

(RESEARCH ARTICLE)



## Relationship between the working conditions and occupational stress of pharmacists from selected hospitals in Oriental Mindoro before and during COVID-19 pandemic: A correlational study

Jediael Alim Yanesa<sup>\*</sup>, Jeremy Mark Bernabe Aunzo, Harris Andaya Bakal, Xyza Vera Falla Linga, George Jr. Mora Manzano, Linus Goco Manzo, Manny Lester Nicolas Ramos, Jermaine Ghel Torres Salazar, Ma. Vivien Rondael Sanchez, Ray Arquilato Sanchez, Maria Angelica Salaysay Tampilic, Chaira Mae Cano Zabella, Jan Karlo Tiongson Ecalne and Cecilia Diaz Santiago

*School of Pharmacy, Centro Escolar University-Manila, 9 Mendiola St. San Miguel, Manila 1008, Metro Manila, Philippines.*

GSC Biological and Pharmaceutical Sciences, 2022, 20(01), 110–125

Publication history: Received on 30 May 2022; revised on 06 July 2022; accepted on 08 July 2022

Article DOI: <https://doi.org/10.30574/gscbps.2022.20.1.0271>

### Abstract

Hospital pharmacists play vital roles in the healthcare system. They are being submerged in various working conditions which can affect their occupational health. As the COVID-19 pandemic emerged, changes in healthcare context altered working conditions of hospital pharmacists which may cause occupational stress. This study determined if there was a relationship between the working conditions and the occupational stresses of hospital pharmacists before and during the pandemic. Using a purposive sampling technique, the researchers conducted an online survey among 80 hospital pharmacists in selected public and private hospitals in Oriental Mindoro. Data were analyzed using mode and frequency distribution, Wilcoxon's Test, Pearson's  $r$ , and logistic regression. Results showed a significant relationship between certain working conditions and occupational stresses of respondents, ranging from very low to low. Particularly, the sources of occupational stresses before the pandemic were working hours and workload which were correlated with lack of encouragement and recognition from hospital administration and overlooked concerns by superiors, respectively. Meanwhile, during the pandemic, the working conditions which caused occupational stresses shifted to areas of compensation and administrative support. Compensation was correlated with occupational stresses including: discontentment from quality of work, exhaustion, discomfort from communicating concerns, discontentment from work benefits and compensation, demotivation from delay of salary, burden of working due to difficulties in transportation, overlooked concerns by superiors, and pressure to meet society's high standards for medical treatment, while administrative support was correlated with lack of encouragement and recognition from hospital administrations and feeling of being undervalued as legitimate healthcare workers.

**Keywords:** COVID-19 Pandemic; Occupational Stress; Working Conditions; Hospital Pharmacists; Oriental Mindoro

### 1. Introduction

Hospital pharmacists have various roles as an integral part of the healthcare system who provide expertise in medication therapy. With this, they are susceptible to a variety of work conditions that when altered, may create additional challenges resulting in occupational stress consequently affecting their quality of work [1]. The emergence of the COVID-19 pandemic has resulted in the increased prevalence of challenges faced by the fragmented healthcare system of the Philippines [2]. Moreover, it presented greater responsibilities to HCWs which comes with risks engendering a more arduous working environment. As one of the front liners combating this pandemic, it is essential that they maintain their competency and quality of work. The driving force of this study are the struggles that healthcare

<sup>\*</sup> Corresponding author: Jediael Alim Yanesa

School of Pharmacy, Centro Escolar University-Manila, 9 Mendiola St. San Miguel, Manila 1008, Metro Manila, Philippines.

workers have faced during the pandemic due to the inadequacies of the healthcare system. This study aims to serve as an avenue for addressing this concern by evaluating the relationship between working conditions and occupational stresses hospital pharmacists experienced before and during the pandemic. Furthermore, determining these variables will provide a better understanding of the current situation as well as provide insights into areas for improvement and possible solutions that may be utilized to strengthen the current healthcare system.

---

## **2. Material and methods**

### **2.1. Study design**

The specific research type applied in this study was quantitative-descriptive research, particularly a correlational study, in order to characterize and interpret the correlation between the hospital pharmacists' working conditions and occupational stresses before and during COVID-19 pandemic. In addition, this correlational study served as a statistical measure to identify the relation between the variables, which determined how these variables may affect each other. This study involved the working conditions as the independent variable, while the level of occupational stress as the dependent variable.

### **2.2. Setting of the study**

The researchers selected Oriental Mindoro as the location for conducting the study due to its present diversity in population. Mindoro is divided into two districts where one district has a higher number of COVID-19 cases than the other. Specifically, the researcher opted to conduct this research in a hospital setting because of its direct patient interaction before and during COVID-19 pandemic. Furthermore, this covered the evaluation of both governmental and private hospitals in Oriental Mindoro. This is to guarantee an adequate number of respondents and to rule out the possibility of bias between public and private institutions.

### **2.3. Sampling Technique**

The researchers utilized a purposive sampling technique. In this type of non-probability sampling, the researchers select the respondents who are proficient and are willing to give information [3]. The study used this kind of sampling since it required hospital pharmacists that work in private and public hospitals that receive COVID-19 patients. Furthermore, researchers used such sampling techniques because respondents must fit particular characteristics that will suffice the objectives of the study. With this sampling technique, researchers targeted a minimum sample size of 30. This specific sample size was targeted as allowed by the nature of the sampling technique chosen which does not require a computed statistical representative from the total population size. Also, as per central limit theorem, a population with sufficiently large samples will have normal distribution and this holds true regardless of the source of the population provided that the sample is equal or greater than 30.

### **2.4. Research Instrument**

The researchers used surveys as the research instrument to evaluate the relationship of working conditions and occupational stresses of the respondents. Data were gathered through the formulated questionnaire to which the respondents provided answers based on their knowledge, perceptions, and experiences regarding the concerns presented in the questionnaire.

