State of Psychological Well-being and Self-Care Patterns Among Paramedic Trainees During the First Wave of COVID-19

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ABSTRACT

Introduction: Several studies suggest that health workers and medical students suffer from psychological problems during the pandemic. Paramedic trainees were doing duty at the hospital round the clock as other trainee health care workers during the first wave of COVID-19, but there was no published study regarding mental health issues of paramedic trainees till the date in Nepal. This study aims to assess their well-being to full fill the gap.

Methods: This is a descriptive, cross-sectional study design carried out with 280 paramedics. The study period was September - October 2020. Depression, anxiety and stress scale – 21 (DASS 21) and self - care assessment worksheet was used to collect the data after getting permission from the concerned authors.

Results: The point prevalence of psychological problems as defined by DASS-21 was 117 (45.3%). Specifically, DASS-21 sub-scales-defined caseness was: Depression 31 (12.0%), anxiety 55 (21.3%) and stress 31 (12.0%), where 218 (80%) of participants were not taking any self-help care-related training to enhance their coping skills to date. Chi-square (χ2) test found that there was a significant association between emotional self-care and severity of depression (P = 0.001), anxiety (P = 0.03) and stress (P = 0.04).

Conclusions: A significant number of paramedic trainees suffered from depression, anxiety and stress during the first wave of the COVID-19 Pandemic. Therefore, psychological interventions like stress management, positive coping skills, and self-care training may be beneficial to help them cope with the situation.

Key Words: Anxiety; Coping; Depression; Health Worker; Mental Health

INTRODUCTION

The intense experience of an infectious pandemic disease could have short-term and long-term impacts on the mental health of paramedics in the absence of effective support and timely training. During the previous SARS outbreak, fear of exposure at work, being quarantined, and the death or illness of a relative / friend were independently contributed mental health issues among the health workers.[1] Evidence-based mental health services and assessment of psychological care needs were necessary for staffs.[2] Continuous psychological services are essential for even mild psychological reactions to decrease the possibility of escalating such problems.[3] The number of health workers suffering from mental health problems after epidemics and pandemics were often greater than physical injury.[4] Although the mental health effects of such events last longer, psychological interventions capture much less attention.[5] The mental health of health workers could be effectively addressed and managed through psychological counselling, group meeting sessions, and management of stress caused by infectious disease pandemics.[6,7] A previous study highlighted that psychological counselling sessions for nursing staff could help in depersonalization, modifying one's perspective of life, understanding the meaning of one's work, and managing psychological reactions in adversity.[8] The immediate need of recognizing and addressing mental health issues in paramedics emerged from the findings of this study.

METHODS

A descriptive, cross-sectional study design was carried out with 280 paramedics. However, some data (N = 22) had many missing information, which was excluded while doing the analysis. The study period was September - October 2020. The study site was a tertiary level hospital, Shree Birendra Hospital, Chhauni, Kathmandu, Nepal. There was a medical training centre where all kinds of paramedics, such as Community Medical Assistant (CMA), Nursing Assistants, Lab Assistants, etc. receiving training and doing round – the - clock duty in a team with other health care workers. A purposive sampling technique was used. Formal approval was obtained from IRC, NAIHS. Informed consent was taken from each participant. The objectives of the study were explained. The self-administered questionnaire was developed and distributed to participants with other two tools. Nepalese version of the self - report tool was used to collect data, i.e. DASS 21. The DASS-21 was a set of three sets of scales designed to measure the emotional states of depression, anxiety, and stress.[9,10] Each of the three DASS-21 scales contains seven items. Scores for depression, anxiety and stress are calculated by summing the scores for the relevant items. All three types of sub-scales caseness together was considered as the total prevalence of mental health problems in this study. This state of participants was considered a disturbance in psychological well-being. The self-care assessment worksheet was another tool used to collect the data, which was developed by Woody Schuldt. This tool contains five categories of self-care activities - physical, emotional, social, spiritual and professional self-care. Each of these individual activities has different items where physical, social and professional areas have 10 items in each domain, the emotional area has 11 items and the spiritual area has nine items. The scale was designed to help the people reflect on their current self - care practices, recognize areas where they could improve and generate ideas for new self-care activities they would enjoy.[11] It is a three-point Likert scale where 1 means "I do this poorly", 2 means "I do this ok", 3 means "I do this well" and it has one additional rating point regarding willingness to improve the self-care practice, i.e. "I would like to improve at this". Permission was obtained from the authors to use both tools in the research. DASS-21 has been used in the Nepalese context by other researchers. However, pretesting of self - care assessment tool was done with 10% (N = 30) sample with the same setting to see the comprehensibility and usability of the tool. The individual mean score was calculated to assess the level of self-care practice in each area where the mean (SD) was calculated as 9.07 (1.86), 10.13 (1.65), 9.16 (1.61), 8.93 (1.72) and 8.08 (1.83) for physical, emotional, social, professional and spiritual self-care respectively. Below the mean score on each subscale indicated participation in a low number of self - care activities, while above the mean scores indicated more participation in self - care activities in each area of the self - care assessment worksheet. The areas of improvement scores were excluded while calculating the mean score of each subscale. The principal researcher was involved in the data collection and management process. The collected data was reviewed, organized, coded, entered, and analyzed using Statistical Package for Social Sciences-26. Data were analyzed by using descriptive statistical methods to describe participants' demographic variables and lockdown - related difficulties. Pearson's correlation, chi-square test was used to explore relationships

