The Relationship of Demographic Factors to the Mental Health of Security Guards and Janitors in the Healthcare Industry

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Abstract

During these trying times, the non-medical related ones, security guards, and janitors working in hospitals were also vulnerable to the COVID-19 virus. The researchers identified factors that influenced the current mental health of these vulnerable workers and provided the basis for adequate intervention of mental health problems. The study's respondents were janitors and security guards in the healthcare industry within Metro Manila. The significance of the variables age, gender, household size, employment status, number of working hours per day, number of minutes of break time per day, and monthly income on the total symptom severity score was assessed. The researchers gathered data concerning the demographic factors, and PTSD Checklist Civilian Version (PCL-C) was utilized to obtain the Total Symptom Severity Score. Multiple Linear Regression Analysis, Pearson's Correlation Analysis, and Point-Biserial Correlation Analysis were used to determine significant variables. This study suggested a significant association between the number of working hours with the total severity score of the respondents among the seven demographic variables. The data generated revealed that the total symptom severity score of the respondents increased for every hour of working. The researchers recommended that 8 hours every day cause significant positive mental health results and well-being benefits. They should avoid working 48 hours or more every week. The company should invest in science-based mental health intervention and implement social activities to prevent mental health declination.

Keywords
Security Guards, Janitors, Demographic Factors, Mental Health and Healthcare Industry.

1. Introduction
Janitors and security guards in the hospitals are the ones that maintain orderliness and are considered "virus cleaners" and safety, respectively. They are said to work in a shifting operating schedule of twenty-four hours a day from Monday to Sunday, including holidays under contractual employment through third-party agencies (Lung Center of the Philippines, 2015). Although these workers are not directly involved in any medical response in the health care facility, janitors and security guards serving and working in public hospitals face the same health risks as medical healthcare workers (Ramos 2020). They are considered non-medical workers in health facilities (Department of Health Administrative Order No. 2022-0001, 2022) who are left unnoticed throughout the current Coronavirus-19 (COVID-19) pandemic (Branson-Potts 2020). In connection, a study conducted by Frutos et a. (2020) identified that non-medical workers who carried out essential activities during the COVID-19 pandemic showed a high level of mental distress. A part of mental health is when an individual realizes his abilities, can cope with everyday stresses of life, and work productively. The incoherence of having a good state of mental health, promotion, protection, and restoration of mental health are vital concerns of individuals to communities they are in, including their workplace. (World Health Organization 2018). However, some elements hinder one's mental health steadiness, leading to its deterioration.

A study conducted by Tan et al. (2020) stated that non-medical workers in healthcare facilities experience stress, depression, and anxiety associated with the Coronavirus pandemic. The same study indicated that the low mental

health status of these non-medical employees is due to the less infection control standard precautions training, lack of support for mental health, and limited medical and health information on the pandemic. Similarly, gender, age, income, and employment arrangement were some demographic factors that influenced the declination of mental health among support workers like security guards and janitors (Sarhan et al. 2021). Therefore, crucial risk factors that affect the employees' mental health should not be overlooked. Janitors and security guards are the fundamental staff that provides orderliness, security, and stability in healthcare facilities. A study by Milner et al. (2019) found out that lower-skilled workers had an overall lower level of mental health. Furthermore, no studies discuss factors that can affect the mental health of non-medical employees like security guards and janitors in the hospitals whose health is also at risk (Johnson et al. 2020). Thus, analyzing the significance of the factors that may affect their mental health and determining their concerns is critical in ensuring a sustainable organization and client-oriented outcome.

1.1 Objectives

This research aims to analyze the significance and correlation of demographic factors with the PTSD symptom severity of the employees.

2. Literature Review

Mental health issues have been widely associated with high levels of stress that a person experiences in a specific environment. Existing studies have well-defined the relationship of high levels of stress an employee experiences in his job environment. A study published by Nguyen et al. (2016) revealed that when a worker is exposed to high levels of stress, it is caused by an imbalance between perceived demands and perceived resources and the individual's abilities to cope with the needs of his job. Particularly, excessive workload and high levels of time pressure, conflicting roles, and poor social support in terms of social relationships and management support can contribute significantly as risk factors in their mental and physical health (Marcatto et al. 2020 and Rana et al. 2020).

