Mental Health Impact of COVID-19 Pandemic on Medical Technologists in Government Hospitals in Cavite Province

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Abstract: - With the alarmingly high number of COVID-19 cases, the pandemic continuously poses a great threat to the general public. Healthcare workers (HCWs) are at higher risk of contracting the infection as they have direct exposure to the patients. The nature of their profession along with several sociodemographic and work-related factors can affect not only their physical health but also their mental health. Thus, the need to evaluate the impact of the pandemic on the mental health of HCWs such as medical technologists starts to arise. This study aims to assess the psychological impact of the COVID-19 pandemic on the mental health of medical technologists in government hospitals in the province of Cavite. In this cross-sectional study, registered medical technologists in seven government hospitals in Cavite Province will partake in the study. A two-part questionnaire in Google Forms, which is in the form of a link, will be sent via email for the participants to answer. Spearman's rho correlation will be utilized to analyze the gathered data. A total of 44 registered medical technologists (RMTs) participated in the study which was composed of 29 (65.9%) females and 15 (34.1%) males. Most of the participants (38.6%) belonged to the 21-30 years old age bracket. The RMTs were classified according to their marital status and average monthly income, where the majority are single (61.4%) and earn Php 15,001-30,000 (52.3%), respectively. Their hospital affiliation and number of years in service were also taken into consideration, data shows that most participants came from General Emilio Aguinaldo Memorial Hospital (54.5%) and have been working as a medical technologist for more than 10 years (50.0%). Through the DASS-21, the researchers were able to measure and evaluate the presence of depressive, anxiety, and stress symptoms among the respondents. Sociodemographic factors that were identified to have a significant association with the psychological status of the RMTs were age ($p = .0015$) and sex ($p = 0.008$ and $p = 0.005$). While most of the participants (56.8%) were provided with personal protective equipment, the researchers found out that the absence of these supplies is associated with stress ($p = 0.026$) and depressive ($p = 0.016$) symptoms among them. The classification of hospitals is not associated with any of the three domains of psychological status. The COVID-19 pandemic has a significant impact on the mental health of the medical technologists and their work. Age and gender are important factors in determining the severity of the signs and symptoms of psychological distress including depression, anxiety, and stress. The lack of personal protective equipment (PPE) greatly affects their mental health status in the workplace. Moreover, health care workers, like medical technologists, can also experience mental health problems especially during these times, therefore, interventions should be enforced to address these psychological burdens.

Key Words: — ***Mental health, COVID-19 pandemic, medical technology, healthcare workers/professionals, frontliners.***

I. INTRODUCTION

In the first quarter of the year 2020, a global crisis has occurred. The cases of "viral pneumonia" reported from China in December 2019 were identified as a novel coronavirus in January 2020. According to the World Health Organization (WHO), the novel coronavirus, named severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2), is responsible for COVID-19 which is an infectious disease that causes a mild to moderate respiratory illness that could be recovered from without special treatment. However, according to the Centers for Disease Control and Prevention (CDC),

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immunocompromised individuals infected by the disease may become severely ill. With the alarmingly high levels of spread and severity of the disease, the WHO declared it as a pandemic in March 2020. Amidst this spreading in different countries throughout the world, the healthcare workers (HCW) remained to be the most involved in the treatment and screening of this condition. Since then, health care professionals, such as doctors, nurses, and medical technologists have been serving as the "front-liners" during these times, which made them more vulnerable to the virus. They expose themselves to risks that may not only affect their physical health, but also their mental health. Among the main reasons for HCWs to experience psychological distress are their heavy workload, inadequate personal protective equipment (PPE), and lack of support from the government [1]. The infection rate among medical workers also brings a negative psychological impact on them [2].

