ORIGINAL ARTICLE

A Comparison of Psychological Distress and Coping Styles among Physicians and Nurses in a COVID-19 Referral Hospital in Manila: A Cross-sectional Study

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ABSTRACT

Objectives. This study aimed to compare the levels of depression, anxiety, and stress, and the coping styles among physicians and nurses in a COVID-19 referral hospital in Manila from June to July 2020.

Methods. A cross-sectional study among medical residents and nurses selected via convenience sampling was employed. Data were obtained through COVID Stressors and Stress Reduction Questionnaire, Depression, Anxiety, and Stress Scale-21, and Filipino Coping Strategies Scale. Descriptive and inferential analysis of data was done.

Results. Five hundred seventy-one (571) healthcare workers (total population: 1,650 nurses and physicians) participated in the study, representing 81.6% of the computed sample size of 700 respondents. Among the participants, 60.6 %, 69.0%, 48.9% reported symptoms of depression, anxiety, and stress, respectively. Nineteen percent (19%) of nurses reported severe to extremely severe depression, and 42.0% reported severe to extremely severe anxiety. In contrast, 30.8% of residents reported severe to extremely severe depression, and 28.4% conveyed severe to extremely severe anxiety. There was no association observed between perceived levels of stress between the two healthcare professions.

There were more mildly to extremely severe anxious healthcare workers in the COVID areas (74.6%) compared to the non-COVID areas (61.2%). Differences in coping styles were observed among the participants' clinico-demographic characteristics. Top healthcare worker stressors include being negligent and endangering co-workers (88.6%), frequent modification of infection control procedures (87.0%), and discomfort from protective equipment (81.4%). Top stress-reducing factors include provision of food and vitamins (86.7%), sufficient rest (84.2%), and support from higher-ranking colleagues (73.7%).

Conclusion. This study has shown that more than half of the healthcare workers reported mild to extreme levels of depression and anxiety, while a little less than half reported mild to extreme levels of stress. The development and implementation of hospital interventions and programs based on the sources of distress and stress-reducing factors is recommended to mitigate the impact of sustained psychological distress on mental health and physical wellbeing of hospital healthcare workers.

Keywords: psychological distress, psychosocial resources, coping style

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INTRODUCTION

The COVID-19 Situation

In December 2019, Wuhan, China had an outbreak of a novel coronavirus resulting to infection of around 70,000 and death of more than 1,800 individuals within the first 50 days from outbreak. The International Committee on Taxonomy of Viruses named it SARS-CoV-2 and the resultant disease, COVID-19.[1]

The first registered case in the Philippines was recorded on January 20, 2020, and since then, cases have continued to increase. Through the Department of Health (DOH), the country implemented readiness and response operations to mitigate the spread of the disease.[2] On March 2020, DOH designated three COVID-19 referral centers in NCR to cater to patients infected with the virus.[3]

The working schedules and areas of assignments of the healthcare personnel in the COVID-19 referral hospital where this study was conducted were modified to accommodate this new development. The conversion of the hospital into a referral center and the assignment of health workers to COVID wards may have various psychological impacts on these personnel. To date, there is still no study that measures how these changes have affected the physicians and nurses in this COVID-19 referral center.

Psychological Impacts of Pandemics

Psychological distress is not uncommon in times of pandemics due to the real or perceived threats they pose. Frontline healthcare providers are especially vulnerable to mental health conditions, considering the physical and emotional stress associated with the nature of their work, in addition to the risk of contracting the virus and passing the illness to their families.

One of the earliest studies on the topic during the COVID-19 outbreak was conducted by Lai, et al. on January 29 to February 3, 2020 on 1257 physicians and nurses working in different institutions within and outside Wuhan and Hubei province in China.

It was estimated that 50.4% of these healthcare professionals manifested with signs of depression, 44.6% with anxiety, and 71.5% with distress.[4] Sources of stress include their own safety, the risk of transmitting the virus to their families, reports of mortality from the infection, perceived inability to deal with uncooperative and critically-ill patients, and shortage of personal protective equipment (PPE).[4-6]

Coping with Pandemics

Healthcare workers employ various coping strategies to face the threats brought about by the pandemic. Cai and colleagues investigated the coping strategies of frontline health workers in Hunan, China between January and March 2020 during the COVID-19 outbreak. Most frequently used personal coping strategies of doctors and nurses were complying with protective measures, increasing one's knowledge on virus transmission and prevention, adopting a positive attitude, and seeking support from loved ones.[5]

With the changes brought about by the conversion of the hospital into a COVID-19 referral center, frontliners may exhibit psychological distress of varying types and intensities, and use several coping strategies to combat their stressors. However, there is currently a dearth of literature exploring the level of psychological distress and coping strategies among healthcare personnel in the country. This study therefore aims to measure and compare the levels of psychological distress and the coping styles of physicians and nurses in this hospital turned into COVID-19 referral center. Specifically, the researchers aim to (1) measure the levels of depression, anxiety, and stress of physicians and nurses in the COVID-19 referral center; (2) measure their coping strategies; (3) identify their sources of stress and factors reducing stress; and (4) illustrate and compare the relationship between the levels of depression, anxiety, and stress, and demographic characteristics, then the latter with the coping strategies of participants. Understanding the relationship of these variables in the context of the current COVID-19 situation in the Philippines is necessary in instituting timely and relevant interventions that would effectively prevent and manage stress and other mental health problems.

METHODS

Study Design and Setting

This is a cross- sectional study involves physicians and nurses of 16 departments working in the hospital after it was declared as a COVID-19 referral hospital. Data was collected from June to July 2020 after the approval to conduct the study was obtained from the ethics board Panel 4 with REB Code: 2020-348-01.

Around June 2020, healthcare workers assigned to the COVID units employed a one week on and one week off duty schedule, while most of the non-COVID personnel resumed their pre-pandemic duty schemes.