### **2.5. Data Collection**

Survey questionnaire was standardized from different sources and validated by psychometrician, psychologist, statistician, and hospital pharmacist. Afterwards, the survey questionnaire was also subjected to reliability testing wherein a Cronbach's alpha of greater than 0.8 was determined indicating good consistency. Using a purposive sampling technique which requires a minimum of 30 respondents, the researchers conducted the survey among a total of 80 respondents. The survey was only given one time gathering the perceived experiences of the respondents of their working conditions and occupational stresses before and during the pandemic.

### **2.6. Data Analysis**

Different statistical tools were utilized to analyze the data including mode and frequency distribution for demographic profile, description of working conditions, and occupational stress; Wilcoxon test for comparison of working condition and occupational stress; Pearson's correlation for the relationship between working conditions and occupational stress; and logistic regression for the relationship between demographic profiles and working conditions and occupational stress.

### 3. Results and discussion

#### 3.1. Demographic Profile

**Table 1** Frequency and Percentage Distribution of the Respondents' Demographic Profile

Variable	Group	Frequency (N = 80)	Percentage (%)
Sex	Male	30	37.5
	Female	50	62.5
Age	18-25	20	25
	26-33	33	41.2
	34-41	15	18.8
	42-49	6	7.5
	50-57	5	6.2
	58 and above	1	1.2
Marital Status	Single	41	51.2
	Married	38	47.5
	Separated/ Annulled/ Widowed	1	1.2
Number of Household Members	1-5	54	67.5
	5-10	20	25
	11-15	6	7.5
Type of Hospital Institution	Private	62	77.5
	Public	18	22.5
Hospital Grade	Primary	23	28.7
	Secondary	54	67.5
	Tertiary	3	3.8
Number of Years as a Hospital Pharmacist	5 months	1	1.3
	1-5 years	34	43
	6-10 years	27	34.2
	11-15 years	7	8.9
	16- 20 years	6	7.6
	21-25 years	4	5.1
Position in Hospital Pharmacy	Staff Pharmacist	43	55.1
	Dispensing Pharmacist	14	17.9
	Chief Pharmacist	8	10.3
	Pharmacy Assistant	12	15.4
	Pharmacy Encoder	1	1.3

Average Number of Working Hours per day	4-6 hours per day	2	2.5
	7-9 hours per day	75	93.8
	10-12 hours per day	3	3.8
Approximate Monthly Income	Below Php 10,000	24	30
	Php 10,001-15,000	24	30
	Php 15,001-20,000	22	27.5
	Php 20,001-25,000	7	8.8
	Php 25,001-50,000	3	3.8

The respondents of the study were hospital pharmacists from Oriental Mindoro wherein most of them are female, aged 26-33 years old, single, and 1-5 members in the household. Majority were staff pharmacists, working in private hospitals employed in secondary hospitals, and have been working for 1-5 years. Lastly, the majority had working hours of 7-9 hours per day and monthly income of below Php 10,000, and Php 10,001- 15, 000. These demographic characteristics are influenced by different factors affecting their perception of working conditions and susceptibility to various occupational stresses.

### 3.2. Description of Working Conditions

**Table 2** Summary of Results of Respondents' Working Conditions Before COVID-19 Pandemic

Before COVID-19 Pandemic			
Working Condition	Mode	Frequency of Mode (N=80)	Mode (%)
The duration of my working hours and time for breaks is sufficient to maintain work efficiency.	Agree	49	61.3
I have a manageable workload to maintain good quality of service	Agree	49	61.3
I have good and healthy relationships with people in my workplace.	Agree	45	56.3
I receive sufficient compensation and benefits.	Agree	55	68.8
My institution provides us with a safe and healthy working environment.	Agree	52	65
I receive adequate administrative support.	Agree	56	70
I am performing tasks that are related to my job as a pharmacist.	Agree	48	60

Table 2 presented the various working conditions of the hospital pharmacists from Oriental Mindoro before the COVID-19 pandemic. The results showed that in all stated working conditions, the majority of the respondents agreed in experiencing them. Among the various working conditions, adequate administrative support was experienced by most of the respondents which may be due to hospital administrations' competency in providing policies that empowered their employees. Meanwhile, having good and healthy workplace relationships was experienced by the least number of respondents which may have resulted from tasks that required minimal collaboration between the employees or existing barriers such as age, gender, and position in the hospital pharmacy. From these results, it can be suggested that working conditions promoting workplace relationships should be prioritized more for improvement.

As the majority of the respondents agreed that they had good working conditions, it can be implicated that working conditions before the COVID-19 pandemic were favorable, attributing to less restrictions such as less of a need for PPEs

and social distancing, less work burden such as a more manageable number of inpatients, less hazards and less risk of contracting a highly-communicable disease such as COVID-19, and less limitations such as no decrease or delay in compensation and benefits. The good working conditions before the COVID-19 pandemic resulted from effective institutional policies and competent administration.

Meanwhile, during the COVID-19 pandemic, the majority agreed that they experienced good working conditions, implying that there were still good working conditions during the COVID-19 pandemic, which may have resulted from an adequate institutional response to the COVID-19 pandemic. Their hospital administrations implemented appropriate policies to maintain ideal working conditions for their hospital pharmacists. These responses included the provision of sufficient PPEs, and detailed guidelines on COVID-19 management within the institution [4]. Table 3 summarizes the results of their work conditions during the COVID-19 pandemic.

