EMOTIONS AND COPING STRATEGIES OF HEALTH CARE WORKERS WORKING IN DIFFERENT HOSPITALS OF CHITWAN DURING COVID-19 PANDEMIC

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ABSTRACT

Background: Health Care Workers (HCWs) face huge emotional burden to balance the fundamental “duty to treat” with their parallel duties to family and loved ones. This study aimed to explore emotions and coping strategies of HCWs working in hospitals during COVID-19 Pandemic.

Methods: This cross-sectional survey consisted of health workers working in different hospitals of Chitwan during COVID-19 pandemic. Data were collected using self-administered structured questionnaire for emotions and Brief COPE questionnaire for coping strategies. Forms were distributed to the HCWs using Google Form. Collected data were analysed using descriptive and inferential statistics.

Results: Majories of the HCWs were moderate to very much worried to do their job (75.3%), infecting family members/others (74.9%), lack of government steps for infection control (74.1%), getting infections from patients (67.9%), lack of treatment protocol (67.6%), inadequate specialty hospitals (64.7%), man powers (61.4%), increasing COVID-19 cases (60.4%) as well as they avoided social gathering (72.8%). Nurses, female and HCWs with bachelors’ level experienced more emotional reactions (anxiety, sadness, shock, anger and enthusiasm) compared to doctors, male and HCWs with master and above education (p<0.05). Adoption of coping strategies was higher among nurses compared to doctors (p<0.05). Shock and sadness were the significant predictors of problem focused coping whereas anxiety and anger were the significant predictors of emotion-focused coping.

Conclusions: Negative emotions and adoption of coping strategies are common among HCWs during this pandemic. Therefore, government and concern authorities need to organize screening program and psychological interventions for HCWs using identified predictors to enhance their mental wellbeing.

INTRODUCTION

Corona Virus Disease 2019 (COVID-19) has been declared as public health emergency worldwide on 30th January 2020 and pandemic on 11thMarch 2020.¹ ² Health Care Workers (HCWs) at the frontline are more likely to be in close contact with COVID-19 patients and are vulnerable to spread the infection to their closed ones.³ In addition, inadequate accesses to personal protective equipment or weak infection prevention and control raise the risk among HCWs.⁴ Currently, HCWs represents at least 10% of cases of COVID-19 infections globally⁵ whereas 539 in Nepal till 27th August 2020 and is increasing steadily.⁶

HCWs are experiencing enormous mental burden due to the nature of their job, rapid spread, lethal in severe cases and no specific treatment for infection.⁵ ⁷ ⁸ However, persons’ coping strategies keeps on changing based on the situation leading to emotional turmoil.⁵ ⁷ Hence, this study was aimed at assessing emotions and coping strategies among HCWs working in different hospitals during covid-19 pandemic.

METHODS

A cross-sectional survey consisted of health workers (doctors and nurses) working in five selected hospitals i.e. Chitwan Medical College and Teaching Hospitals, College of Medical Sciences Teaching Hospital, Bharatpur hospital, Mankamana hospital, and BP Koirala Memorial Cancer Hospital (BPKMCH) of Chitwan district. There were 1569 health workers (doctors-484 and nurses-1085) working in these hospitals.

Sample size was calculated using formula: n= z²pq/e². Calculated sample size was 482 with 0.5 probabilities (p), 5% allowable error (e), 95% confidence level and 25% non-response error. All the doctors and nurses working in the selected hospitals were listed and were selected through simple random sampling technique with lottery methods. Structured self-administered questionnaire for emotions was developed based on the prior literature.⁹-¹¹ In total, there were 32 items grouped in 5 emotional domains (anxiety-11, shock-3, anger-5, enthusiasm-4, sadness-9). Each item was rated on 0-3 scale (0=not at all; 1=slightly; 2=moderately; 3=very much) where higher scores indicated higher emotional responses. Brief COPE Questionnaire was used to measure the coping strategies. It consisted of 28 items under 14 theoretically identified coping responses. Each item was rated on 1 to 4 score where higher scores indicated higher levels of coping. All the responses were analyzed and categorize...
measured in the last 4 weeks. Pretesting of the instrument was done in Narayani Samudayak Hospital, Bharatpur among 40 HCWs and the reliability coefficient of emotional scale and Brief COPE Questionnaire were 0.87 and 0.85 respectively.