Measures

The following tools were used in this study, which were reformatted into a Google Forms platform:

Depression-Anxiety-Stress 21 Scale (DASS-21)

This is a 21-item four-point Likert-type self-administered questionnaire used to measure the experience of depression, anxiety, and stress scale developed by Lovibond and Lovibond in 1995.[7] It is composed of 3 sets of 7-item scales (0= "did not apply to me" to 3 = "apply to me very much, or most of the time"). A higher score denotes higher distress along the axes of depression, anxiety, and stress.[8] Concurrent validity has been established by Antony et al. in clinical and community samples by correlation with the Beck Depression Inventory (BDI), Beck Anxiety Inventory (BAI), and the trait version of the State-Trait Anxiety Inventory (STAI-T).[9]

Filipino Coping Strategies Scale

This is a 37-item four-point Likert-type self-administered scale developed by Rilveria in 2018 which aims to measure Filipino coping strategies in the face of stress (1= "never" to 4= "always"). It deals with the nine coping strategies of cognitive reappraisal (*pagsusuri*), social support (*paghingi ng tulong*), problem-solving (*pagtugon*), religiosity (*pagkarelihiyoso*), tolerance (*pagtitiis*), emotional release (*paglabas ng saloobin*), overactivity (*pagmamalabis*), relaxation/recreation (*paglilibang*), and substance use (*pagbibisyo*). Construct validity was established through principal components analysis extraction method and varimax rotation method, while convergent validity by correlation with domains of Ways of Coping by Folkman and Lazarus and the Coping Orientation to Problems Experience (COPE) Inventory by Carver, Scheier, and Weintraub.[10]

COVID Stressors and Stress Reduction Questionnaire

This is a 2-item questionnaire containing a list of stressors and factors reducing stress for health workers. This was developed by the authors based on the study conducted by Lee et al. during the SARS outbreak in Taiwan.[11]

Demographics Questionnaire

This includes the department, age, sex, civil status, religion, address, number of children, profession/designation, years in service, presence of co-morbidities, area of assignment (original and current area of assignment; COVID vs non-COVID), and living arrangement (before and during the COVID outbreak).

Sampling Design

All hospital residents (Year 1 to 5) and nurses (Nurse 1 to 7) assigned in the 16 departments after it was declared as a COVID-19 referral hospital in March 2020 who consented to join the study were eligible to participate. Residents and nurses who are on leave or have resigned were not eligible to participate.

The sample size was computed based on the following conditions: a combined population of nurses and physicians currently working at the institution at 1,650 personnel, a prevalence of mild to moderate depressive symptoms at 44.4% based on a study by Marcha et al., a power set at 80% and a two-tailed level of confidence at 95%; with a design effect set at 2.0 to account for the sampling design, and an additional oversampling of 15% to account for non-response leading to a need for 700 respondents using the software, G*Power 3.1.[12]

Permission was secured from the hospital director to conduct the study. Convenience sampling was used by the researchers specifically by communicating with the different department chairs through the chief residents for the doctors, and the chief nurses for the nurses, who then aided in disseminating the questionnaires. The online forms were self-administered and completed within 30 to 40 minutes.

The data collection period spanned five weeks. The principal investigator collected data through Google Forms.

Data Protection Plan

Anonymity and confidentiality were observed throughout the study. The filled-out questionnaires were sent to the Google Drive of the researchers made specifically for the conduct of this study; only the investigators were given access to the documents. Collected data were stored and analyzed in a password-protected computer owned by the department. The files were password-protected. In the event results will be published, participant identifiers will remain confidential. The electronic data will be deleted after three years from the said device.

Ethical Issues

This study underwent panel review by the ethics board prior to execution. Possible risks in answering the questionnaires may include resurfacing of negative emotions (i.e., anxiety and depressed mood). In the event adverse reactions related to completing the survey should arise, participants were advised to contact the researchers through the contact details provided in the introductory page of the questionnaire. The latter would have assessed the participant and provide appropriate intervention such as psychotherapy and/or referral to the emergency room. There was no monetary compensation to the participants.

Statistical Analysis

The data collected was analyzed through descriptive and inferential statistics. Data collected from the accomplished survey questionnaires were entered into an electronic spreadsheet file, and subsequent data processing and analysis was then carried out using the statistical software, Stata 13.

Descriptive statistics such as mean, median, standard deviation, and interquartile ranges were used for numerical variables such as age in years, years in service, DASS-21, and Filipino Coping Strategies Scale scores. Frequency and percentage were used for categorical variables such as sex, department assigned, presence of medical conditions, and perceived sources of stress.

A series of one-way analysis of variance, and chi-square test of association was used to compare the presence of clinico-demographic characteristics and the degree of depression, anxiety, stress, and the coping strategies score among the participants.

The prevalence of health care personnel in the study having depression, anxiety, and stress (i.e., mild, moderate, severe) as well as their 95% confidence interval estimate were determined. Similarly, the domain scores of coping strategies (i.e., cognitive reappraisal, social support, problem-solving, religiosity, tolerance, emotional release, over-activity, relaxation/recreation, substance use) were also compared between physicians and nurses – using the z-test of proportions and independent t-test with unequal variances, respectively.

Spearman's rho rank correlation coefficient was performed to determine the degree of association between DASS and Filipino Coping Strategies scale scores across the age of the respondents and years in service. Chi-square tests of association was performed for the factors and sources of distress in a COVID-19 referral center between doctors and nurses.

The level of significance for all sets of analysis was set at a p-value less than 0.05 using two-tailed comparisons.

RESULTS

Participant Characteristics

A total of 571 healthcare personnel consented and completed the survey, with one participant who did not consent, giving a response rate of 81.5%. There were 321 nurses (56.2% of the respondents) and 250 residents (43.8%) who joined the study.

Table 1 presents the socio-demographic characteristics of the participants. Age range is 21 to 64 years old, with a mean of 33 years. Most of the participants are single (67.3%), female (70.0%), Roman Catholic (81.1%), living alone (35.7%), residing within Metro Manila (86.0%), without known co-morbidities (66.2%), and assigned in COVID-19 areas (49.0%).

Psychosocial Responses of the Participants

Appendix Table 1 shows that more than half of the healthcare workers reported symptoms of mild to extremely severe levels of depression and anxiety, while a little less than half reported mild to extremely severe levels of stress.

Sixty percent (60.0%) of those reporting significant levels of depression and anxiety are nurses. However, the proportion of residents reporting severe to extreme depression is significantly higher than the proportion for nurses. In terms of anxiety, nurses reported more severe levels. There is no noted association between perceived levels of stress between the two groups.

Furthermore, nurses have used the following coping strategies more compared to the residents: Cognitive Reappraisal, Social Support, Problem-Solving, and Religiosity. In contrast, more residents reported the use of Tolerance.