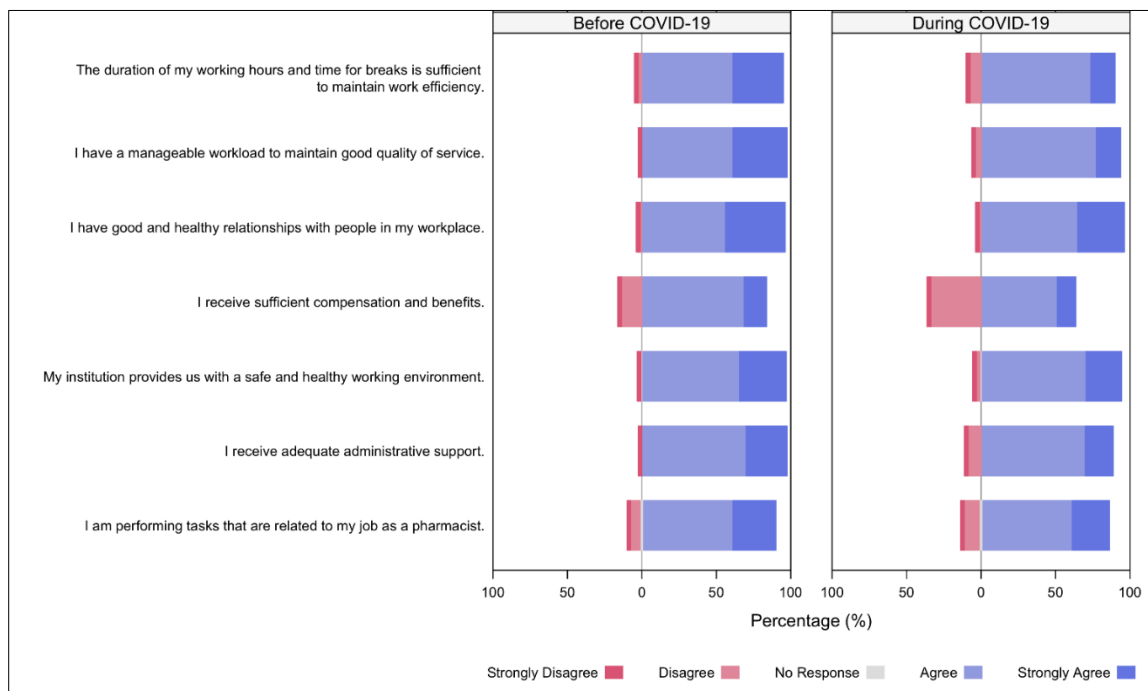
**Table 3** Summary of Results of Respondents' Working Conditions During COVID-19 Pandemic

During COVID-19 Pandemic			
Working Condition	Mode	Frequency of Mode (N=80)	Mode (%)
The duration of my working hours and time for breaks is sufficient to maintain work efficiency.	Agree	59	73.8
I have a manageable workload to maintain good quality of service	Agree	62	77.5
I have good and healthy relationships with people in my workplace.	Agree	52	65
I receive sufficient compensation and benefits.	Agree	41	51.3
My institution provides us with a safe and healthy working environment.	Agree	56	70
I receive adequate administrative support.	Agree	56	70
I am performing tasks that are related to my job as a pharmacist.	Agree	48	60

Although it was concluded from the data that the working conditions during the pandemic were still considered good, it was still recognizable that these were not the best working conditions that the respondents can have as the majority only agreed and not strongly agreed. Therefore, the working conditions of hospital pharmacists from selected hospitals in Oriental Mindoro during the COVID-19 pandemic were generally good but the need for further improvement was recognizable.

A comparison between the working conditions before and during COVID-19 pandemic showed changes in the working conditions experienced by the majority and minority of the respondents. Before the COVID-19 pandemic, the working condition experienced by the majority was adequate administration while during the COVID-19 pandemic was manageable workload. The results showed that the majority had agreed on receiving adequate administrative support, with 70% (56 out of 80) both before and during the COVID-19 pandemic but this does not necessarily mean that it did not change during the COVID-19 pandemic. Considering other responses, respondents who strongly agreed with having adequate administrative support lessened during the COVID-19 pandemic with 18.8% (15 out of 80) compared to before the COVID-19 pandemic which is 27.5% (22 out of 80). Furthermore, the results also implied that workload became less manageable for hospital pharmacists during the COVID-19 pandemic. Although the number of respondents who agreed to have manageable workload increased from 61.3% (49 out of 80) to 77.5% (62 out of 80) during the COVID-19 pandemic, it can still be implied that their workload became less manageable because respondents who strongly agreed in having manageable workload decreased from 36.3% (29 out of 80) to 16.3% (13 out of 80). Meanwhile, the working condition experience by only minority before the COVID-19 pandemic was healthy workplace relationships while during COVID-19 pandemic, was sufficient compensation. Despite an increase in "agree" responses, from 56.3% (45 out of 80) before the COVID-19 pandemic to 65% (52 out of 80) during the COVID-19 pandemic, the results still suggested that there was a decrease in healthy workplace relationships during pandemic with the "strongly

agree” responses decreasing from 40% (32 out of 80) to 31.3% (25 out of 80) during the COVID-19 pandemic. Additionally, the results also indicated that there was a decrease in sufficiency of compensation and work benefits changing from 68.8% (55 out of 80) before the COVID-19 pandemic to 51.3% (41 out of 80) during the COVID-19 pandemic. This was also supported by the increase in “disagree” responses from 13.8% (11 out of 80) to 33.8% (27 out of 80) during the COVID-19 pandemic. This decrease in sufficiency of compensation may be due to financial struggles of the hospital institutions and hospital pharmacists caused by additional expenses induced by the COVID-19 [5].



**Figure 1** Summary of Results of Respondents' Working Conditions Before and During COVID-19 Pandemic

From these comparisons of working conditions before and during COVID-19 pandemic, it can be concluded that working conditions in both contexts were considered good based on the response of the majority agreeing to experience favorable working conditions. However, the need for improvement of these working conditions shall still be recognized considering that the majority only agreed and not strongly agreed. In addition, there were substantial changes in these working conditions wherein some increased and some decreased, further emphasizing which working conditions shall be the focus of improvement given the changing context within the hospital pharmacy.