Ethical clearance was obtained from the Chitwan Medical College Institutional Review Committee (Ref: CMC-IRC/076/077-128) and administrative permission was taken from the concerned hospitals. Informed consent was obtained from the HCWs. Data were collected from 15th June 2020AD to 15th August 2020AD using Google Form. Data were analysed in IBM SPSS version 20 for window using descriptive and inferential statistics. Data normality were tested and data were normally distributed so independent sample t test, and one way ANOVA were performed to measure the significance difference in emotions and coping strategies according to selected variables. Pearson correlation coefficient was calculated to determine the relationship among variables. Further linear regression models were constructed to find out the associated factors with emotions and coping responses using those variables which were significant at bivariate analysis. Statistical significant was set at <0.005.

RESULTS

Out of 482 HCWS, 65.7% were nurses. Mean age was 30.2 (±8.1) years. Majorities of the HCWS (63.5%) belonged to nuclear family, living with their family members (71.4%) and married (56.0%). Only 4.3% of HCWs had history of chronic illness (Table 1).

Table 1: Baseline characteristics of the HCWS

| Variables                        | Entire Population(n= 482) | Doctors (n=165) | Nurses (n=317) |
|----------------------------------|---------------------------|----------------|----------------|
| **Sex**                          |                           |                |                |
| Female                           | 342 (70.7)                | 24 (14.5)      | 317 (100.0)    |
| Male                             | 141 (29.3)                | 141 (85.5)     | 0(0)           |
| **Marital Status**               |                           |                |                |
| Married                          | 270 (56.0)                | 136 (82.4)     | 134 (42.3)     |
| Unmarried                        | 212 (44.0)                | 29 (17.6)      | 183 (57.7)     |
| **Type of family**               |                           |                |                |
| Nuclear                          | 306 (63.5)                | 90 (54.5)      | 216 (68.1)     |
| Joint                            | 176 (36.5)                | 75 (45.5)      | 101 (31.9)     |
| **Living with family**           |                           |                |                |
| Yes                              | 344 (71.4)                | 114 (69.1)     | 230 (72.6)     |
| No                               | 138 (28.6)                | 51 (30.9)      | 87 (27.4)      |
| **Professional Qualification**   |                           |                |                |
| PCL                              | 180 (37.3)                | 0(0)           | 180 (56.8)     |
| Bachelor                         | 164 (34.0)                | 23 (13.9)      | 131 (41.3)     |
| Master                           | 135 (28.0)                | 129 (78.2)     | 6 (1.9)        |
| Above Master                     | 13 (2.7)                  | 13 (7.9)       | 0(0)           |
| **History of chronic diseases**  |                           |                |                |
| Yes                              | 21 (4.4)                  | 5 (3.0)        | 16 (5.0)       |
| No                               | 461 (95.6)                | 160 (97.0)     | 301 (95.0)     |