Table 1. Socio-clinico-demographic Characteristics of the Participants

Characteristics	Mean and standard deviation
Current age in years	33 ± 7.92 (21-64)
Characteristics	**Summary Measures, n (%)**
Sex	
Male	171 (30.0)
Female	400 (70.0)
Years in service	
<1	101 (17.7)
1-2	118 (20.7)
3-4	116 (20.3)
5-6	45 (7.9)
7-10	54 (9.5)
11-15	61 (10.7)
16-20	43 (7.5)
>20	33 (5.8)
Civil status	
Single	384 (67.3)
Common-Law/Married	176 (30.8)
Separated/Widowed	11 (1.9)
Religious affiliation	
Roman Catholic	455 (81.1)
Islam	2 (0.4)
Iglesia ni Cristo	13 (2.3)
Christian/Protestant	86 (15.3)
Others	5 (0.9)
Current place of residence	
Within Metro Manila	491 (86.0)
Outside Metro Manila	80 (14.0)
Co-morbid conditions	
Without	378 (66.2)
With co-morbidities	193 (33.8)

Characteristics	Summary Measures, n (%)
Current living arrangement	
Living alone	204 (35.7)
Living with partner	11 (1.9)
Living with family	168 (29.4)
Living with co-workers	180 (31.5)
Other arrangement/s	8 (1.4)
Original living arrangement	
Same	371 (65.0)
Different after COVID	200 (35.0)
Area of assignment	
Assigned in a single unit	364 (63.8)
Assigned to multiple units	207 (36.3)
Type of unit	
COVID Area	280 (49.0)
Non-COVID Area	224 (39.2)
Both	67 (11.7)
Current position	
Nurse I	11 (1.9)
Nurse II	231 (40.5)
Nurse III	56 (9.8)
Nurse IV	18 (3.12)
Nurse VI	5 (0.9)
1st Year Resident	95 (16.6)
2nd Year Resident	69 (12.1)
3rd Year Resident	58 (10.2)
4th Year Resident	17 (3.0)
5th Year Resident	5 (0.9)
Chief Resident	6 (1.1)

Psychological Responses and Socio-clinico-demographic Characteristics

Age and Years in Service

Appendix Table 2 shows that there is a weak negative relationship between depression and stress levels as either age or years in service increases. There is no significant association between anxiety and age and years of service.

Furthermore, there is a weak negative relationship between Substance Use and years in service, whereas a weak positive relationship between age and the use of Emotional Release was observed.

There is a moderate positive relationship between age and using Cognitive Reappraisal, Problem-Solving, and Religiosity. Also, there is a moderate positive relationship between years in service and Cognitive Reappraisal, Problem-Solving, Religiosity, and Emotional Release.

Unit of Assignment (COVID, Non-COVID, or Both)

Appendix Table 3 shows there are significantly more mildly to severely anxious workers in the COVID units, and that they use Cognitive Reappraisal and Problem-Solving coping strategies more often than those in the non-COVID and in both units.

Sex

There is no association between the participant's sex and their depression, anxiety, and stress scores (Appendix Table 4).

Males and females differed in the coping strategies of Cognitive Reappraisal, Problem-Solving, Substance Use, Social Support, Religiosity, and Emotional Release. The first three are used more often by females, while the rest are employed more often by males.

Living Arrangement

There was no observed association between the living arrangement of participants, whether they had the same living arrangement prior to and during the pandemic, and their depression, anxiety, and stress scores (Appendix Table 5).

There was no association between living arrangement and all the coping strategies except Social Support, with this being higher in those with different living arrangement during the pandemic.

Presence of Co-morbidities

There is no association between the presence of co-morbidities and depression, anxiety, and stress scores (Appendix Table 6).

Problem-solving and Over-activity are used more often by those with co-morbidities than those without.

Area of Assignment

There is no association between the participants' area assignment (single vs. multiple units) and their depression, anxiety, and stress scores (Appendix Table 7).

Participants differed in terms of use of Cognitive Reappraisal, Problem-Solving, Religiosity, Over-activity, and Relaxation/Recreation, with these coping responses being higher in those assigned in single areas.

Civil Status

Depression and stress scores are higher among single/separated/widowed individuals. In contrast, there is no association between anxiety and civil status (Appendix Table 8).

Tolerance is used more often by the single/separated/widowed, while Cognitive Reappraisal, Problem-Solving, and Religiosity are used more by married individuals.

Sources of Distress of Nurses and Medical Residents

There is no significant difference in the sources of stress between nurses and residents. Top five stressors include: Worry about being negligent and endangering co-workers, Frequent modification of infection control procedures, Protective equipment causing physical discomfort, Worry about lack of proper knowledge about COVID, and Death of colleagues (Table 2). Additional sources of distress are uncertainty of residency training, death among family members due to COVID-19, and national issues.

Factors which Helped Reduce Stress among Residents and Nurses

There is no significant difference in stress-reducing factors between nurses and doctors. Table 3 shows Provision of food and vitamins, Sufficient rest or time off, Support from higher-ranking colleagues, Enforcement of stringent infection control procedures, and Sharing of experience by senior personnel are the top factors that helped reduce the stress of healthcare workers.

The presence of diversion activities, more time to virtually connect with loved ones, and receiving words of encouragement from family, friends, and even from strangers, were also reported as factors reducing stress.

DISCUSSION

The findings of the study show that the symptoms of depression, anxiety, and stress are prevalent in nurses and residents during the pandemic in a COVID-19 referral facility. More than half of the participants reported symptoms of depression (60.6%) and anxiety (69.0%), while a little less than half reported significant levels of stress (48.9%). These figures are similar, or even greater, than the number of healthcare workers who are reported to have psychological distress in studies conducted across countries.[4,13-17] The sudden onset of a highly transmissible, life-threatening illness, such as what is observed in pandemics, could lead to excessive pressure among healthcare workers. Feelings of isolation, fear of bringing the infection home to their families, and drastic and pervasive changes in workplace

Table 2. Distribution of Perceived Sources of Distress in a COVID-19 Referral Center

Sources of Distress	Doctors, n (%)	Nurses, n (%)	Total, n (%)
Worry about being negligent and endangering co-workers	209 (83.6)	297 (92.5)	506 (88.6)
Frequent modification of infection control procedures	202 (80.8)	295 (91.9)	497 (87.0)
Protective equipment causing physical discomfort	190 (76.0)	275 (85.7)	465 (81.4)
Worry about lack of proper knowledge about COVID	206 (82.4)	257 (80.01)	463 (81.1)
Death of colleagues	175 (70.0)	256 (79.8)	431 (75.5)
Co-workers being emotionally unstable	148 (59.2)	242 (75.4)	390 (68.3)
Worry about being negligent and endangering patients	159 (63.6)	227 (70.7)	386 (67.6)
Unclear documentation and reporting procedures	141 (56.4)	215 (67.0)	356 (62.4)
Uncertainty about when the epidemic will be under control	153 (61.2)	201 (62.6)	354 (62.0)
Worry about getting infected	131 (52.4)	216 (67.3)	347 (60.8)
Lack of proper equipment	125 (5)	213 (66.4)	338 (59.2)
Worry about contracting COVID to family members	139 (55.6)	168 (52.3)	307 (53.8)
Yourself displaying COVID-like symptoms	106 (42.4)	180 (56.1)	286 (50.1)
Co-workers displaying COVID-like symptoms	87 (34.8)	189 (58.9)	276 (48.3)
Patient families' emotional reaction	91 (36.4)	181 (56.4)	272 (47.6)
Protective equipment affecting provision of quality patient care	98 (39.2)	157 (48.9)	255 (44.7)
Blame from higher ranking colleagues	95 (38.0)	160 (49.8)	255 (44.7)
Worry about nosocomial spread	116 (46.4)	136 (42.4)	252 (44.1)
Patients' emotional reaction	95 (38.0)	149 (46.4)	244 (42.7)
Deterioration of patients' condition	82 (32.8)	152 (47.4)	234 (41.0)
Unclear delineation between responsibility of doctors and nurses	77 (30.8)	155 (48.3)	232 (40.6)
Conflict between sense of duty and personal safety	80 (32.0)	139 (43.3)	219 (28.4)
Worry about lack of manpower	80 (32.0)	137 (42.7)	217 (38.0)
Others	26 (10.4)	31 (9.7)	57 (10.0)