Accordingly, It was found by Nguyen et al. (2016) that work-risk factors can develop behavioral and mental conditions such as burnout, exhaustion, anxiety, and depression that can result in short-term and long-term effects on the employees' physical health. According to Shaw et al. (2018), short-term effects like an increase in one's heart rate and more substantial heart muscle contraction for an extended amount of time can be a factor to persist in long-term health concerns like high blood pressure, myocardial infarction, or cerebrovascular accident may continue. Similarly, poor mental health can also affect employees' physical performance by decreasing productivity (Shaw et al. 2018). Bubonya et al. (2017) pointed out that the rate of absences is five percent higher among employees who appeared to have poor mental health. These linked effects of work-related risks on the employees' psychological and physical health and work performance can result in direct and indirect costs to employers for about billions of money annually (Bubonya et al. 2017). Thus, identifying work-related stress factors that affect workers, mental health can enhance medical surveillance, plan interventions to improve their work performance and improve content and context work factors (Marcatto et al. 2016).

Janitors and security guards classified as indirect and essential frontliners who deliver care and services to the hospitals are also exposed and are unremembered throughout the COVID-19 pandemic. There is little to no attention and recognition to those vulnerable to contracting the virus (Branson-Potts 2020). Apart from the lack of personal protective equipment and the increasing rate of patients in hospitals, essential workers like janitors and security guards who are service workers in the hospitals are also exposed to health risks like medical workers or HCWs. A study conducted by Toh et al. (2021) showed the comparison between the mental health of healthcare workers and non-healthcare frontliners amidst the Coronavirus disease (COVID-19) pandemic in Australia. By analyzing socio-demographic data that was asked (e.g., age, gender, employment, and what category of worker they are), they were required to determine their main concerns regarding the Coronavirus disease pandemic from a list of choices in the questionnaire. The study found out that non-medical frontliners in the hospitals have worse indicators of anxiety and have poorer quality of life than healthcare workers. They experience more pressure and discontent in comparison to healthcare workers. Due to these results, other essential workers should be given more help because they have insufficient training, knowledge, and mental health support than healthcare workers. According to Lancaster et al. (2016), a higher risk for PTSD has also been associated with numerous pre-trauma variables, such as female gender, disadvantaged social, intellectual, and educational status. Janitors and guards prone to this type of variable can be considered at risk of PTSD, especially during a pandemic that elevates its vulnerability.

Covid-19 pandemic classifies as a traumatic event that goes beyond the range of typical human experience with exposure to the risk of death (Dutheil et al. 2020). Given that the health system will be overwhelmed, frontline healthcare non-medical frontliners such as hospital janitors and guards will inevitably face the risk of COVID- 19 infection (Dy and Rabajante 2020), and unprecedented demands will swell within the industry. Thus, this exceptional occurrence triggers psychopathologies such as acute stress disorder (ASD) and post traumatic stress disorders (PTSD). According to Schwartz et al. (2021), psychosocial factors might be associated with work-related injuries. This study used the Perceived Stress Scale-4 (PSS-4) and the Single Item Stress Scale (SISS) questions to address and evaluate how stressed the janitors are. Four hundred thirty-eight janitors responded to the Single Item Stress Scale, and thirty-one percent said they were not at all or very little stressed, thirty-six percent said they were sometimes stressed, twenty-three percent said they were often stressed. Ten percent said that they were very much stressed. Three hundred ten janitors were responding to the Perceived Stress Scale-4. On this scale, there were no counted results.

A moderate positive correlation of 0.35 was identified between the Perceived Stress Scale-4 and the Single Item Stress Scale. It indicates that the Single Item Stress Scale results and the Perceived Stress Scale-4 have a moderately strong relationship. At the same time, security guards' nature of work revealed a correlation between traumatic events that security guards encountered at their work and posttraumatic stress disorder in security guards. The following rates are also mentioned in the article: The signs of posttraumatic stress disorder comprise recalling a traumatic experience, avoiding other people, acting pessimistic, being hostile, experiencing insomnia, acting carelessly, and harming oneself. Rates of posttraumatic stress disorder in security guards were at least seven percent and at most nineteen percent. In relation, rates of posttraumatic stress disorder in the United States were roughly eight percent. Several posttraumatic stress disorder indicators were discovered in this article to restrict someone's interactions with their surroundings and the capacity to perform their duty within their work. Stressors might more negatively impact female security guards in the work environment and their work and household problems than male security guards. The paper further discussed how female security guards undergo specific stressors and problems over their capacity and expertise to carry out their responsibilities compared to male security guards. While Sexual harassment and discrimination in the workplace, insufficiency of support given by their agency, and additional problems between their work and their household add to the stressors that negatively impact their mental health. (Violanti et al. 2017).