Mean Age (SD): 30.2 (8.1)
Min Age: 19 year
Max Age: 59 years

Table 2: Health care workers’ emotional responses on domain 1 and domain 2

| Items                                                                 | Not at all (%) | Slight (%) | Moderate (%) | Very Much (%) |
|----------------------------------------------------------------------|----------------|------------|--------------|---------------|
| **Domain 1: Anxiety**                                                |                |            |              |               |
| Have you felt worried that you have to do your job as it is your professional and ethical duty | 32 (6.6)       | 87(18.0)   | 96 (19.9)    | 267 (55.4)    |
| Have you been worried about getting infection from patients in the hospital | 38 (7.9)       | 117 (24.3) | 170 (35.3)   | 157 (32.6)    |
| Have you been worried about infecting family/others                   | 19 (3.9)       | 102 (21.2) | 118 (24.5)   | 243 (50.4)    |
| Have you avoided social contact, party, meetings and gathering         | 27 (5.6)       | 104 (21.6) | 153 (31.7)   | 196 (41.1)    |
| Have you tried shortening your contact with the patients               | 114 (23.7)     | 153 (31.7) | 157 (32.6)   | 58 (12.0)     |
| Have you been worried about negligent and endangering co-workers      | 85 (17.6)      | 149 (30.9) | 140 (30.9)   | 99 (20.5)     |
| Have you become anxious due to lack of treatment protocol for COVID-19| 47 (9.8)       | 109 (22.6) | 132 (27.4)   | 194 (40.2)    |
| Have you been worried by the talks of covid-19 on the newspapers and channel | 80 (16.6)     | 130 (27.0) | 157 (32.6)   | 115 (23.7)    |
| Have you been worried about lack of manpower in your unit             | 62 (12.9)      | 124 (25.7) | 163 (33.8)   | 133 (27.6)    |
| Have you been worried about lack of knowledge on managing COVID-19 patients | 81 (16.8)     | 167 (34.6) | 149 (30.9)   | 85 (17.6)     |
| Have you been feared that respiratory symptoms appeared on you might be due to COVID-19 infection | 96 (19.9)     | 194 (40.2) | 114 (23.7)   | 78 (16.2)     |
| **Domain 2: Enthusiasm**                                             |                |            |              |               |
| Have you felt energetic going to work daily despite of this pandemic  | 71 (14.7)      | 128 (26.6) | 188 (39.0)   | 95 (19.7)     |
| Have you felt your work have been appreciated by the hospital administration | 149 (30.9)    | 157 (32.6) | 127 (26.3)   | 49 (10.2)     |
| Have you expected financial compensation during the outbreak          | 109 (22.6)     | 129 (26.8) | 121 (25.1)   | 123 (25.5)    |
| Have you felt happy hearing recovered cases reported in news           | 37 (7.7)       | 86 (17.8)  | 80 (16.6)    | 279 (57.9)    |

Not at all-0, Slight-1, Moderate-2, Very Much-3
Table 3: Health care workers’ emotional responses on domain 3 and domain 4

| Items                                                                 | Not at all (%) | Slight (%) | Moderate (%) | Very Much (%) |
|-----------------------------------------------------------------------|----------------|------------|--------------|---------------|
| Have you been annoyed/disturbed because of inadequate specialty hospitals in our country | 46 (9.5)       | 124 (25.7) | 139 (28.8)   | 173 (35.9)    |
| Have you felt rapid mood change due to feeling of something bad happenings | 114 (23.7)     | 181 (37.6) | 125 (25.9)   | 62 (12.9)     |
| Have you had repeated negative thoughts concerning covid-19 transmission | 134 (27.8)     | 162 (33.6) | 140 (29.0)   | 46 (9.5)      |
| Have you felt that you don’t have energy and interest to perform any tasks | 217 (45.0)     | 151 (31.3) | 89 (18.5)    | 25 (5.2)      |
| Have you felt difficulty in sleep thinking about corona virus         | 242 (50.2)     | 122 (25.3) | 93 (19.3)    | 25 (5.2)      |
| Have you felt like crying because of fear of covid-19                 | 292 (60.6)     | 101 (21.0) | 67 (13.9)    | 22 (4.6)      |
| Have you had emotional and physical stress in performing any task related to job, family or self | 151 (31.3)     | 179 (37.1) | 110 (22.8)   | 42 (8.7)      |
| Have you felt offended or being unable to protect others in this pandemic | 133 (27.6)     | 165 (34.2) | 136 (28.2)   | 48 (10.0)     |
| Have you been unable to concentrate in your work than usual           | 172 (35.7)     | 168 (34.9) | 114 (23.7)   | 28 (5.8)      |

Domain 4: Anger

| Items                                                                 | Not at all (%) | Slight (%) | Moderate (%) | Very Much (%) |
|-----------------------------------------------------------------------|----------------|------------|--------------|---------------|
| Have you got conflict between your duty and your own safety           | 113 (23.4)     | 198 (41.1) | 100 (20.7)   | 71 (14.7)     |
| Have you felt angry to work in a ward that has higher risk of exposure to covid-19 (i.e. isolation ward/ fever clinic etc.) | 132 (27.4)     | 211 (43.8) | 89 (18.5)    | 50 (10.4)     |
| Have you had a thought of quitting your job due to covid-19           | 250 (51.9)     | 12 (24.9)  | 78 (16.2)    | 34 (7.1)      |
| Have you been agitated wearing protective gear on a daily basis       | 120 (24.9)     | 202 (41.9) | 95 (19.7)    | 65 (13.5)     |