Table 3. Distribution of Perceived Factors Reducing Stress in a COVID-19 Referral Center

Stress-Reducing Factors	Doctors, n (%)	Nurses, n (%)	Total, n (%)
Hospital providing food and vitamins	216 (86.4)	279 (86.9)	495 (86.7)
Sufficient rest or time off	208 (83.2)	273 (85.1)	481 (84.2)
Support from higher ranking colleagues	191 (76.4)	230 (71.7)	421 (73.7)
Hospital enforcing stringent infection control procedure	137 (54.8)	212 (66.0)	349 (61.1)
Senior staffs sharing their experience	154 (61.6)	194 (60.4)	348 (61.0)
Improvement in patients' condition	111 (44.4)	228 (71.0)	339 (59.4)
Sharing jokes and humor among co-workers	125 (50.0)	204 (63.6)	329 (57.6)
Psychiatric services	146 (58.4)	180 (56.1)	326 (57.1)
Government offering additional allowance	123 (49.2)	190 (59.2)	313 (54.8)
Hospital providing regular education program	100 (40.0)	194 (60.4)	294 (51.5)
Clear guidelines for medical procedures	107 (42.8)	183 (57.0)	290 (50.8)
Encouragement among co-workers	97 (38.8)	160 (49.8)	257 (45.0)
Clarification of the transmission pathway	66 (26.4)	164 (51.1)	230 (40.3)
Sufficient equipment provided by the hospital	56 (22.4)	139 (43.3)	195 (34.2)
Appropriate work shift	45 (18.0)	116 (36.1)	161 (28.2)
Others	9 (3.6)	9 (2.8)	18 (3.2)

conditions and processes may compromise their well-being and resilience, leading to a myriad of mental health problems such as anxiety and depression.[15]

Moreover, it is also worth noting that about 60.0% of those reporting significant levels of depression and anxiety are nurses. They also reported more severe levels of anxiety than medical residents. These findings may be due to the difference in the responsibilities of nurses and residents, with the former providing more direct care and increased patient contact time.[4,16,18-20] Being responsible for the collection of specimens such as urine and sputum also increases the risk of exposure, which may also account for higher anxiety scores.[15] Also, nurses provide emotional and social support to patients in place of the latter's significant others who are not allowed to stay or visit their patients. These may increase the likelihood of vicarious traumatization and psychological distress among nurses.[16]

However, the proportion of residents reporting severe to extreme depression appeared higher compared to the proportion of nurses. Being the "captain of the ship" in

patient areas, physicians may suffer moral injury or distress resulting from the need to make decisions that may go against their values.[21] Due to shortages of equipment, hospital beds, manpower, and other resources, doctors are being forced to make tough decisions on which patients should be given priority in terms of medical care.[22] Making difficult choices may lead to moral injury and eventually to severe to extreme depression.

Nurses use more of the following coping strategies compared to medical residents: Cognitive Reappraisal, Social Support, Problem-Solving, and Religiosity. These coping mechanisms are consistent with a study on Filipino immigrant nurses in the United States. They focused on altering their views of the stressors, seeking emotional support from their families and fellow Filipino nurses, working harder to prove themselves in light of unfair work practices and discrimination, and turning to religion and prayer to help them get through difficult times and to battle stressors such as adapting to a new working environment, separation from their families, and discrimination.[23]

More medical residents used the coping strategy of Tolerance compared to nurses. This may be attributable to their training in residency and medical school, wherein they are prepared to handle the difficulty and stress brought about by their chosen profession, keeping in mind that such challenging situations often offer the greatest personal growth and unexpected positive outcomes.[24]

Age and Years in Service

Older and more senior healthcare workers reported lower levels of depression and stress compared to younger and newer personnel. Having greater work experience often translates to more knowledge and experience when faced with challenges and uncertainty, such as what is observed during pandemics.[25] Aging may likewise positively affect an individual's maturity and emotional responsiveness, thus decreasing the risk for depression and stress.[26]

In the current study, increasing age was associated with using Emotional Release, Cognitive Reappraisal, Problem-Solving, and Religiosity among nurses and physicians. Also, the greater the years in service, the lesser the use of substance abuse as a coping strategy. Venting out, positive reframing, planning, and religiosity were likewise used more often by older Iranian physicians compared to their younger colleagues, who employed other coping strategies, including substance use.[27] Similarly, in the study of 196 community-dwelling adults in the US, older adults were less likely to use problem-solving coping strategies than younger adults, probably due to more health-related stressors and declining coping resources related to physiological vulnerabilities.[28] However, findings in the literature regarding the relationship of age with coping styles remain inconclusive because of the presence of mediating factors, such as life and developmental changes, perceived stress, and satisfaction with social support.[29]

Nature of Unit of Assignment (COVID, Non-COVID, or Both)

Nurses and medical residents assigned to the COVID units report more symptoms of mild to severe anxiety compared to their colleagues assigned to non-COVID and both units. Having to care for infected patients, these groups of healthcare workers presumably have the highest risk of infection in the workplace. The virus's high transmission efficiency and pathogenicity, coupled with the uncertainties brought about by the pandemic, may have resulted in considerable anxiety for nurses and residents in the COVID areas.[18,20]

Nurses and physicians assigned to COVID units use Cognitive Reappraisal and Problem-Solving more often than those from the non-COVID (and both) units. This may be probably due to the novelty and evolving medical management of COVID-19 patients and the corresponding changes in hospital policies, which would entail COVID staff to do more planning and problem-solving techniques compared to their colleagues assigned in different areas.