Across the studies mentioned above, there is consistent evidence that the mental health problems of workers can be influenced by their experiences and situations in their job. The relation between demographic factors and workers' mental health is sufficiently defined. A study conducted by Pieh et al. (2020) assessed the impact of age on mental health throughout the Coronavirus disease lockdown in Austria by evaluating the respondents' quality of life, well-being, level of stress, depressive symptoms, level of anxiety, and quality of sleep. PHQ-9 was used to evaluate the respondents' depressive symptoms. One of the fundamental discoveries from this study, adults who are fewer than thirty-five years old, are notably more distressed. It is indicated in this study that age is a variable that affects mental health. Adults who are less than thirty-five years old appeared to have the worst results, and the elderly who are in the age greater than sixty-five years old have the best results.

The study conducted by Liu et al. (2021) indicated that female healthcare employees had a higher possibility of mental health concerns than male healthcare employees. They analyzed several mental health concerns concerning the gender of the healthcare employees during the pandemic. Data regarding their socio-demographics, job factors, and living conditions were gathered using a survey questionnaire. The previous study collected data on the employees' living conditions and supported a dynamic relationship between household size and mental health. An increase in the level of persons per bedroom is associated with more depressive symptoms (Tagle et al. 2021). The study conducted by Moscone et al. (2016) among job contract employees discovered that being in a temporary employment status increases the probability of acquiring mental health problems, such as anxiety and depression.

According to the preceding article of Choi et al. (2021), some existing research has primarily assessed that overtime is more common in East countries than the West countries. This study has shown that prolonged working time is associated with poor mental health. They classified the working hours into 35 to 39 hours per week, 40 hours per week, 41 to 52 hours per week, 53 to 68 hours per week, and greater than or equal to 69 hours per week in the primary analysis considering the working hours for employees in South Korea (Yoon et al. 2018). The result of this research shows that individuals working their shifts less than or equal to 69 hours per week were more expected to

have critical depressive indicators in comparison to those who are just working their shifts forty hours per week. Overall, working longer than the fifty-two hours per week positions the employees at a bigger chance of experiencing depression.

As stated in the study of Park et al. (2019), having a break time during work helps minimize extreme tiredness and distress. This study assesses the association between inadequate rest breaks and health concerns among apartment janitors in Korea. Information on Korean male apartment janitors was collected from the third and fourth Korean Working Conditions Surveys. Their demographic data and job characteristics were gathered using survey questionnaires. Rest breaks at work were categorized into two groups, sufficient and insufficient. The statistical tool utilized to assess how rest breaks impact health concerns is zero-inflated negative binomial (ZINB) regression. It concluded that it is necessary to require break times during work to lower the risk of apartment janitors facing physical and psychological health concerns.

A study conducted by Pieh et al. (2020) assessed the impact of income on mental health throughout the Coronavirus disease lockdown in Austria. Its results indicated that mental health concerns in low-income employees are more prevalent than medium to high-income employees. The lockdown appears highly frustrating to low-income workers because they are crucially more burdened in the ongoing pandemic. Therefore, a decrease in income is linked with higher chances of experiencing mental health disorders. Macintyre et al. (2018) claimed that economic recession and low income are associated with mental health decline. Income is a basis on the racial difference that dictates social class in the community infers health inequalities. It is also stated that people with low-income experience socioeconomic disadvantage and are exposed to exclusion, discrimination, and trauma. Greater inequality within societies leads to undermining the quality of social relations, status competition, and prevalence of mental illness. Consequently, those with low income are more exposed to adverse mental health complications and affect their social lives.