### 3.3. Evaluation of Occupational Stress of Respondents Before and During COVID-19 Pandemic

Table 4 showed evidence that hospital pharmacists from Oriental Mindoro had experienced occupational stress, even before the pandemic. Half of the respondents reported that they had sometimes felt the stress from 12 out of 14 sub-areas of working hours, workload, workplace relationship, compensation, safety, administrative support, and professional recognition. This reflected the need for improvement on the working environment of hospital pharmacists causing occupational stress, specifically on the mentioned areas. Meanwhile, COVID-19 pandemic further exacerbated the previous levels of occupational stress that hospital pharmacists from Oriental Mindoro experienced. Half of the respondents reported that they had sometimes or often experienced stress from 16 out of 17 sub-areas mentioned earlier. This shows that there is an increase in the frequency of stress that is sometimes and often felt, and a decrease in never felt. Therefore, the effects of occupational stress could be more prominent, and could have a greater effect on hospital pharmacists.

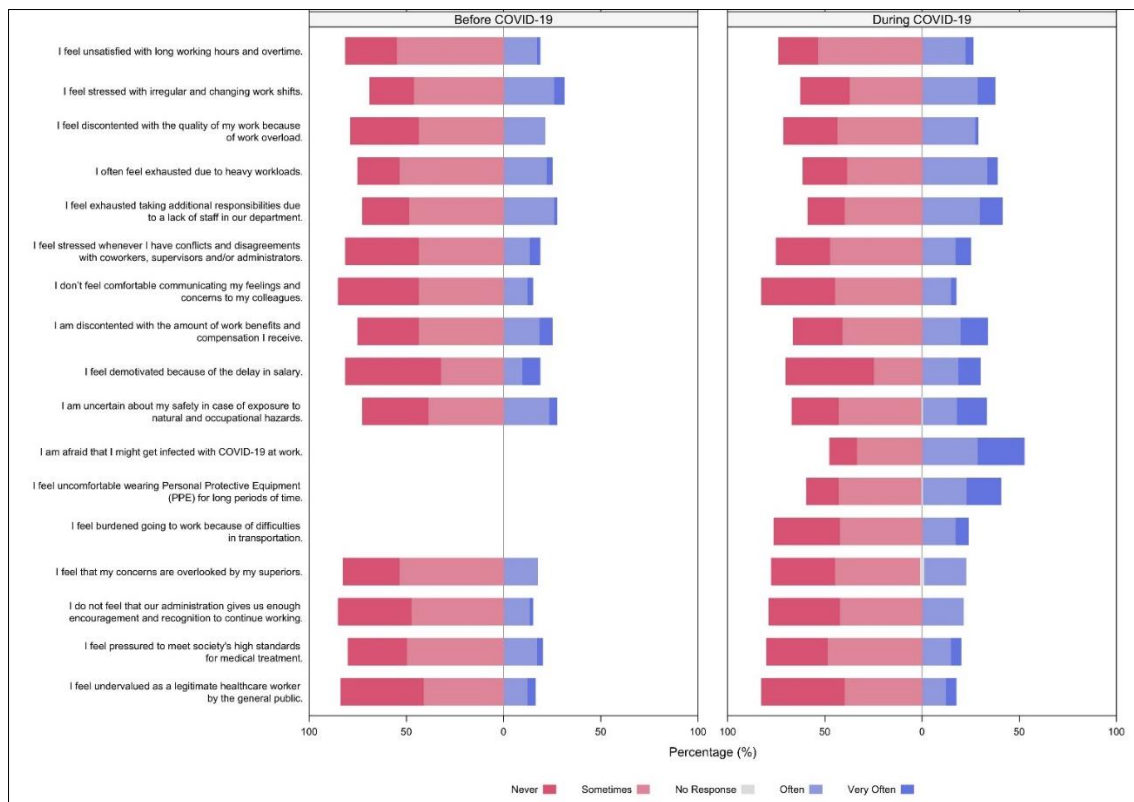
In figure 2, the data collected show that under the working hours, irregular work shifts caused the most stress before the pandemic while longer work duration became the major stressor during the pandemic. Moreover, the exhaustion from heavy workload, conflicts and disagreements with coworkers etc., and discontent from the amount of work benefits have remained the highest cause of occupational stress both before and during the pandemic, as compared to the other sub-areas of workload, workplace relationship, and compensation, respectively. Before the pandemic, stress from exposure to hazards under areas of safety were already felt before the pandemic, however the pandemic added

factors such as fear of getting infected, discomfort from wearing PPEs, and hassle in transportation all contributed to additional occupational stress.

**Table 4** Summary of Results of Respondents' Occupational Stress Before and During COVID-19 Pandemic

Occupational Stress	Before COVID-19 Pandemic			During COVID-19 Pandemic		
	Mode	Frequency of Mode (N=80)	Mode (%)	Mode	Frequency of Mode (N=80)	Mode (%)
<b>Working Hours</b>						
I feel unsatisfied with long working hours and overtime.	Sometimes (2)	44	55	Sometimes (2)	43	53.8
I feel stressed with irregular and changing work shifts.	Sometimes (2)	37	46.3	Sometimes (2)	30	37.5
<b>Workload</b>						
I feel discontented with the quality of my work because of work overload.	Sometimes (2)	35	43.8	Sometimes (2)	35	43.8
I often feel exhausted due to heavy workloads.	Sometimes (2)	43	53.8	Sometimes (2)	31	38.8
I feel exhausted taking additional responsibilities due to a lack of staff in our department.	Sometimes (2)	39	48.8	Sometimes (2)	32	40
<b>Workplace Relationship</b>						
I feel stressed whenever I have conflicts and disagreements with coworkers, supervisors and/or administrators.	Sometimes (2)	35	43.8	Sometimes (2)	38	47.5
I don't feel comfortable communicating my feelings and concerns to my colleagues.	Sometimes (2)	35	43.8	Sometimes (2)	36	45
<b>Compensation</b>						
I am discontented with the amount of work benefits and compensation I receive.	Sometimes (2)	35	43.8	Sometimes (2)	33	41.3
I feel demotivated because of the delay in salary.	Never (1)	39	48.8	Never (1)	36	45
<b>Safety</b>						
I am uncertain about my safety in case of exposure to natural and occupational hazards.	Sometimes (2)	31	38.8	Sometimes (2)	34	42.5
I am afraid that I might get infected with COVID-19 at work.	-	-	-	Sometimes (2)	27	33.8