Sex

There is no association between symptoms of depression, anxiety, and stress between the sexes. This is in contrast with most studies, which showed that these are more common in females than in males.[4,14,17,30]

Cognitive reappraisal, which aims to modify the impact of a stressful event or situation by deliberately viewing it from a different perspective, is used more by female versus male participants in the study. Problem-solving coping strategies are likewise used by more female than male respondents. This is in contrast with the findings of Perchtold et al., which revealed that both sexes did not differ in their capacity to generate and employ cognitive appraisal strategies in anxiety-provoking and threatening situations. The same study also showed that gender difference is not associated with problem-oriented coping strategies among the surveyed participants.[31]

An interesting finding is that female participants employ substance use as a coping strategy more often than males in the study. Although the use of illicit drugs, alcohol, and tobacco has been traditionally used more by men, the thinning of the gap in substance use between the sexes is observed worldwide. A possible explanation for this is the evolving role of women in society. As gender roles become less traditional, such as the inclusion of the female sex in the workforce, the rate of substance disorders among women likewise is beginning to approach that of males.[32] With regards the use of medications such as anti-depressants, according to the American Psychological Association, women (16.5%) are twice as likely as men (8.6%) to take anti-depressants to improve their general well-being.[33]

Social support as a coping strategy was used more by the male versus female healthcare providers in the study. This is supported by the findings of Soman et al.among depressed

patients in a tertiary care center in South India, which revealed that males had higher perceived social support, particularly from friends, than females.[34] The preference for the use of social support from friends and relatives vis-à-vis mental health professionals, general practitioners, and folk systems has been reported among Filipino immigrants and Filipino-Americans, and may be influenced by the belief that disclosing illness to professionals may result in loss of face and shame.[35] This may be compounded by the value of machismo, wherein Filipino men should be strong, which was inculcated as early as the Spanish colonization period.[36]

Moreover, more male participants reported to use emotional release compared to females. Consistent with the concept of machismo, males are expected and allowed to express externalizing emotions such as anger and contempt. The expression of these emotions is consistent with societal roles for men to be assertive to protect and provide for their families.[37,38]

In the study, religiosity as a coping mechanism was reported to be used more frequently by male healthcare workers than female healthcare workers. Literature on religiosity between the sexes is conflicting. In contrast to the study findings, Christian women worldwide have been found to be more religious than men in several aspects, such as attendance in religious ceremonies and engaging in daily prayer.[39] Similarly, a study on senior high school students of a Catholic college in the Philippines revealed that female students demonstrated greater Catholic religiosity than their male colleagues.[40] Another locally-conducted study on 2733 college students revealed that there was no differences in religious beliefs, and affective and behavioral responses towards religion between sexes.[41]

Living Arrangement

There was no association between a change in the living arrangement of participants and their depression, anxiety, and stress scores. However, the coping mechanism social support was used more often by participants who had a change in living arrangements during the pandemic. Because of the fear of transmitting the virus to their families, some of the participants opted to be physically separated from their loved ones. The limited availability of transportation during the community quarantine also prompted some healthcare workers to avail of lodging services near their workplace. To compensate for physical separation from loved ones, they sought solace from colleagues in the workplace and significant others through digital platforms. Social interaction may help these personnel reduce stress and anxiety, improve mood, and reduce the perception of the threat of stressful events.[42]

Presence of Co-morbidities

There was no association between the presence of co-morbidities and the participants' depression, anxiety, and stress scores. This is consistent with the results of the study by Elbay et al. among healthcare workers in Turkey, which revealed that having comorbid medical conditions, and even being diagnosed with COVID-19, were not found to be associated with depression, anxiety, and stress.[14]

The presence of co-morbidities is associated with the coping strategies problem-solving and over-activity. According to Cheng et al., in their review of qualitative studies on the experiences of patients with multiple chronic conditions or comorbidities, persons with chronic conditions aim to maintain a normal life and, in turn, adopt problem-focused coping strategies to manage their health issues and preserve their independence in the process.[43] These individuals may have embraced similar problem-solving approaches with stressors in the workplace. Also, as coping with co-morbidities does not happen in an isolated environment, the importance of professional and other social networks cannot be overemphasized. They need to feel a sense of purpose in their community and/or workplace, at times by doing work that others perceive as "too much," thus accounting for the relationship of the coping strategy over-activity with the presence of co-morbidities of the participants in the current study.

Civil Status

Unmarried, separated, and widowed healthcare workers displayed more symptoms of depression and stress. Married individuals may receive more familial support, both from their spouses and their families of origin, thus the decreased risk of experiencing depression and stress.[25]

The unmarried, separated, and widowed used tolerance more often than their married colleagues. Cognitive reappraisal, problem-solving, and religiosity are more commonly used coping strategies by married personnel. This is consistent with a study that found that these mechanisms are associated with the marital status of Iranian physicians.[27] The use of such strategies may have been brought about by their experiences in their married life.

Sources of Distress

The study revealed no significant difference in the sources of stress of nurses and residents. Contrary to recent literature during the COVID-19 pandemic, which showed that the main worry of healthcare providers is transmitting the virus to family, such concern only ranked 12th among the study participants' distress sources. This may be due to the necessary changes in these personnel's living arrangements, which ultimately allayed their fear of transmitting the virus to their family. Only 29.4% of the participants reported that they lived with their families during the time when the survey was conducted. Most personnel lived alone (35.7%) or with co-workers (31.5%), either in dormitories or other forms of lodging. Another possible reason may be due to the stringent infection control procedures that the hospital enforced during the start of the pandemic, which was also reported as one of the factors that reduced stress among the participants.

Worrying about being negligent and endangering co-workers is reported as the primary source of distress among the nurses and residents (88.6%). Reports of infections and deaths among health workers may aggravate this. As of June 1, 2020, there have been a total of 2,669 healthcare workers in the country infected by COVID-19, including 32 deaths.[44] Death among colleagues, a source of stress by 75.5% of the participants, was reported to create undue stress, anxiety, and uncertainty among health professionals.[45]

Frequent modification of infection control procedures is the second leading source of stress among the participants. Since COVID-19 is a novel infection, policies and guidelines are often rapidly revised, which may lead to confusion and misunderstanding among the personnel. This, in turn, may further aggravate the anxiety, stress, and risk perception of nurses and residents.[45]

The physical discomfort from using personal protective equipment (PPE) was likewise a significant stressor among 81.4% of nurses and physicians. Ong et al. reported that most healthcare workers in high-risk areas in a tertiary hospital in Singapore experienced headaches associated with using PPEs.[46] The use of N95 masks together with protective eyewear for greater than four hours and those who have pre-existing headache disorders had an increased risk for developing such de novo PPE-associated headaches. On another note, Liu et al. (2020) reported that some healthcare workers feel uncomfortable, at times to the point that they experience extreme sweating, difficulty of breathing, and tachycardia when on complete PPEs. Aside from being a physical challenge, some nurses and physicians likewise reported that the protective gear has affected the way they accomplish their jobs, particularly venipuncture due to the multiple layers of gloves hindering palpation of blood vessels, and writing nurses' notes and medication administration as a result of the blurring of protective goggles.[47]