Domain 5: Shock

| Items                                                                 | Not at all (%) | Slight (%) | Moderate (%) | Very Much (%) |
|-----------------------------------------------------------------------|----------------|------------|--------------|---------------|
| Have you been furious towards people not following the standard protective measures | 54 (11.2)      | 143 (29.7) | 155 (32.2)   | 130 (27.0)    |
| Have you felt avoided by the people for the fear of transmitting covid-19 | 72 (14.9)      | 166 (34.4) | 138 (28.6)   | 106 (22.0)    |
| Have you been in distress because of increase in covid-19 cases in country | 54 (11.2)      | 137 (28.4) | 142 (29.5)   | 149 (30.9)    |
| Have you felt upset thinking government lacks in strict steps for controlling the infections | 39 (8.1)       | 86 (17.8)  | 131 (27.2)   | 226 (46.9)    |

Not at all-0, Slight-1, Moderate-2, Very Much-3

Majorities of HCWs were moderate to very much worried to do job as it is professional and ethical duty (75.3%), infecting family members/others (74.9%), lack of governments strict steps for infection prevention and control (74.1%), getting infections from patients (67.9%), and lack of treatment protocol (67.6%). Less than half of HCWs felt mood change (38.8%), repeated negative thoughts about transmission (38.5%), felt being unable to protect others (38.2%), and agitated to wear protective gears daily (33.2%). Besides, more than half of the HCWs showed moderate to very much enthusiasm to work by hearing recovered cases in the news (74.5%), felt energetic (58.7% ) and expected financial compensation (50.6%) during this outbreak (Table 2 and Table 3).

The independent sample t-test found that anxiety (p=0.009), sadness (p<0.001), shock (p<0.001) and anger (p=0.009) were significantly higher among female HCWS compared to male. Likewise, nurses had significantly higher anxiety (p=0.004), enthusiasm (p=0.001), sadness (p=0.016) and shock (p=0.001) compared to doctors. Similarly, One Way ANOVA found that there was significant difference on emotions according to level of education, and professional qualification. Further, multiple comparisons revealed that HCWS who completed Bachelor level education had significantly higher emotional reactions like anxiety, and anger compared to masters’ level education. Likewise, enthusiasm, sadness and shock were higher among them compared to HCWs with PCL and master level education (Table 4).

Table 5 shows that females unmarried HCWs and nurses made significantly higher use of problem-focused and emotion focused coping to deal with COVID-19 compared to male married HCWs and doctors. Further, significant differences was observed in use of both coping strategies according to level of education where use of both coping strategies were significantly higher among HCWS with PCL education compared to bachelor and master level education.

A stepwise multiple regression analysis models (1 and 2) were constructed to measure the predictors of coping strategies where coping strategies was used as dependent variables and emotions as independent variables. In model 1, only two emotions (such as shock and sadness) were found to be the significant predictors of problem focused coping and explains 10.8% variation in the model. In model 2, anxiety and anger were found to be the significant predictors of emotion-focused coping and these two factors explain 30.2% variation in the model (Table 6).

A stepwise multiple regression analysis was performed and four model were constructed to find out the contribution of coping strategies on emotional responses. Emotional scores were used as the dependent variable, and two dimensions of coping strategies were used as independent variables (Table 7).
Table 4: Difference in emotions according to HCWs characteristics (n=482)

