-65.

9. Khanna RC, Honavar SG, Metla AL, Bhattacharya A, Maulik PK. Psychological impact of COVID-19 on ophthalmologists-in-training and practising ophthalmologists in India. Indian J Ophthalmol 2020;68:994-8.

10. Zhu Z, Xu S, Wang H, Liu Z, Wu J, Li G, *et al.* COVID-19 in Wuhan: Immediate psychological impact on 5062 health workers. Medrxiv [Preprint], [cited 2020 Sep 21]. doi: 10.1101/2020.02.20.20025338.

11. Elbay RY, Kurtulmuş A, Arpacıoğlu S, Karadere E. Depression, anxiety, stress levels of physicians and associated factors in Covid-19 pandemics. Psychiatry Res 2020;290:113130. doi: 10.1016/j.psychres. 2020.113130.

12. Khalid I, Khalid TJ, Qabajah MR, Barnard AG, Qushmaq IA. Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. Clin Med Res 2016;14:7-14.

13. Thapa B, Gita S, Chatterjee K, Devrani A. Impact of COVID-19 on the mental health of the society & HCW (healthcare workers): A systematic review. Int J Sci Healthcare Res 2020;5:234-40.

14. Pappa S, Ntella V, Giannakas T, Giannakoulis VG, Papoutsi E, Katsaounou P. Prevalence of depression, anxiety, and insomnia among healthcare workers during the COVID-19 pandemic: A systematic review and meta-analysis. Brain Behav Immun 2020;88:901-7.

15. Zigmond AS, Snaith RP. The hospital anxiety and depression scale. Acta Psychiatr Scand 1983;67:361-70.

16. World Health Organization. Division of Mental Health. (1996). WHOQOL-BREF: Introduction, administration, scoring and generic version of the assessment: Field trial version, December 1996. World Health Organization. Available from: https://apps.who.int/iris/handle/10665/63529.

17. Sharma SK, Mudgal SK, Thakur K, Gaur R. How to calculate sample size for observational and experimental nursing research studies? Natl J Physiol Pharm Pharmacol 2020;10:1-8.

18. Adams JG, Walls RM. Supporting the health care workforce during the COVID-19 global epidemic. JAMA 2020;323:1439-40.

19. Swapnil B, Harshali R, Snehal C. Prevalence of low mental health among nurses in medical intensive care units. Int J Contemp Med Res 2016;3:2444–7.

20. Lai J, Ma S, Wang Y, Cai Z, Hu J, Wei N, *et al.* Factors associated with mental health outcomes among health care workers exposed to coronavirus disease 2019. JAMA Netw Open 2020;3:e203976.

21. Sim K, Huak Chan Y, Chong PN, Chua HC, Wen Soon S. Psychosocial and coping responses within the community health care setting towards a national outbreak of an infectious disease. J Psychosom Res 2010;68:195-202.

22. Nukui H, Murakami M, Midorikawa S, Suenaga M, Rokkaku Y, Yabe H, *et al.* Mental health and related factors of hospital nurses. Asia Pac J Public Health 2017;29 (2_suppl):161S-70S.

23. Zhou C, Shi L, Gao L, Liu W, Chen Z, Tong X, *et al.* Determinate factors of mental health status in Chinese medical staff: A cross-sectional study. Medicine (Baltimore) 2018;97:e0113.

24. Nukui H, Midorikawa S, Murakami M, Maeda M, Ohtsuru A. Mental health of nurses after the Fukushima complex disaster: A narrative review. J Radiat Res 2018;59(suppl_2):ii108-13.

25. Sun N, Wei L, Shi S, Jiao D, Song R, Ma L, *et al.* A qualitative study on the psychological experience of caregivers of COVID-19 patients. Am J Infect Control 2020;48:592-8.

26. Huang Y, Zhao N. Generalized anxiety disorder, depressive symptoms and sleep quality during COVID-19 outbreak in China: A web-based cross-sectional survey. Psychiatry Res 2020;288:112954. doi: 10.1016/j.psychres. 2020.112954.

27. Fawaz M, Samaha A. The psychosocial effects of being quarantined following exposure to COVID-19: A qualitative study of Lebanese health care workers. Int J Soc Psychiatry 2020;66:560-5.

28. Hawryluck L, Gold WL, Robinson S, Pogorski S, Galea S, Styra R. SARS control and psychological effects of quarantine, Toronto, Canada. Emerg Infect Dis 2004;10:1206-12.

29. Chew NW, Lee GK, Tan BY, Jing M, Goh Y, Ngiam NJ, *et al.* A multinational, multicentre study on the psychological outcomes and associated physical symptoms amongst healthcare workers during COVID-19 outbreak. Brain Behav Immun 2020;88:559-65.