Most (81.1%) of the study participants worry about a lack of proper knowledge about COVID-19. This is in line with studies worldwide that reported that a significant number of healthcare workers do not feel prepared and competent in caring for patients inflicted with an emerging infectious disease, and this may contribute to the development of psychological distress.[14,15,45] Some health personnel have no expertise in dealing with infectious and critically-ill patients but were made to handle such to augment staffing needs.[47] These did not only cause stress among novice personnel but also with senior or more experienced workers who had to guide them while at the same time taking care of patients, overseeing the unit, and managing their own uncertainties.[45] Worth mentioning is a local study on 325 nurses, which revealed that 90.0% of these health workers reported that they were not fully prepared to care for COVID-19 patients, and only 20.3% are willing to care for the infected.[48] Thus, it is imperative that healthcare professionals be fully equipped with knowledge and skills to provide quality, safe, and effective patient care during outbreaks.

Factors that Helped Reduce Stress

Providing food and vitamins to healthcare workers, especially during the start of the pandemic, was reported by 86.7% of the participants as one factor that helped reduce stress. It is worth noting that healthcare workers in the study were given food, vitamins, toiletries, accommodation, and other donations by the hospital, private individuals, and groups to support and thank these professionals for their service.

Most (84.2%) of the participants stated that having sufficient rest or time off has been helpful in reducing stress. Doing patient care after an eight-hour shift is taxing, especially when wearing complete PPEs. After their tour of duty, personnel assigned to COVID areas often went "straight to their living quarters, collapsed, and did not want to move".[47] Thus, adequate rest periods are essential to help them recover from fatigue and exhaustion.

Support from higher-ranking colleagues and the sharing of experiences of senior personnel have contributed to stress reduction among the participants. Similarly, other studies have reported that support and encouragement from colleagues within the hospital were an important resource in these trying times.[20,47] Moreover, Labrague and de los Santos, in a local study on nurses, found that an increase in organizational support is related to a decrease in the anxiety of nurses.[48] They further explained that the degree to which an organization recognizes their employees, values their inputs, and upholds their overall well-being has been associated with enhanced job performance and commitment among nurses. This is especially important in times of pandemic and in light of reported healthcare worker shortages in hospitals in the country.[49]

Also, the hospital's enforcement of stringent infection control procedures has been recognized by 61.6% of the participants as a factor that reduces stress. Necessary logistics and infection control protocol preparations have been done before the hospital officially began operating as a COVID-19 referral center. Hospital personnel were likewise given regular reminders on infection prevention and control measures.

CONCLUSION

This study has shown that more than half of the healthcare workers reported mild to extreme levels of depression and anxiety, while a little less than half reported mild to extreme levels of stress.

The stressors of physicians and nurses center around the novelty of the COVID-19 virus i.e., endangering co-workers and frequent modification of infection control procedures. The level of psychological distress and coping mechanisms used by healthcare workers are related to their profession, age, years in service, area of assignment, presence of comorbidities, and marital status. In addition, perceived support from administration and colleagues further helped them deal with the situation.

Limitations

Being cross-sectional in nature, this study does not give information on causality of variables and only describes phenomena at a given time. Given that we do not have the baseline levels of depression, anxiety, and stress of the hospital healthcare workers, we could not account for how much change in these variables, if any, is attributable to the pandemic.

Furthermore, healthcare workers who chose to participate may not be representative of the non-participating population. The latter may have had work-related concerns (i.e., overwhelmed with work) or are not well-versed with online surveys, which may have precluded them from participating in the study. Sampling bias may result from the convenience sampling used in this study.

As this study is conducted in only one medical institution, results may not be representative of the healthcare workers in COVID and non-COVID referral centers within and outside the National Capital Region.

The DASS-21 was used to measure the emotional states of depression, anxiety, and stress in healthcare workers, and not to diagnose them as having psychopathologies stated in classificatory systems such as the DSM-5.

Recommendations

It is recommended that a follow-up study be done since psychological distress can persist beyond the pandemic's surge period. Also the development and implementation of hospital interventions and programs are recommended to mitigate the impact of sustained psychological distress on mental health and physical wellbeing of hospital healthcare workers.

Statement of Authorship

All authors certified fulfillment of ICMJE authorship criteria.

Author Disclosure

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APPENDICES

Appendix Table 1. Psychosocial Responses of Health Care Personnel

Ratings	Doctors, n (%)	Nurses, n (%)	*p*-value
DASS-21 Scale			
Depression			
Normal	79 (31.6)	146 (45.5)	
Mild	38 (15.2)	47 (14.6)	
Moderate	56 (22.4)	67 (20.9)	<0.01*
Severe	31 (12.4)	26 (8.1)	
Extremely Severe	46 (18.4)	35 (10.9)	
Anxiety			
Normal	95 (38.0)	82 (25.6)	
Mild	43 (17.2)	50 (15.6)	
Moderate	41 (16.4)	54 (16.8)	<0.01*
Severe	22 (8.8)	48 (15.0)	
Extremely Severe	49 (19.6)	87 (27.1)	
Stress			
Normal	118 (47.2)	174 (54.2)	
Mild	41 (16.4)	44 (13.7)	
Moderate	42 (16.8)	51 (15.9)	0.55
Severe	33 (13.2)	36 (11.2)	
Extremely Severe	16 (6.4)	16 (15.0)	
Ratings	**Median (Minimum-Maximum)**		***p*-value**
Filipino Coping Strategies			
Cognitive Reappraisal	23 (2-89)	43 (2-89)	<0.01*
Social Support	48 (2-93)	53 (4-93)	0.04*
Problem-Solving	39 (3-89)	67 (6-89)	<0.01*
Religiosity	39 (5-89)	75 (5-89)	<0.01*
Tolerance	35 (4-90)	27 (4-90)	<0.01*
Emotional Release	37 (2-95)	38 (4-97)	0.46
Over-activity	21 (2-96)	29 (2-96)	0.07
Relaxation/Recreation	26 (5-84)	27 (4-84)	0.12
Substance Use	47 (13-95)	30 (13-87)	0.22

* *p<0.05*

Appendix Table 2. Psychosocial Responses of Health Care Personnel Age in Years and Years in Service