| Variables          | Anxiety   | Enthusiasm | Sadness   | Anger   | Shock   |
|--------------------|-----------|------------|-----------|---------|---------|
|                    | M (SD)    | p value    | M (SD)    | p value | M (SD)  | p value |
| Gender             |           |            |           |         |         |         |
| Female             | 20.05 (5.73) | 0.009      | 6.76 (2.14) | 0.009   | 8.54 (4.81) | <0.001  |
| Male               | 18.53 (6.01) |            | 6.12 (2.57) |         | 6.79 (5.18) | 0.083   |
| Marital Status     |           |            |           |         |         |         |
| Married            | 19.28 (5.68) | 0.165      | 6.40 (2.34) | 0.057   | 7.84 (4.98) | 0.344   |
| Unmarried          | 20.02 (6.06) |            | 6.80 (2.21) |         | 8.27 (4.98) | 0.223   |
| Type of family     |           |            |           |         |         |         |
| Joint              | 19.78 (5.36) | 0.621      | 6.45 (2.23) | 0.377   | 8.22 (4.91) | 0.531   |
| Nuclear            | 19.50 (6.12) |            | 6.64 (2.33) |         | 7.91 (5.02) | 0.281   |
| Living with family |           |            |           |         |         |         |
| No                 | 19.38 (5.46) | 0.592      | 6.62 (2.28) | 0.779   | 8.34 (5.25) | 0.377   |
| Yes                | 19.70 (6.01) |            | 6.55 (2.30) |         | 7.90 (4.87) | 0.742   |
| Profession         |           |            |           |         |         |         |
| Doctor             | 18.53 (5.81) | 0.004      | 6.09 (2.44) | 0.001   | 7.27 (5.32) | 0.016   |
| Nurses             | 20.16 (5.80) |            | 6.82 (2.17) |         | 8.42 (4.75) | 0.196   |
| Level of Education |           |            |           |         |         |         |
| PCL                | 19.75 (5.98) | 0.013      | 6.76 (2.25) | <0.001  | 8.45 (4.60) | 0.001   |
| Bachelor           | 20.48 (5.50) |            | 6.96 (2.02) |         | 8.75 (5.13) | 0.034   |
| Master             | 18.52 (5.93) |            | 5.94 (2.50) |         | 6.76 (5.06) | 0.792   |
| Nurses Education   |           |            |           |         |         |         |
| PCL                | 19.75 (5.98) | 0.051      | 6.76 (2.25) | 0.017   | 8.45 (4.60) | 0.045   |
| Bachelor           | 20.91 (5.33) |            | 7.03 (2.03) |         | 8.61 (4.94) | 0.006   |
| Master             | 16.16 (8.42) |            | 4.50 (1.87) |         | 3.66 (2.87) | 0.533   |
| Doctors Education  |           |            |           |         |         |         |
| MBBS               | 18.00 (5.88) | 0.856      | 6.60 (1.94) | 0.003   | 9.60 (6.11) | 0.747   |
| MD/MS              | 18.58 (5.87) |            | 5.79 (2.36) |         | 7.01 (5.24) | 0.720   |
| DM/MCH             | 19.07 (5.46) |            | 8.07 (3.09) |         | 5.69 (3.27) |         |

Table 5: Differences in coping strategies during COVID-19 pandemic according to health care workers characteristics (n=482)

| Variables          | Problem Focused | Emotion Focused |
|--------------------|-----------------|-----------------|
|                    | M (SD) p        | M (SD) p        |
| Gender             |                 |                 |
| Female             | 15.98 (3.53) <0.001 | 45.64 (8.78) <0.001 |
| Male               | 13.15 (3.60)    | 39.76 (9.97)    |
| Marital Status     |                 |                 |
| Married            | 14.62 (3.79) <0.001 | 42.97 (9.81) 0.013 |
| Unmarried          | 15.85 (3.65)    | 45.13 (9.01)    |
| Type of family     |                 |                 |
| Joint              | 15.18 (3.80) 0.923 | 43.89 (9.50) 0.954 |
| Nuclear            | 15.14 (3.77)    | 43.94 (9.54)    |
| Living with family |                 |                 |
| No                 | 14.67 (3.63) 0.074 | 43.92 (9.96) 0.997 |
| Yes                | 15.35 (3.82)    | 43.92 (9.35)    |
| Profession         |                 |                 |
| Doctor             | 13.39 (3.52) <0.001 | 40.22 (10.3) <0.001 |
| Nurses             | 16.07 (3.57)    | 45.85 (8.54)    |
| Education Level    |                 |                 |
| PCL                | 16.39 (3.33) <0.001 | 46.72 (7.95) <0.001 |
| Bachelor           | 15.42 (3.82)    | 44.74 (9.53)    |
| Master             | 13.39 (3.59)    | 39.66 (9.82)    |
| Nurses Education   |                 |                 |
| PCL                | 16.39 (3.33)    | 46.72 (7.95) 0.100 |
| BN/B.Sc. Nsg       | 15.71 (3.89)    | 44.80 (9.21)    |
| MN                 | 14.83 (2.85)    | 42.83 (8.51)    |
| Doctors Education  |                 |                 |
| MBBS               | 13.78 (2.93) 0.114 | 44.43 (11.38) 0.041 |
| MD/MS              | 13.51 (3.52)    | 39.89 (9.94)    |
| DM/MCH             | 11.46 (4.19)    | 35.92 (8.70)    |
In model 1, problem focus coping and emotion focused coping are the significant predictors of anxiety which explain 5.9% variation in the model. Similarly, in model 2, emotion-focused coping was found to be significant predictors of sadness which explains 29.9% variation in the model. Likewise, emotion focused coping explains 9.7% of the variation in the anger model 3 ($R^2 = 0.097$, $F=26.824$, $p<0.001$). In model 4, problem-focused coping and emotion-focused coping were included in the regression equation of shock and found to be significant predictors of shock which explain 11.6% variation in the model (Table 7).

