

Psychological Well-being among Nursing Officers Working in a Tertiary Care Hospital During COVID-19 Pandemic, Sri Lanka

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Abstract. Nursing officers played an integral part in the front line during the COVID-19 pandemic in Sri Lanka. This study assessed psychological well-being during the COVID-19 pandemic among nursing officers working in a tertiary care hospital in Sri Lanka. A cross-sectional study was conducted in late 2020 among 228 nursing officers who had a high risk of COVID-19 exposure. Sinhala versions of the Patient Health Questionnaire -9 (PHQ9) for depression and the Zung Self-rating Anxiety Scale (SAS) for anxiety were used to assess the prevalence of depression and anxiety. A high level of stress (78.9%), annoyance and irritability than usual (60.5%) and difficulty in concentrating at work (40.8%) were reported as common psychological issues. A considerable proportion had mild depression (15.8%) followed by moderate (2.6%) with zero prevalence of severe depression. None of them had anxiety based on the SAS scale. Considering the overall mental well-being, 47.3% rated mental health and well-being as good or very good. Psychological well-being of nursing officers affected by recent COVID-19 pandemic. The necessity of tailored interventions to improve the mental health of nurses is recommended during a pandemic situation.

Keywords. Psychological well-being, COVID-19 Pandemic, Nursing officers

INTRODUCTION

The world faced a time of uncertainty and unknown due to the recent Coronavirus disease 2019 (COVID-19) outbreak. On March 11th 2020, the World Health Organization (WHO) declared COVID-19 as a pandemic. As of January 2021, 219 countries in the world have been affected. More than 100 million people suffer due to COVID-19 and the number of fatalities is on the rise. In Sri Lanka, more than 60,000 cases have been reported since the beginning of the spread with a death toll of around 400 by the end of the outbreak. Like many countries around the world, Sri Lankan government placed strict health measures to stop the rapid transmission, which had been successfully implemented.

There was a high risk of people affected by the COVID-19 pandemic facing mental health problems, including sleep disorders, panic attacks, anxiety disorders, depression and posttraumatic stress disorder (1). It has been stressed in the campaign against COVID-19, the mental health of the health care workers is of great concern. However, the COVID-19 pandemic has tested their mental and

emotional resilience in an unprecedented manner among them (2). While the true scope of the virus and its mutations are yet to be discovered, the constant exposure to the infection and prolonged work shifts without an effective treatment are some of the major reasons for this.

Nursing officers played an essential component of the frontline COVID-19 management systems. According to the International Council of Nurses, by October 2020, 1,500 nurses from 44 countries have died due to the virus. They also estimate that more than 20,000 fatalities among healthcare workers worldwide. These published and hit news figures may also have a significant negative impact on the mental health of nurses. A survey was done by Nursing Times, known as 'COVID-19: Are you OK?', emphasizing the mental health stresses and requirements during and after the pandemic. Among 3500 nurses who took part in this 33% said it was "bad" or "very bad" when questioned about their well-being and overall mental health. More than 50% were more stressed and anxious than normal (3).

Amongst the high-risk environment, nursing officers are required to work long and

distressing shifts to fulfil the health requirements causing them to be exposed to a protracted source of stress which may affect their mental well-being, individual coping skills and job performances. Other than that lack of personal protective equipment, strains on personal relationships and financial challenges also have an adverse effect. Among the healthcare workers, nursing officers especially must be at patients' bedsides constantly, monitoring and treating them (3). Studies done in Italy, where the pandemic managed to cause a huge crisis during its wake, showed that the effect of the pandemic might cause nursing officers to develop symptoms of post-traumatic stress disorder, narcotics abuse, depression, and anxiety (4).

With this evidence, it is identified as an important factor in optimizing mental health among nursing officers during this crucial pandemic situation (5). Currently, many researches are carried out globally outlining the psychological manifestations of healthcare workers during the pandemic and its contributing factors. Few studies had been conducted in Sri Lanka focusing similar topic of interest assessment of depression and anxiety was different from the present study (6-11). Targeting regaining nurses into normal mental functions to ensure the current working practice is optimum. It was expected to focus on the mental well-being of nursing officers during the COVID-19 outbreak.

