The Psychological Impact and Coping Mechanisms of Healthcare Workers during the COVID-19 Pandemic

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Abstract: - Mental health is an emerging non-communicable disease in the Philippines. With numerous studies showing the effects of the COVID-19 pandemic on the people, the need to assess its psychological impact on healthcare workers became a necessity. The goal of the study was to examine for signs relating to depression, anxiety, and stress via questions based on the DASS-21; conditions exhibited that may be related to post-traumatic stress disorder (PTSD); and the coping mechanisms. As per the respondents' request, the institution's name is not to be disclosed. The inclusion criteria for the study were licensed healthcare professionals, regardless of the type of employment (full-time, part-time, voluntary, etc.). A total of 114 respondents were given the self-administered survey, and the majority of them were physicians and nurses. In terms of the DASS-21, the majority have shown less impact by the pandemic but there were a few to have been affected by the pandemic psychologically. Results from the IES-R show varied results, in which 36.84% have little or no signs relating to post-traumatic stress, 41.23% with several signs, and 21.93% with greatly increased signs of post-traumatic stress. The phenomenon was due to the continuous psychological impact that has led to the increased signs of the said related illness. As for the Brief-COPE, the approach method was the most widely used strategy used to cope. The recommendations for the study are to focus on other age groups, departments, the effectiveness and comparison among the coping mechanisms, and the correlation between DASS-21 and IES-R.

Key Words: — ***Mental health, COVID-19, DASS-21, IES-R, Brief-COPE.***

I. INTRODUCTION

Confirmation of the first local transmission of the virus was on March 6, 2020, from a man who had no travel history overseas but contracted the virus. As a result, classes were suspended, and the work-from-home strategy was carried out. On March 8 of that year, a state of public health emergency was declared. To combat the outbreak, the University of the Philippines (UP) developed testing kits, which were approved by the Food and Drug Administration (FDA).

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The travel ban was expanded to all countries and quarantine on numerous provinces was implemented due to the evidence of local transmission. These events urged hospitals to start testing for the disease, leading to a faster diagnosis. The people were then instructed to wear face masks and face shields, practice social distancing and perform hand washing at all times. Other government efforts included building quarantine facilities and accredited testing centers for the gold standard of diagnosis of the disease [1].

Given this, the study aimed to identify the psychological impact and coping mechanisms of healthcare workers during the COVID-19 pandemic. Specifically, the research study further aimed to evaluate the severity of the common symptoms of the healthcare workers related to mental health conditions based on the Depression, Anxiety, and Stress Scales-21 (DASS-21) and the Impact of Events Scale-Revised (IES-R); and, determine the

coping mechanisms of the healthcare workers using the Brief-Coping Orientation to Problems Experienced (Brief-COPE) scale that assesses the coping mechanisms of an individual in times of adversities.

The findings of the study will bring about an impact to different aspects that are related to the psychological impact and coping mechanisms of the healthcare workers once completed. These aspects include mental health, the community, government and organizations, education, and future research.

The major limitation was that the study solely focused on the psychological impact and coping mechanisms of the healthcare workers without regard to expertise in their respective fields. The self-administered surveys were deployed to medical personnel under a general scope where some might be more medically trained than others. In addition, the healthcare workers to be given the self-administered questionnaire were not clinically diagnosed with mental health illnesses. The researchers are only to determine the symptoms based on the mental health conditions as described by the DASS-21 and IES-R. Lastly, the self-administered survey was subjective, thus it may vary per respondent in terms of the frequency and severity of the symptoms they were experiencing as related to mental illnesses.

II. LITERATURE REVIEW

The outbreak has taken a toll in countries affected by COVID-19, particularly the healthcare workers who have been serving and working against the virus. With the continuous struggle, the professionals were further challenged to deal with these problems every day. Fear, anxiety, exhaustion, stress, insomnia, distress and uncertainty were reported as the responses of healthcare workers engaged in COVID-19 patient care (Shaukat, N., et al., 2020) [2].

As 2020 ended with new cases added each day, there came a need to heed to the well-being of the Filipino people. The pandemic has brought some unprecedented challenges to both the country and the other nations. Many communities experienced a state of panic during the starting months as the lockdowns brought mass hysteria and limited livelihood. The new changes seen have taken a heavy toll on the mental health of each Filipino as the country cautiously and slowly adjusted to the "new normal" (Quintos, 2020) [3]. Therefore, a new layer of distress and fear presented itself as individuals learned to adapt to the new protocols and unwillingly faced the uncertainties regarding the outcome of this pandemic. As stated by Tee et al. (2020), these emotional traumas of being infected and socio-economic stressors also contributed to the psychological impact of the whole country and must be taken into consideration to avoid succumbing further. Protocols need to be modified and interventions are therefore needed to aid the entire mental well-being and care of the general public [4].