between the DASS-21, self - care assessment worksheet related subscales findings, and independent association with other variables. The findings were presented in the tables.

RESULTS

The mean age of paramedic trainees was 30.07 years (SD = 4.79); among them, males were 212 (82.2%) and females were 46 (17.8%) where 199 (77.1%) participants were married. There were 236 (91.5%) belonging to Hindu religion, 131 (50.8%) were from the upper caste, followed by relatively advantaged Janajati (N = 80, 30%), Dalit (N = 8, 3.1%), and very few (N = 2, 0.8%) were from disadvantaged Janajati where as 199 (77.1%) were from joint families. Regarding their types of training: Nursing 105 (40.7%), Medical 12 (4.7%), Lab 4 (1.6%) and others 137 (53.1%) have participated. Among them, 139 (53.9%) participants were working 11 - 15 hours of hospital duty, and 30 (11.6%) were doing more than 15 hours of hospital duty per day at various departments. There were 151 (58.5%) participants who reported that there was no provision of PPE for them. Almost all participants, i.e. 256 (99.2%), were getting COVID-19 related training and orientation. Most participants, i.e. 203 (78.7%) had experienced difficulties in their daily life due to the lockdown. Participants living with high-risk family members were 64 (24.8%). There were 80 (31%) participants who reported the problem of sleep disturbances, where 59 (22.9%) participants were having trouble due to sleep disturbances. Most of the participants (i.e. 237, 91.9%) were staying far away from the family members, and 124 (48.1%) were far away from close friends. Most of the participants (N = 210, 81.4%) were not getting enough holiday during the pandemic period (Table 1).

Table 1. Participant's information (N = 258)

Variables	Frequency (%)
Gender	
Male	212 (82.2)
Female	46 (17.8)
Marital Status	
Unmarried	56 (21.7)
Married	199 (77.1)
Widow/Widower/Divorced/ Separated	3 (1.2)
Types of Training	
Nursing Assistant	105 (40.7)

Medical	12 (4.7)
Lab	4 (1.6)
Other Paramedics	137 (53.1)
COVID-19 related Training-orientation	
Yes	256 (99.2)
No	2 (0.8)
Length of Duty hours per-day	
< 5 Hours	2 (.8)
6 - 10 Hours	87 (33.7)
11 - 15 Hours	139 (53.9)
> 15 Hours	30 (11.6)
Lockdown difficulties	
Yes	203 (78.7)
No	55 (21.3)
Distance from family	
Yes	237 (91.9)
No	21 (8.1)
Enough holidays	
Yes	48 (18.6)
Sleeping pattern disturbance	
No	178 (69.0)
Yes	80 (31.0)

Table 2 reveals that the point prevalence of total DASS-21 defined caseness was 117 (45.3%). However, their severity was different (mild to an extreme level). Specifically, DASS-21 subscales - defined caseness was: depression 31 (12.0%), anxiety 55 (21.3%) and stress 31 (12.0%). Regarding the severity of symptoms of DASS-21 subscales, it was found that 15 (5.8%) had mild stress, 11 (4.3%) had moderate stress, and five (1.9%) participants had severe stress. Similarly, 24 (9.3%) participants had mild, 22 (8.5%) had moderate, five (1.9%) had severe, and four (1.6%) had extremely severe level symptoms of anxiety. Likewise, 16 (6.2%) participants had symptoms of mild, 14 (5.4%) had moderate, and one (0.4%) had a severe level of depression.