Advancements in the vaccine development for SARS-CoV-2 are being made, and information regarding the epidemiology, pathogenesis, control, and prevention of the disease are emerging. However, measures to lessen the psychological distress among HCWs are limited [3]. The psychological well-being of an HCW is as significant as their role in mitigating the effects of the pandemic for their psychological state also affects their physical well-being. Various studies have also revealed the strong link between mental and physical health. Ohrnberger *et al.* [4], using mediation analysis, have examined the relationship between physical and mental health in terms of the direct and indirect effects of physical health on mental health and vice versa. They found that past physical or mental health has strong effects on the present. In The Journal of the Economics of Ageing, Ohrnberger *et al.* [5] conducted another research on the dynamic relationship between mental and physical health and moderate state-dependence of physical and mental health. They have concluded from their findings that past mental or physical health has a stronger influence on present physical or mental health compared to past physical activities and education, or income, insurance, and education, respectively.

According to WHO, around 14% of total COVID-19 cases reported to them were health workers. Pappa *et al.* [6] conducted a systematic review of the prevalence of mental health illnesses among HCW during the pandemic. The researchers found out that 1 in 4 HCW reported to have depression and anxiety, while 1 in 3 suffered insomnia. Loneliness also has a significant association with mental and physical health [7]. HCWs are obligated to isolate themselves from their family to prevent the further spread of the COVID-19 disease. They may constantly have patient or worker-to-worker interactions; however, this may be accompanied by feelings of fear from contracting the disease and of worry for their patients. The emotional impact of loss is also unavoidable during the events of a pandemic. Quadt *et al.* [8] associated loneliness with negative affect and emotional distress. They have expressed the increased risk of morbidity and mortality on the detrimental effects of loneliness on mental and physical well-being.

Understanding the strong link between the mental and the physical well-being of HCWs supports the significance of their psychological states during the time of the pandemic, as it also affects their physical vulnerability. The province of Cavite, having a great number of COVID-19 cases, was chosen as the setting for the research to be conducted. Moreover, due to this occurrence, more HCWs in the said area have a greater risk of contracting the said virus. Also, according to the Department of Health (DOH), Cavite had been consistently in the top 3 provinces in the Philippines which recorded the greatest number of cases during the second quarter of 2020, up until the first quarter of 2021. This study aims to identify and examine the various factors that could contribute to the development of psychological distress among the HCWs, specifically medical technologists, not only in the province of Cavite but also in the Philippines. This study intends to support the foundation of measures that could lessen their psychological burdens.

II. METHODS

A. Study Design

This study used a descriptive research design, specifically, a survey, which included a questionnaire regarding the medical technologists' work, and a test to determine if they have signs and symptoms of depression, anxiety, and stress. Additionally, the demographic profile of the participants, such as age, sex, and marital status, was assessed. In this cross-sectional study, the researchers surveyed forty-nine (49) registered medical technologists from seven (7) different government hospitals in the province of Cavite.

Quantitative and qualitative results were obtained with the use of a questionnaire composed of two parts. The first part constituted questions related to their work in the hospital. The

said questions were formulated by the researchers. The second part was adopted from a validated survey from previous researches focusing on the measurement of psychological distresses like depression, anxiety, and stress.

B. Study Sample and Setting

The respondents were composed of a convenience sample of registered medical technologists who work in government hospitals in the province of Cavite, Philippines during the time of the COVID-19 pandemic. All respondents are working as full-time medical technologists at the seven hospitals. As the data collection was done online, each of them should have access to the Internet. Thus, medical technologists who do not have access to the online survey and had not worked during the pandemic and in the covered hospitals will be excluded from the study.

According to DOH, there are a total of nine licensed government hospitals in the province of Cavite. However, only seven hospitals are currently operational. Out of the seven hospitals, six are classified as primary hospitals and one as a tertiary hospital. Each primary hospital employs four registered medical technologists and the tertiary hospital houses 25 registered medical technologists hence, totaling 49 medical technologists. The researchers made use of the Raosoft Database Management System to obtain the convenience sample of 44, where the margin of error and confidence level are 5% and 95%, respectively.