METHODS

Study design and study sample. A cross-sectional study was conducted among 228 nursing officers in Teaching Hospital Karapitiya (THK), Sri Lanka. THK is one the largest multi-disciplinary tertiary care hospital in the country. It was a centre for COVID-19 cases in the southern province of the country and one of the major PCR testing centres for COVID-19. The study was conducted on nursing officers of medical wards, outpatient units (O.P.D), emergency treatment units (E.T.U), COVID units and infection control units because they had direct contact with possible COVID-19 cases. The sample size was calculated using a formula given by Lwanga and Lemeshow in 1991, to calculate the sample size based on the prevalence (12). Nursing officers who were currently working at THK and Nursing officers who had

a considerable risk of exposure to infected patients during their duty such as nursing officers working in medical units, COVID-19 isolation units, ETU, OPD, infection control units were included in the study. Nursing officers who were in service, but on excused leave during the period of pandemic. (Maternity leave, medical leave etc.) were excluded from the study. The sample was selected using a simple random sampling method proportionately according to medical Units, COVID Unit, ETC, OPD and Infectious Control Unit in THK. None of the participants were previously diagnosed with any mental health disorder.

Study instrument and Data collection. A Self-administered questionnaire was used for the data collection. Questionnaires were provided in either Sinhala or English languages. It consisted of two parts, socio-demographic details followed by the assessment of mental health status and support provided to nursing officers on mental well-being. The questionnaire was prepared using Patient Health Questionnaire -9(PHQ-9)(13) and Zung-Self Rating Anxiety Scale (SAS) (14) screening for depression and anxiety.

PHQ-9 was developed and validated by Kronke, Spitzer, Williams and Lowe (2009) whose purpose is to allow for a brief measurement of depression and anxiety(13). The Depression severity was assessed using the Patient Health Questionnaire (PHQ-9) score which consisted of nine questions. These nine items anchor 0: Not at all, 1: Several days, 2: More than half of the day, 3: Nearly every day. Then every questionnaire is scored separately and depression level is considered according to the mean values; 0-4: Non-depression, 5-9: Mild depression, 10-14: Moderate Depression, 15-19: Moderately severe depression, 20-27: Severe Depression respectively.

SAS, a self-report assessment device built to measure anxiety levels, was designed by William W.K. Zung(14). The anxiety prevalence was assessed according to Zung's self-rating anxiety scale which included 20 statements based on a four-point Likert scale. The total raw scores need to be calculated which range from 20 to 80. Based on the raw score, the presence of anxiety needs to be identified using "Anxiety Index"; 20–44 Normal Range, 45–59 Mild to Moderate Anxiety Levels, 60–74 Marked to

Severe Anxiety Levels, 75 and above Extreme Anxiety Level respectively.

These two tools were not validated for Sri Lanka. Hence, they were translated into Sinhala using the translate back translate approach and cultural adaptation was done. Next, they were validated using judgmental validity involving three experts in the field (Consultant community physician, consultant psychiatrist and expert in behavioural science) and pretested before use in data collection in the present study.

Overall mental status was assessed based on a five-point Likert scale; very good, good, neither good nor bad, very bad and bad. Stress levels before and after the pandemic, getting annoyed and irritable and difficulty in concentration were assessed under other psychological problems using a Likert scale. Data were collected throughout the entire months of October and December in 2020, following the second wave of the pandemic.

Data analysis. Data were entered into a database created using Microsoft Excel and were analyzed using SPSS Statistical software (version 20.0). Scores for both scales were calculated separately and categorized to identify the presence of depression and anxiety as mentioned under the data collection tool. The prevalence of depression and anxiety were calculated based on those categorizations. Chi-squared test at a 0.05 significance level was used to identify the associated factors of psychological well-being.

Ethical Considerations. The ethical approval was obtained before data collection (2020.P.093 – 24.08.2020) from the Ethical Review Committee of Faculty of Medicine, University of Ruhuna. Prior permission was obtained officially from the Director of THK and informed written consent was obtained before handing out the questionnaire. Self-administered questionnaires were distributed among the sample maintaining confidentiality. Fully completed questionnaires were collected and all the data collected were handled by the investigators.