Table 2. Assessment of Depression, Anxiety and Stress (N = 258)

Caseness*	Frequency (%)	Total (%)
Depression		31 (12.0)
0 - 9 (Normal)	227 (88.0)	
10 - 13 (Mild)	16 (6.2)	

14 - 20 (Moderate)	14 (5.4)
> 28 (Severe)	1 (.4)
Anxiety	**55 (21.3)**
0-7 (Normal)	203 (78.7)
8 - 9 (Mild)	24 (9.3)
10 - 14 (Moderate)	22 (8.5)
15 - 19 (Severe)	5 (1.9)
> 20 (Extreme)	4 (1.6)
Stress	**31 (12.0)**
0 - 14 (Normal)	227 (88.0)
15 - 18 (Mild)	15 (5.8)
19 - 25 (Moderate)	11 (4.3)
26 - 33 (Severe)	5 (1.9)
*Total	117 (45.3)

Total DASS-21defined caseness =Depression scale+ Anxiety scale+ Stress scale = 117(45.3%)

Table 3. Chi-square analysis between Length of duty hours and presence of Stress

Duty Hours per day	Stress		X^2	P-Value
	No (%)	Yes (%)	19.74	.000
6 - 10 Hours	80 (91.9)	7 (8.1)		
11 - 15 Hours	126 (90.6%)	13 (9.4)		
> 15 Hours	19 (57.8%)	11 (42.2)		

Table 4. Correlation between DASS-21 Sub-scales (N = 258)

Variables	Depression	Anxiety	Stress
Depression	-		
Anxiety	.553**	-	
Stress	.608**	.612**	-

**. Correlation is significant at the 0.01 level (2-tailed)*

Table 5. Self-care pattern of the participants (N = 258)

Variables	Frequency (%)	Mean (SD)	Frequency (%) participants want to Improve
Physical self care (10 items)		9.07 (1.86)	89 (34.5)
Above average	169 (65.5)		
Average	35 (13.6)		
Below average	54 (20.9)		
Emotional self care (11 items)		10.13 (1.65)	91 (35.3)
Above average	167 (64.7)		
Average	42 (16.3)		
Below average	49 (19.0)		
Social self care (10 items)		9.16 (1.61)	85 (32.9)
Above average	173 (67.1)		
Average	30 (11.6)		
Below average	55 (21.3)		
Professional self care (10 items)		8.93 (1.72)	109 (42.2)
Above Average	149 (57.8)		
Average	43 (16.7)		
Below average	66 (25.6)		
Spiritual self care (9 items)		8.08 (1.83)	81 (31.4)
Above average	176 (68.2)		
Average	30 (11.6)		
Below average	52 (20.2)		

Table 5. Correlation among five areas of Self-care assessment worksheet (N = 258)

Variables	Emotional	Social	Professional	Spiritual	Physical
Emotional	-				
Social	.646**	-			
Professional	.577**	.523**	-		
Spiritual	.577**	.620**	.636**	-	
Physical	.488**	.425**	.487	.477**	

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

The severity of stress was positively correlated with the length of duty hours (r = 0.200, p < 0.01). Chi-Square test findings indicated that there was a significant association between the length of duty hours and presence of stress with the value of X^2 (3, N = 258) =19.74, P = .000 (Table 3). Spearman's correlation coefficient findings indicated that there was a moderate correlation among the scores of depression, anxiety, and stress (p < 0.01) (Table 4). Regarding self-care practice assessment of the participants, mean scores of each area of self - care were calculated. Below the mean scores on each subscale indicated participation in a low number of self - care activities, while above the mean scores indicated more participation in self - care activities in each area of the self - care assessment worksheet. The average score on all self-care areas was calculated individually where 54 (20.9%), 49 (19%), 55 (21.3%), 66 (25.6%) and 52 (20.2%) participants were doing the below-average levels of physical, emotional, social, professional and spiritual self-care practice respectively to maintain their well-being. However, a significant number of participants (i.e. 205, 79.5%) were not taking any stress management and self - help care-related training, but 89 (34.5%), 91 (35.3%), 85 (32.9%), 109 (42.2%) and 81 (31.4%) participants found their need to improve on different self-care given in the self-care assessment worksheet (Table 5).

Table 6 exhibits that there was a positive correlation among all five subscales of the self - care assessment worksheet where emotional self - care was highly correlated with social (r = 0.646, p < 0.01), professional (r = 0.577, p < 0.01), spiritual (r = 0.577, p < 0.01) and physical (r = 0.488, p < 0.01) self - care. Social self - care was moderately correlated with professional (r = 0.523, p < 0.01), spiritual (r = 0.620, p < 0.01) and physical (r = 0.425, p < 0.01) self - care. Similarly, professional self - care was highly correlated with spiritual (r = 0.636, p < 0.01) and physical (r = 0.487, p < 0.01) self - care.

Spiritual self - care was also moderately correlated with physical (r = 0.477, p < 0.01) self-care. Chi-Square test found as significant association between emotional self-care and stress with value of: X^2 (2, N = 258) = 6.20, p = .04 where emotional self - care and depression with value of: X^2 (2, N = 258) = 13.65, p = .001. Similarly, emotional self-care and anxiety with value of: X^2 (2, N = 258) = 6.47, p = .03. Therefore, there was significant association between emotional self-care and severity of depression, anxiety and stress.