Interventions in dealing with mental health must also be extended among the healthcare workers in the Philippines to aid them psychologically, emotionally and spiritually (Biana & Joaquin, 2020) [5]. The healthcare system was overwhelmed as the rate of newly admitted patients continued, and with this the healthcare workers cycled through the same routine of catering to the infected patients. As a result, burnouts and fatigue were unavoidable and the occurrences of death brought forth depression on the minds of not only the families but also the healthcare providers. It was a challenge for these healthcare workers to provide the most basic health needs especially in the perspective of a developing country which also dictates the nation's ability to respond to the pandemic (Buenaventura et al., 2020) [6].

Villanueva et al. (2020) described how medical workers and their families were becoming more fearful and anxious due to the high risks of getting infected by the disease. Additionally, stigmatization and discrimination affecting COVID-19 patients and the professionals themselves were common in the general public. Health workers spoke to UNICEF regarding their struggles and incidents of eviction, ridicule and harassment which were becoming apparent. Medical technologists and laboratory technicians voiced out their concerns as they were exposed to the many specimens within the laboratory, further exposing them to the dangerous risks. They would rely on each other; however, it became truly fearful in facilities with little personnel or during shifts when they are alone [7].

III. RESEARCH METHODOLOGY

For accuracy, the research employed a non-experimental descriptive design through an online self-administered questionnaire that utilized questions from the IES-R, DASS-21, and the Brief-COPE scales.

The sample size was based on the total population of the healthcare workers in the tertiary government institution, which is 174. A 95% level of confidence was used. The estimated 70% of the healthcare workers having awareness to the situation was

based on the study "The Assessment of Healthcare Workers' Levels of Preparedness and Awareness Regarding COVID-19 Infection in Low-Resource Settings." Lastly, a 20% allowance was added to compute the total respondents. The participants in the study were not diagnosed with mental illnesses, but the severity of their symptoms associated with such were examined. The sampling technique was the non-probability convenience sampling.

The inclusion criteria included licensed professionals working in a medical institution regardless of the type of employment (full-time, part-time, etc.), which is based on the scope. On the other hand, the exclusion criteria were licensed professionals in probation, former medical workers currently practicing a different profession, and those who were performing administrative functions in an institution.

The digital survey had two parts, with Section A being the Informed Consent and B being the Questionnaire. The former included the title and a brief description of the study to show what the study was about and why it was conducted, the data to be gathered, and how the data will be processed and analyzed. It also bore the Inclusion and Exclusion Criteria, the Convention of Confidentiality, and the risks and a trigger warning due to the risk of psychological disturbance that the respondent may experience while answering the survey. On the other hand, the latter included the Demographic Data Collection Form that included the age group, years of service in the institution, and the department the respondent belongs to. Additionally, it included questions from DASS-21, IES-R, and Brief-COPE.

As per the ethical guidelines, the study required the approval of the Ethics Review Committee, as it involved human participants. The possible main risk of the project was the risk of psychological stress from the prompts relating to experiences while working during the pandemic. The participants only used their email address in order to answer the Google Forms deployed during data collection. Furthermore, a premade coding system based on the timestamp automatically provided by Google Sheets was used for anonymization. The data collected was saved in separate encrypted and protected hard drives to ensure the privacy of each participant. After analysis, all the data was properly disposed via deletion and formatting of the hard drive.

IV. FINDINGS AND DISCUSSION

For accuracy, the research included the age range, years of service, and occupation or department that the respondents belong in. The demographic data determined specifically the healthcare workers that have answered the survey, as age specificity is important to determine the impact of the pandemic and their respective coping mechanisms. It also determined which of the working population have answered the self-administered questionnaire, and the range with the least respondents will be added onto the recommendations. Years of service can be correlated with the age range as this reinforces the interpretation in terms of the ability of the respondents to participate in the survey. Moreover, this can attribute to the coping mechanisms of the workers as those who have stayed longer in service have better management of work. Lastly, those with less respondents in other departments will be written in the recommendation as well.

Table.1. Age Range of Respondents

Age Range	f	%
25-30	11	9.649
31-36	36	31.58
37-42	15	13.16
43-48	17	14.91
49-54	23	20.18
55-61	12	10.53
Total	114	100

Table 1 shows the age groups the respondents belong in. The majority of the respondents fall within the age range of 31 to 36, 31.58%. It is important to note that this was due to the capability and availability of the said group to answer self-administered surveys that are disseminated online. The inequality of the age range is to be added to the recommendations as it results to a varied and unproportionate fraction among the frequencies in the categories of DASS-21, IES-R, and Brief-COPE.