C. Procedure

Data collection was carried out from 49 medical technologists of different public hospitals in Cavite, namely, Kawit Kalayaan Hospital (Kawit), General Trias Medicare Hospital (General Trias), General Emilio Aguinaldo Memorial Hospital (Trece Martires City), Cavite Municipal Hospital (Maragondon), Bacoor District Hospital (Bacoor City), Dasmariñas City Medical Center, Inc. (City of Dasmariñas) and Pagamutan Ng Dasmariñas (City of Dasmariñas), through an online survey. To determine a reliable sample size for this study, the Raosoft Database Management System was used where the margin of error and confidence level is set to 5% and 95%, respectively. Moreover, the population size was set at 49 individuals where six out of the seven hospital laboratories that were selected for data collection and classified as primary have four medical technologists each while the other that is a tertiary hospital have 25 medical technologists.

Prior to the data collection, a pretest was given to several respondents to test the reliability of the questionnaire. To collect data, the two-part survey questionnaire was utilized where the first part is about work-related information consisting of 10 questions regarding the experiences and work of the respondents amid the pandemic. Moreover, the second part was derived from an established questionnaire known as Depression, Anxiety, and Stress Scale - 21 (DASS-21) developed by Lovibond & Lovibond (1995) which is composed of three self-report scales formulated to determine an individual's state of depression, anxiety, and stress. This survey is a 21-item questionnaire, with each subscale having seven items rated based on a four-point Likert scale that ranges from zero to three. This was employed to assess the psychological impact of the crisis on medical technologists and not for the diagnosis of any mental disorder.

D. Ethical Considerations

In view of the ethical aspect of research, the respondents of the study were given ample time with the goal that they can depict their true views on the research questions. Consent from the respondents were obtained and proper authorization was likewise guaranteed for use of their given information. The researchers did not compel anyone to respond to the questionnaire and ensure that the confidentiality of the responses is strictly protected to guarantee the privacy of their information. To maintain confidentiality, codes were used on data files to restrict access to unauthorized personnel. Respondents have the right to withdraw at some random point in time as per the making of this study without any penalty if they want to. They can partake and contribute to the research study with their own will with no payment nor monetary exchange. The disclosure of the identity of the respondent would be dependent on their consent, where their identity will not be shown if they are not willing to. Furthermore, any personal information provided by the respondents were not disclosed to the public. The use of any secondary information from any source was recognized with appropriate reference. Report of the research findings that result from the investigation was accessible for the respondents to inform them regarding the commitments that they had given for the achievement of this research study. Information gathered from this research may be published and cited by other researchers in scientific studies.

However, there will be permanent deletion of information in a span of 5 years after completion. Ethical permissions were granted as this study was approved by the Faculty of Pharmacy-Research Ethics Committee (FOPREC) of the University of Santo Tomas, Manila, Philippines.

E. Statistical Analysis

Data were obtained via an online survey using Google Forms. This platform was used to tally the answers of the respondents and compile them in a single spreadsheet. The quantitative data gathered were analyzed using the IBM® SPSS® software.

For normally distributed data, the Pearson's correlation coefficient was the analytical method used to evaluate the statistical association of variables which include the sociodemographic factors and the results from the DASS-21 test. Otherwise, the Spearman rank correlation coefficient will be utilized. The level of significance was set at an α of 0.05.

III. RESULTS

A. Pretest

Twenty respondents answered the pretest conducted in March 2021. Cronbach's alpha was utilized to test for the reliability of the questionnaire. Only the items that are in scale form were evaluated.

Table.1. Reliability of the DASS-21

	Number of Items	Cronbach's Alpha
Depression scale	7	0.91
Anxiety scale	7	0.80
Stress scale	7	0.86
DASS-21 overall	21	0.95

It is shown on Table 1 that the DASS-21 showed an excellent internal consistency with an overall Cronbach's alpha value of 0.95 whereas the three domains, depression, anxiety, and stress, demonstrated alpha coefficients of 0.91, 0.80, and 0.86, respectively.

B. Sociodemographic Profile

During the survey period (April - May 2021), a total of 44 respondents participated and completed the survey. Since 44 was the target sample count, the data gathering was terminated once it reached the said desired number.Of the survey respondents, registered medical technologists of ages 21-30 years old constituted 38.6% of the responses. Most of them were female (65.9%), single (61.4%), and had a monthly income between Php 15,001 - Php 30,000 (52.3%). Twenty-four out of forty-four respondents came from General Emilio Aguinaldo Memorial Hospital. Additionally, 50% of them were working as a RMT for more than 10 years. Table 2 shows the different sociodemographic characteristics of the respondents.