RESULTS

A total of 228 nursing officers from THK took part in the study. Mean (SD) age of the sample was 38.8(6.8) years. The majority of the sample was female Nursing officers

(96.1%). Among 228 nursing officers, 2.6% had less than 1 year, 26.3% had 1-5 years, 17.1% had 5 – 10 years and 53.9% had more than 10 years of working experience. Regarding the financial status among the sample, 78.9% of nursing officers had a satisfactory financial status (more than 100,000 SLR per month).

Mental health problems among Nursing officers during COVID-19 pandemic. Stress levels before and after COVID-19, levels of getting annoyed and irritable during the pandemic, and difficulty in concentrating at work during the pandemic were identified as common mental health problems among nursing officers (Table 1). A significant proportion (42.5%) of participants never had stress before COVID-19 while 78.0%, had more stress than usual during the COVID-19 pandemic and the difference was found statistically significant ($p < 0.05$). Getting annoyed and irritable (60.5%) and difficulty concentrating at work (40.8%) were reported by a significant proportion of nursing officers.

The proportion of the sample having a particular mental health-related problem during the COVID-19 Pandemic time was assessed as mainly related to depression and anxiety. The prevalence of depression was assessed according to the Patient Health Questionnaire-9 (PHQ-9) score and anxiety via the Zung Self-rating Anxiety Scale (SAS). However, PHQ-9 revealed 15.8% with mild depression and 2.6% with moderate depression prevalence while one was recognized with severe depression. Interestingly, none of the nursing officers was diagnosed with anxiety based on SAS

Overall mental health status was ranked based on a five-point Likert scale. Looking at the results on overall mental health and wellbeing, a significant proportion had rated their mental health and wellbeing as good, which comprises 39.4% of the sample, while 28.9% had rated it as neither good nor bad. From the sample, 11.8% had rated their mental health as either bad or very bad and simultaneously the same percentage does not know how to rate their overall mental health and wellbeing. Only 8% had rated their overall mental health as very good during the pandemic. Interestingly, only a minority (1.3%) of the sample normally drinks alcohol and they have not felt as if their alcohol intake

had increased during the pandemic.

Table 1. Common mental health problems among Nursing officers during COVID-19 pandemic

	Number	Percentage
Stress level before COVID-19 (N=219)		
Never	93	42.5
Often	78	35.6
Sometimes	48	21.9
Stress level during COVID-19 (N=225)		
Lot more stress than usual	81	36.0
A little more stress than usual	99	44.0
Same as usual	45	24.0
Levels of getting annoyed and irritable (N=228)		
Some of the times	132	57.9
Most of the time	6	2.6
Not at all	90	39.5
Difficulty in concentrating at work (N=228)		
Some of the times	90	39.5
Most of the time	3	1.3
Not at all	135	59.2

Associated factors with mental health status of nursing officers. Socio-demographic factors, psychosocial factors and work-related factors which are likely to be associated with the overall mental health status of nursing officers in THK during the COVID-19 pandemic have been evaluated. The associations were analyzed using the chi-square test. For analysis purposes, the responses given by the participants on overall mental health and well-being have been categorized into main groups good overall mental health and well-being and bad overall mental health and well-being. Very good and good responses are considered under good overall mental health and well-being, while neither good nor bad, very bad and bad under bad overall mental health and well-being. Under socio-demographic factors age category, gender, work experience and financial difficulties & challenges were

assessed. Fear that the disease would spread from them to their loved ones and rejection from friends and community in relation to overall mental health and well-being was assessed under psychosocial factors. Results are presented in Table 2.

A statistically significant association between gender and the overall mental health status of the individuals was revealed in the results. Bad overall mental health and well-being were more likely to be present among female nursing officers ($p < 0.05$). Other sociodemographic factors such as age category, work experience and presence of financial difficulties & challenges do not show a statistically significant association with the overall mental health status at a 0.05 significance level. Among the psychosocial factors affecting mental health status, the fact individuals are afraid that they would spread the disease to their loved ones and rejection

from friends and community in social interactions during this period had a statistically significant association with the mental health status and well-being of the nursing officers during COVID-19. The majority of

nursing officers who were afraid of spreading the disease to their loved ones (<0.05) and who were rejected by friends and community in social interactions (<0.05) as rated their mental health as bad.