I feel uncomfortable wearing Personal Protective Equipment (PPE) for long periods of time.	-	-	-	Sometimes (2)	34	42.5
I feel burdened going to work because of difficulties in transportation.	-	-	-	Sometimes (2)	34	42.5
<b>Administrative Support</b>						
I feel that my concerns are overlooked by my superiors.	Sometimes (2)	43	53.8	Sometimes (2)	35	43.8
I do not feel that our administration gives us enough encouragement and recognition to continue working.	Sometimes (2)	38	47.5	Sometimes (2)	34	42.5
<b>Professional Recognition</b>						
I feel pressured to meet society's high standards for medical treatment.	Sometimes (2)	40	50	Sometimes (2)	39	48.8
I feel undervalued as a legitimate healthcare worker by the general public.	Never (2)	34	42.5	Never (2)	34	42.5



**Figure 2** Summary of Results of Respondents' Occupational Stress Before and During COVID-19 Pandemic

Furthermore, the stress from overlooked concerns by the superiors and pressure to meet the high standard of medical treatment in the society remained to cause the highest stress both before and during the pandemic, in areas of administrative support and professional recognition, respectively.



The results show that the occupational stress of the respondents during the COVID-19 pandemic had a small but significant increase in frequency as compared to before. Therefore, the pandemic exacerbated the occupational stress already felt before the pandemic and that the factors causing the highest occupational stress are still the same.

### 3.4. Difference of Respondents' Working Conditions Before and During the COVID-19 pandemic

**Table 5** Summary of Results of Respondents' Working Conditions Before and During COVID-19 Pandemic

Working Condition	p-value
The duration of my working hours and time for breaks is sufficient to maintain work efficiency.	0.0003*
I have a manageable workload to maintain good quality of service.	0.000015*
I have good and healthy relationships with people in my workplace.	0.0394*
I receive sufficient compensation and benefits.	0.0011*
My institution provides us with a safe and healthy working environment.	0.0235*
I receive adequate administrative support.	0.0011*
I am performing tasks that are related to my job as a pharmacist.	0.0197*

\*Significant at p-value < 0.05

Table 5 showed the working conditions of the hospital pharmacists before and during the COVID-19 pandemic. There were significant differences in the working conditions of the respondents before and during the COVID-19 pandemic. It included the working hours, workload, workplace relationships, compensation and benefits, working environment safety, adequate administrative support, and professional recognition, which showed how the health crisis greatly influenced the working conditions of hospital pharmacists since their roles were unprecedented.

### 3.5. Difference of Respondents' Occupational Stress Before and During COVID-19 pandemic

**Table 6** Summary of Results of Respondents' Occupational Stress Before and During COVID-19 Pandemic

Occupational Stress	p-value
I feel unsatisfied with long working hours and overtime.	0.0491
I feel stressed with irregular and changing work shifts.	0.2431
I feel discontented with the quality of my work because of work overload.	0.020*
I often feel exhausted due to heavy workloads.	0.0465*
I feel exhausted taking additional responsibilities due to a lack of staff in our department.	0.0001*
I feel stressed whenever I have conflicts and disagreements with coworkers, supervisors and/or administrators.	0.0059*
I don't feel comfortable communicating my feelings and concerns to my colleagues.	0.3494
I am discontented with the amount of work benefits and compensation I receive.	0.0139*
I feel demotivated because of the delay in salary.	0.0087*
I am uncertain about my safety in case of exposure to natural and occupational hazards.	0.0003*
I feel that my concerns are overlooked by my superiors.	0.7897
I do not feel that our administration gives us enough encouragement and recognition to continue working.	0.1779
I feel pressured to meet society's high standards for medical treatment.	0.7897
I feel undervalued as a legitimate healthcare worker by the general public.	0.5297

Significant at p-value < 0.05

Table 6 showed the respondents level of occupational stress before and during COVID-19 pandemic. COVID-19 pandemic had both significant and non-significant effects on various occupational stresses experienced by hospital pharmacists. Occupational stresses such as those coming from discontentment with quality of work, exhaustion due to heavy workload, exhaustion due to lack of staff, conflicts and disagreements with coworkers, discontentment with amount of work benefits and compensation, delay in salary, and exposure to natural and occupational hazards, which had a significant difference before and during pandemic indicated that these occupational stresses were changed and aggravated during the pandemic. Meanwhile, it should also be inferred that the occupational stresses that did not significantly change during the pandemic were already experienced by hospital pharmacists in significantly elevated levels that a health crisis like COVID-19 pandemic did not significantly affect it.