### Table 6: Regression analysis for coping strategies towards COVID-19 as a function of emotions

| Independent Variables | Dependent Variable: Problem Focused Coping | Dependent Variable: Emotion Focus Coping |
|-----------------------|-------------------------------------------|------------------------------------------|
| Anxiety               | $\beta = 0.079$, $t = 1.51$, $p = 0.131$ | $\beta = 0.525$, $t = 10.981$, $p < 0.001$ |
| Sadness               | $\beta = 0.165$, $t = 3.056$, $p = 0.002$ | $\beta = -0.020$, $t = -0.387$, $p = 0.699$ |
| Anger                 | $\beta = -0.022$, $t = -0.387$, $p = 0.699$ | $\beta = 0.114$, $t = 2.407$, $p = 0.016$ |
| Shock                 | $\beta = 0.194$, $t = 3.621$, $p < 0.001$ | $\beta = -0.044$, $t = -0.954$, $p = 0.341$ |

Model 1: Adjusted $R^2 = 0.108$, $F=15.613$, $p<0.001$ Model 2: Adjusted $R^2 = 0.302$, $F=53.039$, $p<0.001$ Standardized $\beta$

### Table 7: Regression analysis for emotions towards COVID-19 as a function of coping

| Independent Variables | Dependent Variables |
|-----------------------|---------------------|
| Anxiety Model 1       | $\beta = 0.162$, $t = 0.003$, $p = 0.580$, $p = 0.001$ |
| Sadness Model 2        | $\beta = -0.058$, $t = -0.120$, $p = 0.210$, $p = 0.428$ |
| Anger Model 3          | $\beta = 0.504$, $t = 0.012$, $p = 0.492$, $p = 0.172$ |
| Shock Model 4          | $\beta = 0.120$, $t = 0.009$, $p = 0.580$, $p = 0.001$ |

Model 1: Adjusted $R^2 = 0.059$ $F$statistic=16.094($p<0.001$)Standardized $\beta$ Model 2: Adjusted $R^2 = 0.299$ $F$statistic=103.45 ($p<0.001$) Model 3: Adjusted $R^2 = 0.097$ $F$statistic=26.824 ($p<0.001$) Model 4: Adjusted $R^2 = 0.116$ $F$statistic=32.595($p<0.001$)

### DISCUSSION

Present study revealed that infecting family members and others, getting infections from patients, lack of treatment protocol, specialty hospitals and man powers, social distancing and isolation were the major emotional concern to HCWs during this pandemic and these findings are consistent with the various literatures where HCWs showed greatest concerns regarding viral transmission to their family/others. The might be because of novelty of virus, lack of treatment and specific protocols prevailing in the current pandemic. Therefore, health care institutions and Government of Nepal need to consider the strict measures and protocols to control the chain of infection. Other studies also revealed that lack of treatment for covid-19 caused increase in emotional responses among HCWs to work during the pandemic. However, inconsistent finding reported by study in China where medical staffs were less concern regarding lack of treatment for COVID-19. The possible reason in the variation of the views might be because of the time and severity of cases in the concerned country. Half of HCWs of this study were shocked being avoided by others for the fear of transmitting infections and similar results were observed in other studies. Thus, there is a need for public education campaigns concerning COVID-19 and its preventive measures.