Table 2. Socio-demographic and psychosocial factors associated with the overall mental health status and well-being of nursing officers of THK during the COVID-19 pandemic (n = 228) Page | 5

Socio-demographic factors And psychosocial factors	Overall mental health and well-being			Significance
	Good n (%)	Bad n (%)	Total n (%)	
Age Category				
20-39	57 (45.2)	69 (54.8)	126 (100.0)	$\chi^2 = 0.51$ df = 1 p = 0.47
40-59	51(50.0)	51(50.0)	102 (100.0)	
Gender				
Male	0 (0.0)	9 (100.0)	9 (100.0)	$\chi^2 = 8.43$ df = 1 p < 0.01*
Female	108 (49.3)	111(50.6)	219 (100.0)	
Work experience				
<5 years	33(50.0)	33(50.0)	66 (100.0)	$\chi^2 = 0.25$ df = 1 p = 0.61
>5 years	75(46.29)	87(53.7)	162 (100.0)	
Having financial difficulties and challenges during a pandemic				
Yes	27(50.0)	27(50.0)	54 (100.0)	$\chi^2 = 0.19$ df = 1 p = 0.65
No	81(46.5)	93(53.4)	174 (100.0)	
Afraid that they would spread the disease to the people they live with				
Yes	88(44.4)	110(55.6)	198(100.0)	$\chi^2 = 5.16$ df = 1 P = 0.02*
No	20(66.7)	10(33.3)	30(100.0)	
Rejected from friends and community in social interactions				
Yes	28 (35.9)	50 (64.1)	78(100.0)	$\chi^2 = 6.25$ df = 1 P = 0.01*
No	80(53.3)	70 (46.7)	150(100.0)	

*Statistically significant at 0.05 level

Under work-related factors, changes in working hours and changes in workspace and activities after the COVID-19 pandemic were assessed. Apart from that relationship of mental health with whether they have taken care of infected or suspected COVID patients, training to handle an infected individual, adequacy of Personnel Protective Equipment (PPE) and current level of support being provided locally by the hospital and other authorities to healthcare workers have been evaluated (Table 3).

Out of work environment-related factors, changes in the number of working hours, adequacy of personal protective equipment and the current level of support provided

locally by the hospital and other authorities to healthcare workers had a statistically significant association with the mental health status and well-being of the nursing officers of after COVID-19. Nursing officers with an increased number of working hours than usual due to COVID-19 ($p < 0.05$) were more likely to have rated their mental health and well-being as not good. Nursing officers who believe the current level of support provided locally by the hospitals and authorities is inadequate ($p < 0.05$) as well as the supply of PPE is inadequate ($p < 0.05$) have rated their mental health as not good. Change in the workspace and activities of the nursing officers during COVID-19, whether they have

taken care of an infected or suspected patient and training received to handle a COVID-19 patient was not found to have significant associations with the presence of overall

mental health well-being at 0.05 significance level.

Table 3. Work environment-related factors associated with the overall mental health status and well-being of nursing officers of THK during the COVID-19 pandemic (n = 228)

Work environment-related factors	Overall mental health and well-being			Significance
	Good n (%)	Bad n (%)	Total n (%)	
Change in the number of working hours				
Unchanged	6(25.0)	18 (75.0)	24 (100.0)	$\chi^2 = 5.38$ df = 1 p = 0.02*
Increased	102(50.0)	102(50.0)	204(100.0)	
Change in workspace and activities				
Unchanged	51(47.2)	57(52.8)	108 (100.0)	$\chi^2 = 0.01$ df = 1 p = 0.96
Changed	57(47.5)	63(52.5)	120 (100.0)	
Taken care of an infected or suspected COVID patient				
Yes	90(50.0)	90(50.0)	180(100.0)	$\chi^2 = 2.37$ df = 1 p = 0.12
No	18(37.5)	30(62.5)	48 (100.0)	
Received training to handle a COVID-19 patient				
Yes	39(41.9)	54(58.1)	93(100.0)	$\chi^2 = 1.86$ df = 1 p = 0.17
No	69(51.1)	66(48.9)	135(100.0)	
Adequacy of personal protective equipment				
Adequate	62(55.9)	49(44.1)	111(100.0)	$\chi^2 = 4.93$ df = 1 p = 0.02*
Not adequate	46(39.4)	71(60.6)	117(100.0)	
The current level of support provided locally to healthcare workers				
Adequate	19(70.4)	08(29.6)	27(100.0)	$\chi^2 = 6.51$ df = 1 p = 0.01*
Inadequate	89(44.3)	112(55.7)	201(100.0)	