### 3.6. Correlation between Occupational Stress and Working Conditions of Respondents Before and During COVID-19 Pandemic

**Table 7** Summary of Results of Correlation Between Occupational Stress and Working Conditions of Respondents Before COVID-19 Pandemic

Working Condition	Occupational Stress	r	p	Interpretation
The duration of my working hours and time for breaks is sufficient to maintain work efficiency.	I do not feel that our administration gives us enough encouragement and recognition to continue working.	-0.290	0.0091	Significant very low negative correlation
I have a manageable workload to maintain good quality of service	I feel that my concerns are overlooked by my superiors	-0.272	0.0147	Significant very low negative correlation

Pearson's Correlation Coefficient (r) = perfect ( $\pm 1$ ); strong ( $1 < \pm 0.7$ ); moderate ( $\pm 0.7 < \pm 0.5$ ); low ( $\pm 0.5 < \pm 0.3$ ); very low ( $\pm 0.3 < 0$ ); Significant at p-value  $< 0.05$

**Table 8** Summary of Results of Correlation Between Occupational Stress and Working Conditions of Respondents During COVID-19 Pandemic

Working condition	Occupational Stress	R	p	Interpretation
I receive sufficient compensation and benefits.	I feel discontented with the quality of my work because of work overload.	-0.310	0.0052	Significant low negative correlation
	I often feel exhausted due to heavy workloads	-0.221	0.0485	Significant very low negative correlation
	I don't feel comfortable communicating my feelings and concerns to my colleagues.	-0.246	0.0276	Significant very low negative correlation
	I am discontented with the amount of work benefits and compensation I receive.	-0.334	0.0025	Significant low negative correlation
	I feel demotivated because of the delay in salary	-0.406	0.0002	Significant low negative correlation
	I feel burdened going to work because of difficulties in transportation.	-0.220	0.0499	Significant very low negative correlation

	I feel that my concerns are overlooked by my superiors.	-0.330	0.0032	Significant low to negative correlation
	I do not feel that our administration gives us enough encouragement and recognition to continue working.	-0.363	0.0009	Significant low negative correlation
	I feel pressured to meet society's high standards for medical treatment.	-0.314	0.0046	Significant low negative correlation
	I feel undervalued as a legitimate healthcare worker by the general public.	-0.321	0.0037	Significant low negative correlation
I receive adequate administrative support.	I do not feel that our administration gives us enough encouragement and recognition to continue working.	-0.259	0.0203	Significant very low negative correlation
	I feel undervalued as a legitimate healthcare worker by the general public.	-0.272	0.0146	Significant very low negative correlation

Pearson's Correlation Coefficient (r) = perfect ( $\pm 1$ ); strong ( $1 < \pm 0.7$ ); moderate ( $\pm 0.7 < \pm 0.5$ ); low ( $\pm 0.5 < \pm 0.3$ ); very low ( $\pm 0.3 < 0$ ); Significant at p-value  $< 0.05$

Table 7 showed the correlation between the level of occupational stress with various working conditions experienced by the respondents before the COVID-19 pandemic. The results showed that there was a significant, very low correlation between the respondents' working hours and time for breaks with their stress from feeling that their administration was being insufficient in giving enough encouragement and recognition, and having a sufficient amount of workload to maintain good quality of service also had a significant, very low correlation with the feeling that their concerns were being overlooked by their superiors, showing how the respondents were aware of how the hospital administration's policies contributed to the quality of their performance and their work concerns as well.

Table 8 showed the correlation between the level of occupational stress with various working conditions experienced by the respondents during the COVID-19 pandemic. The results showed that receiving sufficient compensation and benefits was correlated with a number of occupational stresses, including: discontentment from quality of work, exhaustion, discomfort from communicating concerns, discontentment from work benefits and compensation, demotivation from delay of salary, burden of working due to difficulties in transportation, overlooked concerns by superiors, and pressure to meet society's high standards for medical treatment. While receiving adequate administrative support was found to be correlated with the stress from feeling that their administration was insufficient in giving enough encouragement and recognition, and feeling undervalued as a legitimate healthcare worker. This showed how the COVID-19 pandemic impacted the stress perceived by the respondents, shifting to different working conditions with more occupational stresses linked to them.

### 3.7. Relationship between the Demographic Profile of the Respondents and Their Working Conditions and Occupational Stress Before and During the COVID-19 pandemic

Table 9 showed the relationship between the demographic profile of the respondents and their working conditions before the COVID-19 pandemic. Based on the results, the age group "26-33" had an OR of greater than 1 and a p-value less than 0.05, indicating statistical significance. These age groups have different work responsibilities compared to other age groups, thus having a good perception of their working conditions, as they may be receiving only enough workload to manage. Additionally, studies show that they are the most productive age group in the workplace. They are in their prime years of life and being physically active is one of their characteristics. They do not experience decreased muscle strength and motor abilities, unlike previous generations that experienced weakened muscle strength by 50% [6]. They can handle difficult working conditions such as inadequate break times, long working hours, and heavy workloads since their generation are excellent at adapting to change [7]. Therefore, as age was a major factor affecting performance of hospital pharmacists, those in their younger age had different perceptions of their working condition

as compared to other groups - they perceived their working conditions as ideal as they could handle it better than other groups.

**Table 9** Summary of Results Relationship Between the Demographic Profile of the Respondents and Their Working Conditions Before and During the COVID-19 pandemic

	Working Condition			
	Before COVID-19 pandemic		During COVID-19 pandemic	
	OR	<i>p</i> -value	OR	<i>p</i> -value
<b>Gender</b>				
Female	(ref)	(ref)	(ref)	(ref)
Male	1.303	0.3585	1.177	0.5722
<b>Age</b>				
18-25	(ref)	(ref)	(ref)	(ref)
26-33	2.335	0.0320*	1.795	0.1255
34-41	1.643	0.3147	1.047	0.9262
42-49	0.830	0.7746	0.680	0.5621
50-57	1.091	0.9413	0.737	0.7995
58 and above	0.797	0.8834	0.393	0.5560
<b>Marital Status</b>				
Single	(ref)	(ref)	(ref)	(ref)
Married	1.525	0.3322	1.690	0.2396
Separated /Annulled / Widowed	NA	NA	NA	NA
<b>Number of Household members</b>				
1-5	(ref)	(ref)	(ref)	(ref)
5-10	0.981	0.9669	0.880	0.7878
11-15	1.075	0.8796	0.753	0.5593
<b>Type of Hospital Institution</b>				
Private	(ref)	(ref)	(ref)	(ref)
Public	0.858	0.6825	0.700	0.3562
<b>Hospital Grade</b>				
Primary	(ref)	(ref)	(ref)	(ref)
Secondary	1.036	0.9022	1.052	0.8626
Tertiary	1.349	0.7211	1.310	0.7513
<b>Number of Years as a Hospital Pharmacist</b>				
0.4 year (5 months)	(ref)	(ref)	(ref)	(ref)
1-5 years	1.508	0.7127	1.747	0.6233
6-10 years	1.406	0.7661	1.939	0.5714
11-15 years	1.410	0.7915	2.274	0.5364