Ratings	Age in years	95% CI	Years in service	95% CI
DASS-21 Scale				
Depression	-0.223	-(0.143 to 0.299)*	-0.197	-(0.116 to 0.274)*
Anxiety	-0.033	-0.115 to 0.049	0.017	-0.065 to 0.099
Stress	-0.178	-(0.098 to 0.257)*	-0.123	-(0.042 to 0.203)*
Filipino Coping Strategies				
Cognitive Reappraisal	0.270	0.192 to 0.344*	0.278	0.201 to 0.352*
Social Support	0.001	-0.082 to 0.082	0.075	-0.007 to 0.156
Problem-Solving	0.225	0.146 to 0.302*	0.277	0.200 to 0.351*
Religiosity	0.361	0.287 to 0.430*	0.440	0.372 to 0.504*
Tolerance	0.073	-0.009 to 0.154	0.108	0.026 to 0.189*
Emotional Release	0.088	0.005 to 0.168*	0.161	0.080 to 0.240*
Over-activity	-0.003	-0.085 to 0.079	0.044	-0.038 to 0.126
Relaxation/Recreation	-0.032	-0.114 to 0.050	0.017	-0.065 to 0.099
Substance Use	-0.073	-0.154 to 0.009	-0.105	-(0.023 to 0.185)*

* *p<0.05*

Appendix Table 3. Psychosocial Responses of Health Care Personnel across Types of Units of Assignment

Ratings	Overall, n (%)	Non-COVID Area, n (%)	COVID Area, n (%)	Both Types of Areas, n (%)	*p*-value
DASS-21 Scale					
Depression					
Normal	225 (39.4)	95 (42.4)	102 (36.4)	28 (41.8)	
Mild	85 (14.9)	32 (14.3)	41 (14.6)	12 (17.9)	
Moderate	123 (21.5)	46 (20.5)	66 (23.6)	11 (16.4)	0.74
Severe	57 (10.0)	18 (8.0)	33 (11.8)	6 (9.0)	
Extremely Severe	81 (14.2)	33 (14.7)	38 (13.6)	10 (14.9)	
Anxiety					
Normal	177 (31.0)	87 (38.8)	71 (25.4)	19 (28.4)	
Mild	93 (16.3)	36 (16.1)	45 (16.1)	12 (17.9)	
Moderate	95 (16.6)	37 (16.5)	48 (17.1)	10 (14.9)	0.05*
Severe	70 (12.3)	17 (7.6)	43 (15.4)	10 (14.9)	
Extremely Severe	136 (23.8)	47 (21.0)	73 (26.1)	16 (23.9)	
Stress					
Normal	292 (51.1)	124 (55.4)	137 (48.9)	31 (46.3)	
Mild	85 (14.9)	31 (13.8)	44 (15.7)	10 (14.9)	
Moderate	93 (16.3)	33 (14.7)	48 (17.1)	12 (17.9)	0.89
Severe	69 (12.1)	26 (11.6)	33 (11.8)	10 (14.9)	
Extremely Severe	32 (5.6)	10 (4.5)	18 (6.4)	4 (6.0)	
Ratings	**Median (Minimum-Maximum)**				***p*-value**
Filipino Coping Strategies					
Cognitive Reappraisal	31 (2-89)	27 (2-89)	33 (2-89)	18 (7-89)	<0.01*
Social Support	48 (2-93)	48 (7-93)	48 (2-93)	48 (7-92)	0.60
Problem-Solving	48 (3-89)	48 (3-89)	58 (6-89)	40 (9-89)	0.03*
Religiosity	51 (5-89)	51 (5-89)	51 (5-89)	33 (5-89)	0.04*
Tolerance	35 (4-90)	31 (4-90)	35 (4-90)	35 (10-90)	0.22
Emotional Release	38 (2-97)	38 (2-95)	38 (2-97)	38 (2-95)	0.82
Over-activity	21 (2-96)	21 (2-96)	21 (2-96)	21 (6-91)	0.95
Relaxation/Recreation	27 (4-84)	27 (4-84)	27 (4-84)	24 (5-84)	0.95
Substance Use	40 (13-95)	40 (13-95)	43 (13-87)	40 (13-87)	0.78

* *p<0.05*

Appendix Table 4. Psychosocial Responses of Health Care Personnel across Sex

Ratings	Male, n (%)	Female, n (%)	*p*-value
DASS-21 Scale			
Depression			
Normal	58 (33.9)	167 (41.8)	
Mild	23 (13.5)	62 (15.5)	
Moderate	44 (25.7)	79 (19.8)	0.12
Severe	23 (13.5)	34 (8.5)	
Extremely Severe	23 (13.5)	58 (14.5)	
Anxiety			
Normal	53 (31.0)	24 (31.0)	
Mild	32 (18.7)	61 (15.3)	
Moderate	28 (16.4)	67 (16.8)	0.68
Severe	23 (13.5)	47 (11.8)	
Extremely Severe	35 (20.5)	101 (25.3)	
Stress			
Normal	84 (49.1)	208 (52.0)	
Mild	31 (18.1)	54 (13.5)	
Moderate	29 (17.0)	64 (16.0)	0.56
Severe	20 (11.7)	49 (12.3)	
Extremely Severe	7 (4.1)	25 (6.3)	
Ratings	**Median (Minimum-Maximum)**		***p*-value**
Filipino Coping Strategies			
Cognitive Reappraisal	15 (5-81)	33 (2-89)	<0.01*
Social Support	61 (2-93)	35 (4-92)	0.04*
Problem-Solving	19 (8-71)	58 (3-89)	<0.01*
Religiosity	57 (7-89)	51 (5-79)	<0.01*
Tolerance	35 (5-90)	23 (4-87)	0.36
Emotional Release	49 (4-97)	26 (2-95)	<0.01*
Over-activity	21 (2-90)	21 (2-96)	0.93
Relaxation/Recreation	27 (5-84)	24 (4-84)	0.23
Substance Use	30 (13-93)	48 (21-95)	<0.01*

* *p<0.05*

Appendix Table 5. Psychosocial Responses of Health Care Personnel across Living Arrangement