C. Mental Health Status

Using the Depression, Anxiety, and Stress Scale - 21 (DASS-21), the respondents were categorized according to a degree in which their scores fall under.

Table.3. shows that most of the participants were severe (25%) or extremely severe (25%) for the Depression domain. Twenty were under the extremely severe degree for the Anxiety domain (45.5%). Lastly, 38.6% were classified as severe for the Stress domain. Table 3 shows the various degrees of the psychological status of the respondents for the three domains. However, these results do not diagnose the participants but only reveal the degree of the symptoms they are most likely showing in the respective domains.

Table.2. Sociodemographic characteristics of the participants (n = 44)

Characteristics	Frequency (n)	Percent (%)
Age in years		
21-30	17	38.6
31-40	12	27.3
41-50	12	27.3
51-60	3	6.8
Sex		
Female	29	65.9
Male	15	34.1
Marital Status		
Annulled	0	0.0
Married	15	34.1
Separated	1	2.3
Single	27	61.4
Widowed	1	2.3
Average monthly income in Php		
< 15,000	2	4.5
15,001 - 30,000	23	52.3
30,001 - 45,000	18	40.9
45,001- 60,000	1	2.3

> 60,001	0	0.0
Hospital Affiliation		
Bacoor District Hospital	4	9.1
Cavite Municipal Hospital	3	6.8
Dasmariñas City Medical Center, Inc.	2	4.5
General Emilio Aguinaldo Memorial Hospital	24	54.5
General Trias Medicare Hospital	3	6.8
Kawit Kalayaan Hospital	4	9.1
Pagamutan ng Dasmariñas	4	9.1
Number of Years in Service		
6 months - 1 year	2	4.5
1 - 3 years	5	11.4
4 - 6 years	11	25.0
7 - 9 years	4	9.1
>10 years	22	50.0
Php, Philippine peso		

D. Sociodemographic Factors

Spearman's rho correlation was used to assess the relationship between the sociodemographic characteristics of the participants and their psychological status, and between work-related factors and the psychological status of the participants instead of Pearson's correlation coefficient because the data were in either nominal or ordinal scale.

Table.4. presents the Spearman's rho correlation coefficients of the participants' sociodemographic details based on age, sex, marital status, monthly income, and hospital affiliation to their state of depression, anxiety, and stress. The age of the participants is negatively associated (rs = -.366) with statistical significance (p = .015) to the Anxiety Domain of DASS-21. In terms of sex, males are significantly associated with the Depression domain (rs = .396; p = .008) and with the Stress domain (rs = .419; p = .005) of DASS-21.

E. Work-related Factors

Table 5 shows the Spearman's rho correlation coefficient of the participants' work-related factors such as number of working hours, years of service, exposure to COVID-19 patients, experience of quarantine or personal isolation, provision of materials during the pandemic and availability of mental health support in their workplace in association with their level of depression, anxiety and stress. Only the factor on the supply of complete personal protective equipment showed statistically significant correlation with psychological domains. Absence of supply of these materials is associated with depression (rs = .361; p = .016) and stress (rs = .335; p = .026) among the participants.

The second part of the online survey included questions that provided information regarding work-related factors. Table 6 presents the data gathered from the closed questions. It shows that 75% (n = 33) of respondents have experience working in previous crises. During the pandemic, 70.5% (n = 31) had to work overtime, 86.4 % (n = 38) underwent quarantine or personal isolation, and 93.2% (n = 41) had physical contact with infected individuals. Regarding interventions of hospital administrations, 56.8% (n = 25) were provided with PPEs and 22.7% (n = 10) responded that their hospital provided supportive measures for the mental health of employees.