16-20 years	3.260	0.4932	2.927	0.5392
21-25 years	1.772	0.7332	3.557	0.4612
<b>Number of Months Working during the COVID-19 Pandemic</b>				
5 months	(ref)	(ref)	(ref)	(ref)
10 months	0.103	2.5484	0.217	0.3763
12 months	1.074	3.8351	0.761	0.6861
14 months	1.662	14.1277	0.996	0.9972
18 months	1.107	11.1212	0.708	0.7780
20 months	1.501	5.1477	0.799	0.7318
24 months	0.713	2.8343	0.506	0.3594
25 months	0.619	3.6787	0.620	0.6148
26 months	0.650	2.7087	0.482	0.3438
28 months	2.310	23.0821	1.284	0.8378
30 months	NA	NA	NA	NA
36 months	NA	NA	NA	NA
<b>Position in Hospital Pharmacy</b>				
Staff Pharmacist	(ref)	(ref)	(ref)	(ref)
Dispensing Pharmacist	0.961	0.9342	0.900	0.8283
Chief Pharmacist	1.874	0.3672	1.686	0.4580
Pharmacy Assistant	1.423	0.5450	1.113	0.8557
Pharmacy Encoder	NA	NA	NA	NA
<b>Average Number of Working Hours per day</b>				
4-6 hours per day	(ref)	(ref)	(ref)	(ref)
7-9 hours per day	0.167	0.0545	0.543	0.4880
10-12 hours per day	0.068	0.0717	0.308	0.4108
<b>Income</b>				
Below Php 10,000	(ref)	(ref)	(ref)	(ref)
Php 10,001- 15,000	0.782	1.5920	0.708	0.3674
Php 15,001-20,000	2.143	6.4074	1.355	0.6024
Php 20,001-25,000	1.272	5.9872	0.744	0.7191
Php 25,001-50,000	1.366	14.8938	1.607	0.7085

\*Significant at p-value < 0.05 OR = odds ratio; (ref) = reference group; NA = not enough responses

Table 10 showed the relationship between the demographic profile of the respondents and their occupational stress before and during the COVID-19 pandemic. Based on the results, the age group of 26-33 is 2.041 times more likely to had an occupational stress outcome before the COVID-19 pandemic and 2.333 times more likely to had an occupational stress outcome during the COVID-19 pandemic compared to the reference group, both with an OR of greater than 1 and a p-value less than 0.05, which indicated statistical significance. This specific age group was the most under pressure due to the rise of perfectionism and efficiency demands in their generation [8], which can affect their susceptibility to occupational stress. In a survey conducted, it showed that the highest levels of work stress were experienced by this generation [9]. Therefore, as age contributes to certain factors that affect susceptibility to occupational stress, it was a

major determinant in occurrence of occupational stress in specific age groups - certain age groups were more likely to experience occupational stress than others.

**Table 10** Summary of Results Relationship Between the Demographic Profile of the Respondents and Occupational Stress Before and During the COVID-19 Pandemic

<b>Occupational Stress</b>				
	<b>Before COVID-19 pandemic</b>		<b>During COVID-19 pandemic</b>	
	<b>OR</b>	<b>p-value</b>	<b>OR</b>	<b>p-value</b>
<b>Gender</b>				
Female	(ref)	(ref)	(ref)	(ref)
Male	1.063	0.8152	1.077	0.8091
<b>Age</b>				
18-25	(ref)	(ref)	(ref)	(ref)
26-33	2.041	0.0457*	2.333	0.0487*
34-41	1.722	0.2402	3.008	0.0809
42-49	3.154	0.0510	4.009	0.0709
50-57	5.489	0.0854	6.070	0.1762
58 and above	4.087	0.2885	2.943	0.5195
<b>Marital Status</b>				
Single	(ref)	(ref)	(ref)	(ref)
Married	1.493	0.3185	1.165	0.7737
Separated / Annulled / Widowed	NA	NA	NA	NA
<b>Number of Household members</b>				
1-5	(ref)	(ref)	(ref)	(ref)
5-10	0.920	0.8394	0.891	0.8185
11-15	1.839	0.1704	2.238	0.1354
<b>Type of Hospital Institution</b>				
Private	(ref)	(ref)	(ref)	(ref)
Private	(ref)	(ref)	(ref)	(ref)
Public	1.256	0.5158	1.490	0.3311
<b>Hospital Grade</b>				
Primary	(ref)	(ref)	(ref)	(ref)
Secondary	0.598	0.0627	0.982	0.9603
Tertiary	0.483	0.3589	2.083	0.4600
<b>Number of Years as a Hospital Pharmacist</b>				
0.4 year (5 months)	(ref)	(ref)	(ref)	(ref)
1-5 years	1.545	0.6758	1.732	0.6563
6-10 years	1.484	0.7115	1.405	0.7908
11-15 years	1.258	0.8498	0.800	0.8811
16-20 years	0.994	0.9967	1.446	0.8430
21-25 years	0.286	0.4242	0.225	0.4364