DISCUSSION

This study found that total DASS-21 defined caseness (i.e. the sum of depression, anxiety, and stress scale) were 117 (45.3%), which indicated that a significant number of paramedic trainees were going through mental health problems during the pandemic where 55 (21.3%) participants had anxiety symptoms and 31 (12%) participants had depressive symptoms. Stress symptoms lower than those found in a recent study conducted among the general population during the COVID-19 pandemic in Nepal showed that 31% of respondents reported anxiety and 34% of respondents reported depression.[12] A study reported that 219 (64.41%) medical students were identified with moderate or severe symptoms of depression during the COVID-19 pandemic,[13] which seems very high in number compared to the current study and other studies where it was found that anxiety: 35.6% and 41.9%, depression: 30% and 37.5% symptoms respectively were prevalent among health workers in Nepal during the early stage of COVID-19 pandemic.[14,15] The lower prevalence might be due to the period of data collection because the previous studies were carried out during the early stages of the COVID-19 pandemic when the news from many parts of the world was dreadful. Most people were

assuming the worst outcome, and the present study was carried out when the pandemic stage was at its peak, but the mortality rate was much lower than the assumptions. Besides that, the paramedic trainees were well - oriented and trained beforehand about COVID-19 protocol and management, doing duty with senior hospital staff and had experienced high rates (more than 90%) of successful cure of COVID-19. The relatively low frequency of anxiety, depression and stress symptoms in this study population might be due to the provision of incentives provided by the government, isolation provision at working place, obtaining a good amount of data regarding recovery of COVID-19 patients, strategies to control the disease by the Government, and low numbers of death reported in the Nepalese population than in other contexts. The current study revealed that 31 (12.0%) had stress. Working in the high infection region, maladaptive coping styles, and higher work intensity can make the health-workers exhausted during the crisis.[16] Most of the participants had faced lockdown difficulties in their daily lives. Those difficulties might be the risk factors to increase the level of stress. There were 80 (31%) who reported the problem of sleep disturbances. A meta-analyses[17] reported that the overall prevalence of insomnia was 27.8% which is slightly less than the current study. However, this study did not identify the absolute diagnosis of insomnia.

Regarding the length of duty hours, 139 (53.9%) participants were doing 11 - 15 hours of hospital duty and 30 (11.6%) were doing more than 15 hours of hospital duty per day at various departments per day. The length of duty hours was positively correlated with the severity of stress and depression. These findings are supported by a study done in China; depressive symptoms were more common among health care workers with longer daily working hours, i.e. more than 12 hours a day are more likely to have depressive symptoms.[18] Most of the participants, 218 (79.3%), were not participating in any stress management & self-help care-related training to care about mental health during stressful situations, which might be another reason for increased distress. Regarding the self - care assessment, 89 (34.5%), 91 (35.3%), 85 (32.9%), 109 (42.2%) and 81 (31.4%) participants found their need to improve on physical, emotional, social, professional and spiritual self-care practice respectively self-care areas. This study also found that there is a significant association between emotional self-care and the severity of depression, anxiety and stress. Therefore, psychological interventions such as stress management / positive coping skills, self-care

training, and supportive sessions might be helpful to improve the overall mental health well-being being and helps to combat the current psychological issues of this target group. A previous study found that positive coping skills increase immune function.[19] A study done in China highlighted the need to better recognize mental health needs as an important component of mobilizing a large - scale therapeutic response to crisis states where it was emphasized that the large rapid response team, including mental healthcare workers to better cope with the crisis. The methods of interventions suggested in a study are: through face-to-face counselling or comparable support through digital platforms such as cell phone interfaces which are essential in efforts to extend their immediate efficiency and better protect the health workers' mental health in the long term.[20] Presence of any history of mental disorders prior to the study was not assessed. This was the limitation of the present study. Another limtitation of this study was that it was conducted in Army Hospital which dealt with only Army health care personnel and result may not be generalized to the entire ealth care personnel of the country.

CONCLUSIONS

This study depicted that significant numbers of paramedics had symptoms of depression, anxiety and stress. However, severity varied from mild to extreme levels of depression, anxiety and stress. On the basis of current findings, the paramedic trainees who already have a clinical range of anxiety, depression and psychological distress symptoms should be further assessed by using a structured clinical interview to confirm the respective problems. This study also found that there was significant association between emotional self-care and the severity of depression, anxiety and stress. Psychological interventions like stress management, positive coping skills and self - care training may be beneficial to help them cope with current symptoms and maintain their well - being in the long run.

ACKNOWLEDGMENTS

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