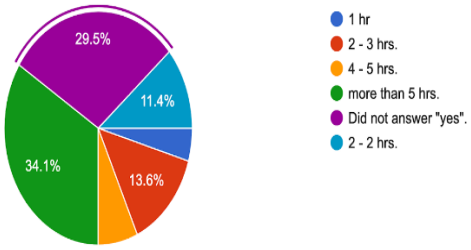

Fig.1. Summary of the responses on the number of extra hours taken during overtime

Figures 1 and 2 show the responses for the open questions. Shown on figure 3, 34.1% of the respondents must work an additional of more than 5 hours during the pandemic. This was based on the week before they answered the survey.

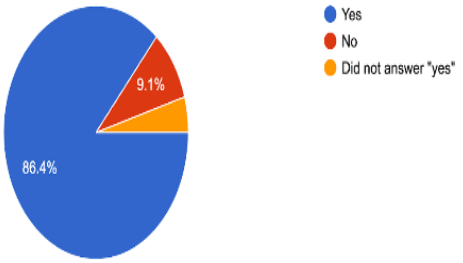

Fig.2. Summary of the responses of the reason the participant underwent quarantine/isolation

Figure.2 shows that 86.4% (*n* = 38) of the respondents have to undergo quarantine or personal isolation due to their work as medical technologists.

Table.3. Degree of the psychological status of the respondents (n=44)

	Psychological Status					
	Depression		**Anxiety**		**Stress**	
	Frequency (n)	**Percent (%)**	**Frequency (n)**	**Percent (%)**	**Frequency (n)**	**Percent (%)**
Normal	9	20.5	8	18.2	11	25
Mild	5	11.4	1	2.3	6	13.6
Moderate	8	18.2	7	15.9	7	15.9
Severe	**11**	**25.0**	8	18.2	**17**	**38.6**
Extremely Severe	**11**	**25.0**	**20**	**45.5**	3	6.8
Total	44	100	44	100	44	100

Table.4. Spearman's rho correlation coefficients between sociodemographic characteristics and psychological status of the participants (n=44)

Sociodemographic Characteristics		Psychological Status		
		Depression	Anxiety	Stress
Age	Correlation Coefficient	-.116	**-.366***	-.110
	Sig. (2-tailed)	.455	**.015**	.479
Sex	Correlation Coefficient	**.396****	.192	**.419****
	Sig. (2-tailed)	**.008**	.212	**.005**
Marital Status	Correlation Coefficient	-.221	-.077	-.166
	Sig. (2-tailed)	.149	.620	.280
Monthly Income Range	Correlation Coefficient	.132	-.018	.091
	Sig. (2-tailed)	.394	.907	.557
Hospital Affiliation	Correlation Coefficient	-.104	-.211	-.122
	Sig. (2-tailed)	.500	.169	.429

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

Table.5. Spearman's rho correlation coefficients between work-related factors and psychological status of the participants (n=44)

Work-related factors		Psychological Status		
		Depression	Anxiety	Stress
Number of working hours	Correlation Coefficient	.181	.028	.167
	Sig. (2-tailed)	.240	.855	.278
Number of years in service	Correlation Coefficient	.041	-.141	.040
	Sig. (2-tailed)	.792	.361	.798
Exposure to COVID patients	Correlation Coefficient	-.084	-.060	-.167
	Sig. (2-tailed)	.589	.698	.280
Quarantine or personal isolation experience	Correlation Coefficient	-.182	-.193	-.043
	Sig. (2-tailed)	.238	.208	.779
Supply of materials during the pandemic	Correlation Coefficient	**.361***	.203	**.335***
	Sig. (2-tailed)	**.016**	.186	**.026**
Workplace availability of mental health support	Correlation Coefficient	.223	.238	.134
	Sig. (2-tailed)	.145	.120	.387

***. Correlation is significant at the 0.01 level (2-tailed).*
**. Correlation is significant at the 0.05 level (2-tailed).*

Table.6. Summary of responses for closed questions regarding work-related information