In this study, female HCWs had significantly higher anxiety ($p=0.009$), sadness ($p<0.001$), shock ($p=0.001$) and enthusiasm ($p=0.009$) compared to male HCWs and this is in line with other studies where women showed severe anxiety, depression, distress and fear. Similarly, studies pointed out that women had significantly higher anxiety, hopelessness, sadness and enthusiasm compared to male HCWs. This might be due to the facts that women are considered to be fragile, emotionally attached, sensitive and they perceive events more negatively and uncontrollable compared to the men.

This study found that nurses felt more emotions such as anxiety ($p<0.004$), sadness ($p=0.016$) and shock ($p=0.001$) than the doctors which is consistent with other studies in which nurses felt significantly higher anxiety, nervousness and fear compared to doctors. The might be attributed to the fact that they spend more time with patients, see them with pain and dying during COVID-19 outbreak and fear in nurses intensifying the perception of danger on COVID-19. Our finding presents the existence of enthusiasm ($p=0.01$) which appeared more among nurses compared to doctors. Research evidence confirmed that nurses showed positive attitude, encouragement, and collective power, calm and rational behaviour despite of challenges in the fight against the disease. Further, Kakunje concluded that positive emotions play an important role in the recovery and adjustment of psychological trauma.

In this study, positive reframing, planning, emotional support, self-distraction, and religion were frequently used by health workers and use of these measures were significantly higher among nurses compared to doctors and these findings is supported by studies from other part of the world in which nurses commonly used religion, planning, social support as coping measure. The variation in use of coping strategies across the countries might be due to the inconsistent severity and HCWs perceptions towards COVID-19 outbreak.

Similar with other study done in China, this study found the positive relationship between problem-focused coping and...
Coping have higher levels of depression and anxiety. Various studies reported that the high-users of emotion-focused coping have more levels of depression and anxiety.\(^3,7\) Similarly Yeung (2007) reported that the greater use of emotion-focused coping reduced anger and sadness for all age groups and greater use of problem-focused coping reduced sadness for older adults.\(^12\) In addition, a study from Nepal revealed that the nursing students who used emotion-focused coping have higher levels of depression and anxiety.\(^15\)

In our study, shock and sadness were found to be significant predictors of problem focused coping whereas, anxiety and anger were the significant predictors of emotion-focused coping. Various studies reported that the high-users of emotion-focused coping have more levels of depression and anxiety.\(^3,7\) Likewise, the findings during the SARS outbreak concluded that problem-solving coping strategies reduced sadness.\(^3,8\) However, other study reported that it contributed to increase anxiety levels.\(^8\) The conflicting results might be because of one’s appraisal of the situation especially during the time of pandemic.

We found that the coping strategies of HCWs had significant predictive effects on emotional responses in which problem focused and emotion focused coping are the significant predictors of anxiety and shock whereas emotion focused coping has significant predictive effects on sadness and anger. In harmony with these findings, other studies showed significant predictive effect of emotion focused coping on anxiety and sadness.\(^3\) Similarly Yeung (2007) reported that the greater use of emotion-focused coping reduced anger and sadness for all age groups and greater use of problem-focused coping reduced sadness for older adults.\(^12\) In addition, a study from Nepal revealed that the nursing students who used emotion-focused coping have higher levels of depression and anxiety.\(^15\)

Enthusiasm of most HCWs after starting the anti-epidemic tasks is rarely mentioned in other studies and we have included thinking it might have been related to health professionals’ gradual adaptation, acceptance, positive response, and personal growth. In addition, it highlights the need of mental health services, especially to those with pre-existing mental illness and who may be affected by the COVID-19 pandemic. Besides, this study has some limitations. First, it is a cross-sectional survey which could not explore the causal conclusions. Second, most participants were from Chitwan district, limiting the generalization of findings to less affected regions. Third, psychological assessment was done based on self-report tools. Despite of this, study findings highlights the need of safe working conditions, screening program and psychological interventions for HCWs while offering financial subsidies and rewards by health care authorities and institutions.

**CONCLUSION**

HCWs working in different government and private hospitals experience positive and negative emotions during COVID-19 pandemic and these emotions are higher among nurses compared to the doctors. Besides, nurses are more frequently using the coping measures to adjust with their working situations. Hence, health institutions and local government need to organize mental health programs for the health workers during this pandemic considering the identified factors to enhance positive attitude and mental wellbeing.

**CONFLICT OF INTEREST:** None

**FINANCIAL DISCLOSURE:** None

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