*Statistically significant at 0.05 level

Mental support provided by the Hospital for Nursing officers during COVID-19 pandemic. The satisfaction of nursing officers with the level of mental support provided by the hospital (Figure 1) and the support they would prefer for mental health and well-being (Figure 2) were identified from the study. Unfortunately, the majority (75%) were not satisfied with the support provided by the hospital to maintain good mental health and wellbeing during COVID 19 pandemic. Mental health support via individual, and group support, dedicated health lines, telephone calls, informal support from colleagues and social media platforms were identified under the mental health and wellbeing support, preferred by the nursing officers working in the THK (Figure 2). Among

all of the support measures preferred, mental health support via social media platforms is the method most preferred (25.0%) while informal support from colleagues comes next (22.4%). Face-to-face at the individual level (7.9%) and as groups (6.6%) as well as dedicated health services through telephone calls (2.6%) were preferred by others.

DISCUSSION

The present study was conducted among 228 participants from high-risk wards of THK which included the Interim wards, ETC, Medicine wards etc. with the aim of assessing the mental health of Nursing officers during the COVID-19 pandemic. It was identified that the prevalence of mental

health problems among the nursing staff according to the PHQ9 score; 15.79% had mild depression while 2.63% suffered from moderate depression. These values are slightly less compared to a study conducted

in Norway which had a 21.2% total depression prevalence (11).



Figure 1. Level of support provided locally to healthcare staff on mental health and well-being (n=228)

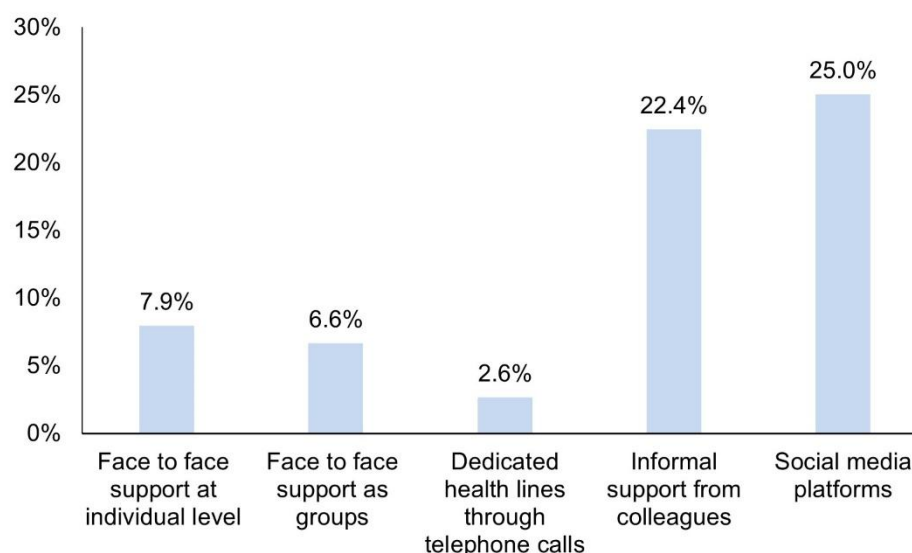


Figure 2. Preferred methods of mental support among nursing officers during the COVID-19 pandemic

But these observed values are higher compared to the lowest prevalence levels observed (12.1%) in a literature search which was conducted in the wake of the pandemic using all cross-sectional studies published through e-databases such as PubMed, EMBASE etc. (15). None of the present study participants was found to suffer from severe depression. SAS score was used to assess anxiety prevalence in our study population, and it was found to be zero. This result was different from the findings of the above-

mentioned study conducted in Norway, which had a 20.5% anxiety prevalence (16).