Table.2. Age Range of Respondents

Years of Service	f	%
1-5	20	17.54
6-10	38	33.33
11-15	16	14.04
16-20	14	12.28
21-25	9	7.895
26-30	17	14.91
Total	114	100

Table 2 signifies the years of service of the respondents, in which the majority falls within the six (6) to ten (10) years of working in the institution. Association with the age group is unclear, as the said table is grouped based on the years of service and is not related with the age range.

Table.3. Other Parameters on the Age of the Respondents

Variable	Age	Years of Service
N	114	114
Mean	41.9	13.8
Md	40.5	10
Mode	36	10
SD	9.27	8.46
IQR	16	13
Sk	0.21	0.55
Kur	-1.3	-0.9
R	36	29
Min	25	1
Max	61	30

Table 3 shows further analysis for the demographic profile. From a sample of 114 respondents, the age range is from 25 to 61 years old, and the years of service is from one (1) to 30 years. In the study, the median value is best analyzed as it is not skewed by a small proportion of extremely high or extremely low value, showing a better representation of the values at hand. The median age of the respondents is 40.5 years old, and the median length of service is 10 years. The median length of service is the mode as well, with majority of the respondents serving for ten (10) years in the institution. The standard deviations (SD) of both the age and the years of service show that there is great variability in the respondents in terms of both the parameters, further showing the variety among the respondents. Negative kurtosis in both the age and years of service tells of varied data, which is justified by the high SD and range between the least and the greatest values garnered by data gathering. In addition, both the age and years of service have a positive value in terms of skewness, thus majority of the respondents have data lower than the mean, showing consistency with the mode of both parameters.

Table.4. Occupation or Department of the Respondents

Occupation or Department	f	%
Caregiver	3	2.632
Nursing Attendant	1	0.877
Occupational Therapy Technician	1	0.877
Ophthalmologist	1	0.877
Registered Nurse	29	25.44
Registered Physician	79	69.3
Total	114	100

Table 4 shows the department the respondents belong to, with 69.3% or 79 being licensed physicians. Next is the nurses that comprises 25.44% of the respondents. The lack of healthcare workers from other departments is a recommendation, as the table shows the emphasis on physicians and nurses, thus there is limited variety on the personnel who have taken part of the study.

Table.5. Frequencies on the Level of Depression, Anxiety, and Stress

	Depression		Anxiety		Stress	
	f	%	f	%	f	%
Normal	100	87.72	103	90.35	113	99.12
Mild	13	11.4	3	2.632	1	0.877
Moderate	1	0.877	7	6.14	0	0
Severe	0	0	1	0.877	0	0
Extremely Severe	0	0	0	0	0	0
Total	114	100	114	100	114	100

The frequencies on the level of depression, in which 87.72% of the sample population does not experience the signs. However, there are a few who have shown mild and moderate symptoms relating to the said illness.

In terms of the frequencies on the level of anxiety, 90.35% of the sample population does not experience anxiousness. There are also those who are experiencing mild to moderate signs. It is also important to note that one (1) respondent is experiencing severe symptoms, which is alarming as this is indicative of a negative impact of the COVID-19 pandemic on the anxiety level of one of the respondents in the total sample population.

The level of stress of the respondents shows that 99.12% experiencing normal stress levels to working in the COVID-19 pandemic, with one (1) experiencing mild stress.

Table.6. Descriptive Statistics for the DASS-21

Variable	Depression	Anxiety	Stress
N	114	114	114
Mean	3.2	2.64	4.82
Md	2	2	4
Mode	0	0	3
SD	3.71	3.18	3.55
IQR	4.75	4	5
Sk	1.43	1.51	0.64
Kur	1.28	2.09	-0.2

Note: Md = median, SD = standard deviation, Sk = skewness, Kur = kurtosis

Table 6 shows further analysis of the three parameters for the DASS-21. From a sample of 114 respondents, the majority of the respondents answered zero (0), the numerical equivalent for "Not applicable/Does not apply" regarding depression and anxiety. For stress, however, the mode is a three (3), indicating quite elevated stress levels based on the answers in the given survey. The three parameters showing a positive value in terms of skewness show that the majority of the respondents have data lower than the mean, showing consistency with the mode of the three parameters. The positive kurtosis on depression and anxiety tells of similarly close data, which is justified by a value of zero (0) on the mode garnered. On the other hand, the negative kurtosis on the stress is indicative of a varied distribution between the respondents, however, the results still fall in the normal levels despite the variety.