<b>Number of Months Working during the COVID-19 Pandemic</b>				
5 months	(ref)	(ref)	(ref)	(ref)
10 months	0.673	0.7997	2.611	0.4915
12 months	1.195	0.7726	1.025	0.9725
14 months	0.587	0.6059	1.822	0.6273
18 months	3.806	0.2455	1.062	0.9656
20 months	1.682	0.3911	2.028	0.3148
24 months	1.226	0.7612	0.924	0.9177
25 months	0.513	0.4073	0.318	0.2667
26 months	0.760	0.6910	0.380	0.2535
28 months	1.568	0.6660	4.805	0.2450
30 months	NA	NA	NA	NA
36 months	NA	NA	NA	NA
<b>Position in Hospital Pharmacy</b>				
Staff Pharmacist	(ref)	(ref)	(ref)	(ref)
Dispensing Pharmacist	0.880	0.7749	1.839	0.2784
Chief Pharmacist	1.638	0.3334	3.019	0.1577
Pharmacy Assistant	0.736	0.5716	2.280	0.2591
Pharmacy Encoder	NA	NA	NA	NA
<b>Average Number of Working Hours per day</b>				
4-6 hours per day	(ref)	(ref)	(ref)	(ref)
7-9 hours per day	0.395	0.2574	2.405	0.3942
10-12 hours per day	0.398	0.4542	NA	NA
<b>Income</b>				
Below Php 10,000	(ref)	(ref)	(ref)	(ref)
Php 10,001-15,000	0.587	0.2574	0.916	0.8288
Php 15,001-20,000	0.535	0.4542	1.708	0.4358
Php 20,001-25,000	0.707	(ref)	1.259	0.7908
Php 25,001-50,000	0.378	0.2574	0.561	0.6744

\*Significant at p-value < 0.05 OR = odds ratio; (ref) = reference group; NA = not enough responses

#### 4. Conclusion

In conclusion, the results demonstrated that there was a significant correlation between the working conditions and occupational stresses of hospital pharmacists from Oriental Mindoro before and during the COVID-19 pandemic. In particular, the source of occupational stresses before the COVID-19 pandemic were working hours and workload. Meanwhile, during the pandemic, the working conditions causing occupational stress shifted to areas of compensation, and administrative support wherein the correlated occupational stress on each working condition increased. As the pandemic exacerbated the working hours and workload but only with minimal changes in compensation, it resulted in the shift of occupational stressors to compensation among hospital pharmacists. Moreover, the pandemic also declined the economic status of the country which affected the financial capability of HCWs to survive leading to aggravated occupational stress from compensation. Also, the pandemic altered the priorities of hospital administration into managing and controlling the pandemic leading to less focus on maintaining good working conditions and welfare employees including hospital pharmacists, consequently increasing the stress hospital pharmacists experienced from administrative support. Therefore, efforts should be directed in improving the institutional policies of hospitals to promote good working conditions, primarily provision of sufficient compensation, and refining the public health emergency response plan to maintain well-being and competency of healthcare workers such as hospital pharmacists during a health crisis.

## Compliance with ethical standards

### *Acknowledgments*

Authors would like to acknowledge Dr. Jan Karlo T. Ecalne, who was constantly there during the course of the study, giving his expertise and valuable suggestions for the paper's improvement. To the validators, Mr. Jebb Patrick M. Delos Santos, Mrs. Ma. Elena T. Herrero, and Dr. Flordelyn Cobar Lundgren, for giving their time to assess the research study instrument and provide feedback on how to improve the survey questionnaire.

### *Disclosure of conflict of interest*

As approved by the Centro Escolar University Institutional Ethics Review Board (IERB); A review of management of conflict arising from financial, familial, or proprietary considerations of the PI, sponsor, or the study site is not applicable. There is no conflict of interest in this study.

### *Statement of ethical approval*

The present research work does not contain any studies performed on animals/humans subjects by any of the authors.

### *Statement of informed consent*

Informed consent was obtained from all individual participants included in the study.

---

## References

- [1] Bhui K, Dinos S, Galant-Miecznikowska M, de Jongh B and Stansfeld S. Perceptions of work stress causes and effective interventions in employees working in public, private and non-governmental organisations: a qualitative study. *BJPsych Bulletin*. 2016; 40(6): 318–325.
- [2] Dayrit MM, Lagrada LP, Picazo OF, Pons MC and Villaverde MC. The Philippines health system review. *Health Systems in Transition* [Internet]. New Delhi: World Health Organization, Regional Office for SouthEast Asia; 2018.
- [3] Etikan I, Musa SA and Alkassim RS. Comparison of convenience sampling and purposive sampling. *American Journal of Theoretical and Applied Statistics*. 2016; 5(1), 1-4.
- [4] Chhibber A, Kharat A, Kneale D, Welch V, Bangpan M and Chaiyakunapruk N. Assessment of health equity consideration in masking/PPE policies to contain COVID-19 using PROGRESS-plus framework: a systematic review. *BMC Public Health*. 2021,1682 (2021): 1-25.
- [5] Kruse FM, Jeurissen PP. For-profit hospitals out of business? financial sustainability during the covid-19 epidemic emergency response. *International Journal of Health Policy and Management*. 2020, 9(10): 423-428.
- [6] Aldino, NH, Franksiska R. Examining the impact of habit, workload, and work environment to work stress on millennial generations. *International Journal of Economics, Business and Accounting Research*. 2021; 5(3): 697-710.
- [7] Hobbs HL. A qualitative study of millennials in the workplace: gaining their long-term employment in news media firms in North Alabama [Ph.D. dissertation]. Melbourne, Florida: Florida Institute of Technology; 2017.
- [8] Seitenbach J. An exploratory study of how millennials approach and communicate mental health in the workplace [Master's thesis]. New York: The City University of New York; 2019.
- [9] Ath Thaariq MF and Indrayanti I. The work stress of millennial employees reviewed from the viewpoint of organizational climate with team-member exchange as a moderator. *ANIMA Indonesian Psychological Journal*. 2021, 36(2): 156-183.