Ratings	Same, n (%)	Different, n (%)	*p*-value
DASS-21 Scale			
Depression			
Normal	152 (40.9)	73 (36.7)	
Mild	49 (13.2)	36 (18.1)	
Moderate	85 (22.9)	38 (19.1)	0.37
Severe	37 (10.0)	20 (10.1)	
Extremely Severe	49 (39.2)	32 (16.1)	
Anxiety			
Normal	119 (32.0)	58 (29.2)	
Mild	62 (16.7)	31 (15.6)	
Moderate	62 (16.7)	33 (16.6)	0.37
Severe	38 (10.2)	32 (16.1)	
Extremely Severe	91 (24.5)	45 (22.6)	
Stress			
Normal	196 (52.7)	96 (48.2)	
Mild	54 (14.5)	31 (15.6)	
Moderate	64 (17.2)	29 (14.6)	0.29
Severe	42 (11.3)	27 (13.6)	
Extremely Severe	16 (4.3)	16 (8.0)	
Ratings	**Median (Minimum-Maximum)**		***p*-value**
Filipino Coping Strategies			
Cognitive Reappraisal	31 (2-89)	33 (2-89)	0.74
Social Support	35 (2-93)	53 (2-93)	0.01*
Problem-Solving	48 (6-89)	48 (3-89)	0.33
Religiosity	51 (5-89)	51 (5-89)	0.98
Tolerance	35 (4-90)	35 (4-90)	0.12
Emotional Release	38 (2-95)	38 (2-97)	0.99
Over-activity	25 (2-96)	21 (2-96)	0.38
Relaxation/Recreation	24 (4-84)	27 (7-84)	0.33
Substance Use	40 (13-87)	40 (13-95)	0.99

* *p<0.05*

Appendix Table 6. Psychosocial Responses of Health Care Personnel across Presence of Co-morbidities

Ratings	Without Co-morbidities, n (%)	With Co-morbidities, n (%)	*p*-value
DASS-21 Scale			
Depression			
Normal	147 (38.9)	78 (40.4)	
Mild	61 (16.1)	24 (12.4)	
Moderate	77 (20.4)	46 (23.8)	0.33
Severe	34 (9.0)	23 (11.9)	
Extremely Severe	59 (15.6)	22 (11.4)	
Anxiety			
Normal	123 (32.5)	54 (28.0)	
Mild	61 (16.1)	32 (16.6)	
Moderate	64 (16.9)	31 (16.1)	0.52
Severe	48 (12.7)	22 (11.4)	
Extremely Severe	82 (21.7)	54 (28.0)	
Stress			
Normal	191 (50.5)	101 (52.3)	
Mild	61 (16.1)	24 (12.4)	
Moderate	64 (16.9)	29 (15.0)	0.56
Severe	41 (10.9)	28 (14.5)	
Extremely Severe	21 (5.6)	11 (5.7)	
Ratings	**Median (Minimum-Maximum)**		***p*-value**
Filipino Coping Strategies			
Cognitive Reappraisal	27 (2-89)	33 (2-89)	0.12
Social Support	48 (2-93)	53 (4-93)	0.16
Problem-Solving	48 (3-89)	58 (6-89)	<0.01*
Religiosity	51 (5-89)	51 (5-89)	0.99
Tolerance	35 (4-90)	35 (4-90)	0.16
Emotional Release	37 (2-95)	38 (2-97)	0.25
Over-activity	21 (2-96)	32 (2-96)	0.02*
Relaxation/Recreation	27 (4-84)	24 (4-84)	0.63
Substance Use	40 (13-93)	40 (13-95)	0.88

* *p<0.05*

Appendix Table 7. Psychosocial Responses of Health Care Personnel across Areas of Assignment

Ratings	Single Area of Assignment, n (%)	Multiple Areas of Assignment, n (%)	*p*-value
DASS-21 Scale			
Depression			
Normal	155 (42.6)	70 (33.8)	
Mild	51 (14.0)	34 (16.4)	
Moderate	72 (19.8)	51 (24.6)	0.32
Severe	36 (9.9)	21 (10.1)	
Extremely Severe	50 (13.7)	31 (15.0)	
Anxiety			
Normal	117 (32.1)	60 (29.0)	
Mild	51 (14.0)	42 (20.3)	
Moderate	59 (16.2)	36 (17.4)	0.23
Severe	43 (11.8)	27 (13.0)	
Extremely Severe	94 (25.8)	42 (20.3)	
Stress			
Normal	194 (53.3)	98 (47.3)	
Mild	44 (12.1)	41 (19.8)	
Moderate	62 (17.0)	31 (15.0)	0.16
Severe	44 (12.1)	25 (12.1)	
Extremely Severe	20 (5.5)	12 (5.8)	
Ratings	**Median (Minimum-Maximum)**		***p*-value**
Filipino Coping Strategies			
Cognitive Reappraisal	33 (2-89)	26 (2-89)	<0.01*
Social Support	48 (2-93)	48 (4-93)	0.41
Problem-Solving	58 (3-89)	48 (6-89)	<0.01*
Religiosity	51 (5-89)	48 (5-89)	0.01*
Tolerance	35 (5-90)	35 (4-90)	0.55
Emotional Release	38 (4-97)	37 (2-95)	0.15
Over-activity	29 (2-96)	21 (2-96)	0.04*
Relaxation/Recreation	30 (4-84)	24 (4-84)	<0.01*
Substance Use	40 (13.93)	47 (13-95)	0.29

* *p<0.05*

Appendix Table 8. Psychosocial Responses of Health Care Personnel across Civil Status

Ratings	Married, n (%)	Single/Separated/Widowed, n (%)	*p*-value
DASS-21 Scale			
Depression			
Normal	98 (55.7)	127 (32.2)	
Mild	22 (12.5)	63 (16.0)	
Moderate	33 (18.8)	90 (22.8)	<0.01*
Severe	11 (6.3)	46 (11.7)	
Extremely Severe	12 (6.8)	69 (17.5)	
Anxiety			
Normal	52 (29.6)	125 (31.7)	
Mild	29 (16.5)	64 (16.2)	
Moderate	34 (19.3)	61 (15.4)	0.81
Severe	22 (12.5)	48 (12.2)	
Extremely Severe	39 (22.2)	97 (24.6)	
Stress			
Normal	109 (61.9)	183 (46.3)	
Mild	24 (13.6)	61 (15.4)	
Moderate	25 (14.2)	68 (17.2)	0.01*
Severe	12 (6.8)	57 (14.4)	
Extremely Severe	6 (3.4)	26 (6.6)	
Ratings	**Median (Minimum-Maximum)**		***p*-value**
Filipino Coping Strategies			
Cognitive Reappraisal	43 (5-89)	26 (2-89)	<0.01*
Social Support	48 (7-93)	48 (2-93)	0.59
Problem-Solving	67 (10-89)	48 (3-89)	<0.01*
Religiosity	79 (16-89)	42 (5-89)	<0.01*
Tolerance	31 (10-90)	35 (4-90)	0.01*
Emotional Release	38 (4-95)	38 (2-97)	0.25
Over-activity	21 (2-96)	21 (2-96)	0.77
Relaxation/Recreation	24 (7-84)	27 (4-84)	0.48
Substance Use	21 (13-87)	47 (13-95)	0.13

* *p<0.05*