Table 7. Frequencies for the Revised Impact of Event Scale

Level	f	%
Little or no symptoms relating to post-traumatic stress	42	36.84
Several symptoms relating to post-traumatic stress	47	41.23
May be indicative of post-traumatic stress disorder	25	21.93
Total	114	100

The impact of event scale reveals that 36.84% of the respondents have little or no symptoms relating to post-traumatic stress, 41.23% have several symptoms relating to the said disorder, and 21.93% have signs related to PTSD. The result shows that although depression, anxiety, and stress may

not be as evident in severity, persistent signs and symptoms may have contributed to the given result in Table 7.

This part is an integral section of the survey, as it determines the symptoms relating to an illness with severe signs and symptoms, as the items of DASS-21 only asks for occurrences that may indicate the three said parameters, but is not as indicative as the IES-R. In addition, studies Given this, it is to be suggested in the recommendation that future studies may opt between the two for a more specific approach on the matter.

Table.8. Means and Standard Deviations for the Coping Strategies

Coping Strategies	M	SD
Avoidant	10.96	7.931
Self-Distractions	4.211	2.448
Denial	0.947	1.444
Substance Abuse	0.667	1.561
Behavioral Disengagement	1.351	1.785
Venting	2.325	1.971
Self-Blame	1.447	1.78
Approach	19.33	11.13
Active Coping	4.14	2.471
Emotional Support	4.088	2.78
Use of Informational Support	2.842	2.466
Positive Reframing	4.43	2.806
Planning	3.833	2.654
Acceptance	2.991	2.389
Neither	7.368	4.038
Humor	2.702	2.289
Religion	4.667	2.269

Table 8 shows that most of the respondents' coping mechanism use the approach method, as seen wherein there is a 19.3 mean. Next is the avoidant method, with a 10.9 mean. Lastly is neither, in which there is a 7.37 mean on the respondents who answered. The high value of SD shows varied responses, as seen in the means of the parameters of the three main groups of coping mechanisms.

The results show inconsistencies between DASS-21 and the IES-R, with the latter indicating signs of PTSD among the respondents while the former showing little areas of concern regarding depression, anxiety, and stress. This is due to studies stating that symptoms of PTSD, when not properly managed or treated, may cause depression and anxiety. As for the coping strategies, psychologists have recommended the approach method, which is done by most of the respondents.

V. CONCLUSION

To answer the problem statements and objectives, the researchers have gathered data and had it analyzed to arrive at the fourth chapter. The tables and information regarding the mental health status of the respondents and their coping mechanisms explained the results of the data gathering performed. With this, the researchers have arrived at the conclusion and recommendations for the study.

The demographic profile of the respondents shows that the age groups 31 to 36, 43 to 48, and 49 to 54 of the physicians and nursing department make up the most portion in the respondents. Majority of these also fall within the range of six (6) to ten (10) years of service in their respective institution.

In terms of the DASS-21, the healthcare workers exhibited no signs of depression, at 87.72%, however quite a number have expressed signs of mild to moderate depression. On the level of anxiety, despite the majority having normal expressions of anxiousness, mild to severe cases have been detected. Lastly, for the stress levels, only one is detected to be experiencing mild stress.

The IES-R, on the other hand, has shown that 41.23% have several symptoms relating to PTSD, and 21.93% have signs related to the said illness. As the IES-R is more indicative of a more serious matter, the study concludes that signs relating to PTSD is an emerging consequence of the COVID-19 pandemic despite the normal levels of signs relating to mental health as per the DASS-21. Given this, patient monitoring and referral to a professional is encouraged for those exhibiting mild and increased signs relating to post-traumatic stress.

Lastly, the Brief-COPE table indicated that the approach method is the most widely practiced among the respondents.

The limitations of the study are listed below as recommendations, should future research be done for improvement and to arrive at a greater scope. 1) The age groups 25 to 30, 37 to 42, and 55 to 61 be studied regarding their mental health status, as the study has garnered the least respondents of these ranges. 2) Departments other than the nursing department must also be studied using the parameters to determine the mental health status, as the research gathered 25.44% and 0.877% nurses and a nursing attendant, respectively. Moreover, the majority of the respondents of the study are registered physicians, at 69.3%, thus this group need not be prioritized by future studies. 3) As the study only focused on determining the psychological impact of the COVID-19 pandemic and the coping mechanisms of the healthcare workers, the effectiveness of the coping strategies is yet to be assessed. 4) Effectiveness of the Approach Method of the Brief-COPE is to be probed and compared with the two other strategies.

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