When considering the overall mental health status of the present study sample, 47.2 % rated their mental health and well-being as good or very good while 52.7% rated their mental health as either bad or unsure of, and 11.8 % rated their mental health as either bad or very bad, 28.9% as neither good nor bad and 11.8% as I don't know. This indicates that COVID-19 has impacted the mental health of nursing officers of COVID-19.

There are many modifiable and non-modifiable factors associated with mental health statuses following the pandemic according to the literature (17). In the present study, the majority of the participants were female participants (96.1%) and the mean age of the sample was 39 years. In terms of working experience, the majority 53.9% (n=123) have more than 10 years of working experience. In the literature, it was noted that this mental health burden was particularly heavy on young women (18). In the present study, even though an association between the gender factor and mental health was observed ($p < 0.05$), no such association was observed with the age factor ($p > 0.05$). Therefore, the level of maturity that comes with passing years was not observed to be beneficial when facing this crisis. The majority of our sample 96.1% (n=219) being female might be the reason for the association between the gender factor and the overall mental health status. Furthermore, years of work experience ($p > 0.05$) and financial changes associated with the pandemic ($p > 0.05$) were not found to be associated with the healthcare workers' mental health outcomes.

In a study done in Portugal, working conditions of the healthcare workers such as availability of adequate PPE, length of their individual shifts etc. were identified as important modifiable risk factors (19). In the present study, the majority of the participants experienced an increase in the number of their working hours while among them, 50% had rated their mental health and well-being negatively by selecting the options bad, very bad, neither good nor bad, or I don't know in our questionnaire. We were able to observe an association between the mental health outcome of the population and increased working hours ($p < 0.05$) and the effect of these lengthened shifts is likely to be a negative one. Even though healthcare workers in local hospitals were being provided with necessary Personal Protective Equipment, 51.31% of participants were not satisfied with the provided PPE facilities. An association between PPE adequacy and overall mental health status ($p < 0.05$) was observed in the results. Out of the nurses who have reported

that PPE is inadequate, 63.2% have rated their overall mental health negatively which suggests that being anxious about PPE adequacy is detrimental to mental health. However, the present study was unable to identify an association between the change in workspace and activities with overall mental well-being ($p > 0.05$). This finding is compatible with the available literature which has evaluated that being assigned to different wards and new clinical situations had no significant effect on mental health (19).

Fear of infecting loved ones, and exposure levels to infected patients were among other associating factors observed in previous studies (18). Although the majority of 78.9% of nursing officers in the present study have taken care of an infected or suspected COVID patient during the pandemic only 40.8% had received proper training on how to handle an infected/suspected patient. In contrast to previous studies, our study didn't identify a relationship between treating such infected/suspected patients with the mental health status of these workers ($p > 0.05$). Also compatible with the available literature, no association was observed between having adequate prior training and mental health outcomes as well ($p > 0.05$).

There were few studies conducted in Sri Lanka related to the psychological well-being of nursing officers during the COVID-19 pandemic. However, there was a discrepancy in the prevalence of anxiety and depression among those studies and comparison with the present study became questionable (6-11). However, all of them reported a higher prevalence of depression and anxiety compared to the present study which varied from 5% to 90% for both (6-11). This discrepancy may be due to differences in the time of data collection from the pandemic, tools used for the data collection and method of data collection and different sample sizes and different study settings. Interestingly, associated factors of psychological well-being among nursing officers during the COVID-19 pandemic showed homogeneity in all studies including the present study (6-11).

A global pandemic of this degree can be a significant source of fear and stress as the HCWs are responsible not only for the

patient's life but are also concerned about their lives and those of their loved ones. Stress, irritability, difficulty concentrating at work, fear, death anxiety, and reduced social support are common problems that have increased with the pandemic (10). Among the nursing population at THK, a total of 79% have experienced higher stress levels compared to times before the outbreak. A total percentage of 60.5% found themselves more annoyed and irritable than usual while 40.8% had difficulty in concentrating at work. It was also observed that these frontline workers tend to avoid social situations more than usual. A significant number of participants felt as if they were being rejected by friends and community in social interactions which had left them feeling dejected and angry many of them were afraid that they would spread the disease to the people they lived with. From the present study results, the social rejection experienced by the nursing officers ($p < 0.05$) and fear of infecting loved ones ($p < 0.05$) were found to have an association with mental health outcomes. Therefore, recognizing the efforts and sacrifices of these front liners during these crucial times and encouraging the general public to be more empathetic and supportive towards them and their families is likely to have a positive effect on their mental health.