Questions		Responses			
		Yes		No	
		n	*%*	*n*	*%*
Q1	*Do you have any experience working in previous crises (natural disasters: ex: typhoon) or pandemics (SARS outbreak)?*	33	75	11	25
Q2	*Do you have to work overtime during the pandemic?*	31	70.5	13	29.5
Q3	*Did you undergo quarantine or personal isolation over the course of the pandemic?*	38	86.4	6	13.6
Q4	*Have you had any physical contact with COVID-19 infected individuals during your shift?*	41	93.2	3	6.8
Q5	*Are you provided with complete personal protective equipment by the hospital?*	25	56.8	19	43.2
Q6	*Does the hospital you work for provide supportive measures for their employees' mental health?*	10	22.7	34	77.3
n, Frequency *%, Percent*					

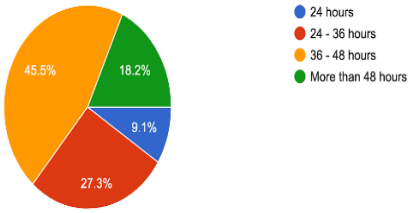

Fig.3. The average number of hours worked during the week before the survey was answered

The results for other work-related information are summarized in figures 2 and 3. Figure 3 shows the average number of hours the respondents have worked the week before the survey was answered. It shows that most respondents (45.5%; *n* = 20) worked for an average of 36 to 48 hours.

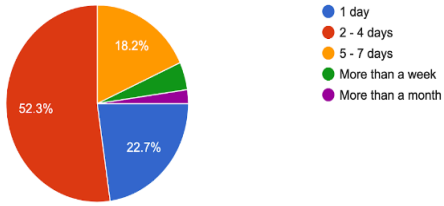

Fig 4. The number of days that have passed since the respondent's last day off

Figure 4 shows how many days or how long has it been since the respondent had his or her day off. Approximately 52% (n = 23) of the respondents answered that it has been 2 to 4 days since.

F. Hospital Classification

Table.7. Spearman's rho correlation coefficients between hospital classification and psychological status of the participants (n=44)

		Psychological Status		
		Depression	Anxiety	Stress
Hospital Classification	Correlation Coefficient	-.147	.156	-.069
	Sig. (2-tailed)	.340	.311	.655
**. Correlation is significant at the 0.01 level (2-tailed) *. Correlation is significant at the 0.05 level (2-tailed).				

Table 7 indicates that the classification of the hospital the participants are employed in is not associated with any of the three domains of psychological status.

IV. DISCUSSION

The cases of COVID-19 in the Philippines had continued to increase at alarming rates during the second half of 2020 to 2021. The Province of Cavite was the setting chosen by the researchers due to its consecutive inclusion in the top provinces/cities in terms of COVID-19 cases. The province also provided the right conditions to allow the researchers to fulfill the primary aim of the study which is to evaluate the psychological impact of the COVID-19 pandemic on the mental health of HCWs, specifically registered medical technologists. By correlating sociodemographic factors, work-related factors, and the classifications of the involved hospitals to the psychological states of the participants, the researchers were able to identify the significant factors that affect their mental health.

Generally, the findings from the present study show that the medical laboratory staff experienced psychological impacts brought by the COVID-19 pandemic which can be observed in the previous study of Khalid *et al.* [9] and Abolfotouh *et al.* [10] on MERS-CoV, and Koh *et al.* [11] on the SARS outbreak. In addition, healthcare professionals as the frontiers in any outbreaks, suffer from mental distress during and even years after epidemics. These results were evident from the Ebola and SARS outbreak.

A. Sociodemographic Factors

As shown in Table 4, only the sex of the participants was significantly associated with psychological states among the sociodemographic factors. Additionally, our present study reports that males are significantly associated with the depression and stress domain, which deviates from the findings of Shaukat *et al.* [12] stating that females were more likely to experience mental health consequences. This finding also deviates from the study conducted by Lai *et al.* [13] which shows that women have been linked to severe symptoms of depression, anxiety, and distress compared to males. On the other hand, the May 2021 global health data demonstrated a higher COVID-19 case fatality rate among men (1.90%) than women (1.45%) in the Philippines. Furthermore, in a study conducted by Philip and Cherian [14], they mentioned that there were varying conclusions reached regarding the association of gender with mental health outcomes during a health crisis. Females and males suffer from poor outcomes due to their psychological constitution and nature of work requiring them to have closer contact with suspected patients, respectively.

Our study also reports that age has a negative correlation coefficient implying that older participants are less likely to have severe anxiety, which does not align with the findings of the study by Huang and Zhao [15] that states that symptoms of anxiety and depression are more prevalent in ages greater than 35. Interestingly, Conti *et al.* [16] reported higher levels of psychological pressure symptoms among younger HCWs. This is supported by findings from earlier studies that stated that younger staff who are usually less experienced with perplexing clinical situations tend to be more vulnerable to emotionally distressing symptoms than their older and more experienced colleagues. Another study conducted by Liang *et al.* [17] used Zung's self-rating depression scale (SDS) and found that ages less than 30 had higher SDS scores than older medical staff, however, they added that the difference was not statistically significant. However, the varying results regarding age may be influenced by various factors regarding their own or their family's safety as observed in participants aged 30-50 [1].

The marital status of the respondents showed no significant effect on their mental health status. Similarly, a published study conducted by Marthoenis *et al.* [18] in an Indonesian hospital confirms poor association of the three domains to marital status as well as other factors such as employment duration and education. Likewise, the monthly income range was found to be insignificant. This finding deviates from the study conducted by Hoebel *et al.* [19] which shows that lower objective socioeconomic status (SES) - as measured by education, occupation, and income - is associated with a higher risk of depression. Hospital classification did not show any significance in association to the psychological states of the participants. This may be due to the limitations in sampling as respondents who participated in the study came from one tertiary and six primary hospitals. However, Lai *et al.* [13] reports that health workers in secondary hospitals showed higher scores in scales measuring depression and anxiety as compared to those who worked in tertiary hospitals.

B. Work-Related Factors

Among work-related factors, the supply of materials during the pandemic showed significant association with psychological states which may be due to the underlying problem with the lack of personal protective equipment for the participants. This finding is in accordance with previous research conducted by Cai *et.al.* [1] in Hubei, China, which reported that medical staff experienced increased stress due to the inadequacy of protective equipment supplies. A study conducted by Nyashanu *et al.* [20] also found that shortage of PPE among the healthcare workers induces fear and anxiety. These findings are very understandable since the Philippines is reported as one of the countries with a small production of PPEs according to a study conducted by Freudenberg *et al.* [21] and Park *et al.* [22]. In addition, the study of Chan-Yeung [23] during the SARS outbreak supports the claim of Lai *et al.* [13] that factors such as the increase in influx of suspected and confirmed cases of COVID-19 and the anticipated shortage of supplies can contribute to mental pressures and concerns of healthcare workers. Medical workers constantly find themselves exposed to highly risky situations, which can make them feel unsafe at work. Evidently, 93% of the participants in our study reportedly have or have had physical contact with COVID-19 infected

individuals during their shift. Furthermore, Lai *et al.* [13] states the fact that the COVID-19 virus can be transmitted via human-human contact and is linked with high morbidity, may potentially intensify the mental health implications. As opposed to other published literature, our study found that the number of working hours did not show any significant association to the psychological states of the participants.

V. CONCLUSION

This study aimed to assess the psychological impact of the pandemic on the mental health of the medical technologists in government hospitals in Cavite. Mental health problems experienced by the healthcare workers are important to be highlighted especially in the context of the pandemic. It is pertinent that there is a continuous assessment because there are many factors affecting the mental health of the healthcare workers in the frontline. These factors include community quarantine and personal isolation, the amount of workload and excessive working hours, the risk of being exposed to COVID-19, the inadequate medical resources, and the lack of government guidance to name a few; these are major contributory factors for the development of mental health problems among medical technologists.

It is important that we take care of the people who are in the front line of the pandemic. Medical technologists and other healthcare workers should have their psychological burdens addressed, as preserving staff mental health is critical in better controlling infectious diseases. Interventions should be enforced to help mitigate the problems that the healthcare workers are experiencing. The health response to the COVID 19 Pandemic must also focus on the development and implementation of mental health support, treatment, assessment, and services to the front liners.

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