Prevalence of already diagnosed mental health conditions such as PTSD was found to be associated with further deterioration of mental health (20). In the present study, there were no participants with previously diagnosed mental health disorders and they were observed to be predominantly non-alcoholic. Only a minority (1.3%) of the present study sample normally drinks alcohol and they have not felt as if their alcohol intake had increased during the pandemic. Smoking and substance abuse prevalence was zero in the present study. Therefore, an association of these factors with mental well-being was not identified in the present study.

These study results further emphasize the need for establishing prompt and proper mental health support programs specialized for health care workers. Such a detailed intervention plan was developed by the Medical Psychology Research Centre of the

Second Xiangyu Hospital in China where they observed a reluctance of their medical staff to participate in formal individual and group support programs (21). From the present study sample, a significant majority (88.1%) of the participants were not satisfied with the current level of support that is being provided to them, hence such psychological intervention would be beneficial for them.

Among them, 55.7% responded negatively when questioned about their overall mental health. Therefore, with the study results showing an association between the level of mental health support and the mental health outcome ($p < 0.05$), this dissatisfaction of health care staff is likely to be a deteriorating factor in their mental health. According to the present study results, receiving informal support from colleagues (22.4%), friends and family via social media platforms such as WhatsApp was the more preferred form of mental health support (25%). Respectively 7.9% and 6.6% of the participants preferred professional mental health assistance provided to them in groups and individually face-to-face. This preference for informal support may be associated with a sense of belonging and understanding felt among fellow colleagues and close friends when it comes to sensitive matters such as one's mental health. Therefore, catering to these preferences, and taking measures to build up mental health the hospital management is crucial.

CONCLUSIONS

The majority of the sample had rated their current health status as bad or unsure and the minority had mild or moderate depression while anxiety prevalence was zero. The present study identified non-modifiable factors such as age, years of working experience and presence of financial difficulties and challenges during the pandemic are not associated with their mental health status but there was an association between gender and the overall mental health outcome. PPE inadequacy, increased number of working hours and lack of mental support given to the staff were modifiable factors found to be associated

with overall mental health status. Stress, irritability, fear and death anxiety were identified as other mental health problems observed. Associations between fear of infecting loved ones and social rejections with mental health outcomes were observed as important findings. The necessity of tailored interventions to improve the mental health of nursing officers, and preferable informal methods was concluded from the present study.

Recommendation and clinical implication of the study. Interventions and support from the hospital and local health authorities are required to uplift the spirit and improve the mental health of the nursing officers, considering the majority are unsatisfied with the current level of support. Implementing entertainment programs, and religious programs at ward levels while adhering to COVID-19 pandemic disease-related health guidelines as well as through social media platforms are some of the initiatives that can be undertaken to support not only the nursing staff but all the healthcare personnel. Providing adequate training for nursing officers by organizing workshops on how to take care of infected or suspected patients with highly infectious disease conditions is an important step. Taking measures to provide adequate PPE to the health staff including nurses by increasing the funds allocated, will benefit not only the mental health but also the physical health of the health care staff. Let them know that they are not alone and encourage them to seek help in any need of psychological support. Establishing an organized mental health support program for the health workers at hospital levels where they can receive individual face-to-face support. Recognizing their efforts and sacrifices at the national/public level (via news, social media etc.) and by the hospital management and encouraging the general public to be more empathetic and supportive towards them. Establishing temporary isolation areas with adequate facilities within the hospital for healthcare workers (especially those who work at high-risk wards such as interim wards, and emergency units) in which they can reside in order to address their fear of bringing the disease to their

homes. More research must be conducted on the mental health of healthcare workers considering the persisting pandemic situation and to understand the nature of the problem more precisely, in order to implement effective strategies.

Declaration of conflict of interest. All authors declare that no conflict of interest.

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