3. Methods

A correlational research design was utilized to specify the relationship between the variables without the control of the researchers. The researchers considered the demographic factors found in different studies stated in the previous chapter that can cause poor mental health in employees as independent variables. The demographic factors such as age, gender, household size, employment status, no. of working hours per day, no. of minutes of break time per day, and monthly income were used as independent variables of this study. The dependent variable is the Total Symptom Severity Score of the respondents collected using the PCL-C. The data gathered from the respondents were analyzed through Multiple Linear Regression Analysis for all the variables. Pearson's Correlation Coefficient for the continuous variables such as the dependent variable and the independent variables, excluding gender and employment status; and Point-Biserial Correlation Coefficient for the continuous dependent variable and the dichotomous independent variables, which are gender and employment status. The G power analysis tool was utilized in this study to calculate sample size in coordination with Multiple Linear Regression Analysis, Pearson's Correlation Analysis, and Point-Biserial Correlation Analysis that the researchers will use. The software tool computes statistical power analyses for many specific tests: t-tests, F tests, $\chi 2$ tests, z tests, and a few exact tests. The sampling method deployed is non-probability convenience sampling, enabling the researchers to gather faster and low-cost data. Target respondents were readily available upon the approval of requests to distribute questionnaires.

4. Data Collection

Through convenience sampling, the researchers surveyed janitors and security guards through the following tools:

- **Demographic Data Questionnaire** was used to gather demographic data such as age, gender, household size, employment status, number of working hours per day, number of minutes of break time per day, and monthly income of the respondents. The mentioned demographic data were subjected to statistical analysis. The questionnaire is written in Filipino for a better understanding by the respondents. The questionnaire was self-administered for both janitors and security guards through hard copies handed out through their agency and Google Forms, respectively.
- **PTSD Checklist Civilian Version (PCL-C)** - alongside the demographic data questionnaire, this checklist was used to obtain the study's dependent variable that helped the researchers correlate its results, total symptom severity score to the independent variables. The checklist was translated to Filipino for better understanding by the respondents.

5. Results and Discussion

The researchers analyzed the correlation of demographic factors with the PTSD symptom severity of the respondents, which is shown in Table 1. With the data gathered in understanding the key results determined, the objective was addressed initially through two statistical correlation tests. Pearson's Correlation Analysis was used initially for the continuous independent variables such as age, household size, no. of working hours per day, no. of minutes of break time per day, and monthly income of the security guards and janitors working in the healthcare industry. Both their age and household size had low positive correlations with the PTSD symptom severity of the respondents. The number of working hours per day had a high positive correlation with the PTSD symptom severity of the respondents. While the daily break time in minutes and the monthly salary of these employees had moderate negative correlations with their PTSD symptom severity. Point-Biserial Correlation Analysis was used initially for the dichotomous independent variables such as the gender and employment status of the security guards and janitors working in the healthcare industry. Their employment status in their agencies negatively correlated with their PTSD symptom severity. However, the analyzed data revealed that the gender of the security guards and janitors had a negligible correlation with the PTSD symptom severity. This chapter will further discuss the output interpretation wherein the researchers determined the significant and non-significant independent variables using the other statistical tool, Multiple Linear Regression.

Table 1. Correlation Analysis

Independent Variable	Dependent Variable	Size of Correlation	Interpretation
Age	Total Symptom Severity Score	0.40	Low positive correlation
Household Size	Total Symptom Severity Score	0.41	Low positive correlation
No. of Working Hours per Day	Total Symptom Severity Score	0.77	High positive correlation
No. of Minutes of Break Time per day	Total Symptom Severity Score	0.52	Moderate negative correlation
Monthly Income	Total Symptom Severity Score	-0.61	Moderate negative correlation
Gender	Total Symptom Severity Score	0.18	Negligible correlation
Employment Status	Total Symptom Severity Score	-0.38	Low negative correlation

Checking assumptions is necessary to generalize the sample model to the whole population. Several conditions must be complacent to avoid bias and misleading results. The tables and graphs shown in the consecutive pages conclude that the data gathered satisfied the following assumptions in Table 2.

Table 2. Results and Discussion of Assumptions for Multiple Linear Regression

Assumption	Compliance
Data have at least 20 points	There are 50 data points per independent variable.
Normal Distribution	The P-P plot (Figure 3) shows that the dots are following a diagonal line. Histogram (Figure 1) portrays that the residuals follow the normal shape of the distribution.
Linearity	The Scatterplot (Figure 2) shows that there are random positive and negative values across the whole range of the variables plotted. It portrays scatter points which indicates an arbitrary distribution and absence of pattern. The relationship is linear.
Independence	Each data point came from a different person.
Independent Errors	The Scatterplot (Figure 2) indicates no relationship between the residuals and the variable.
No significant outliers	No significant outliers were present on the P-P plot (Figure 3).
No multicollinearity	The variance inflation factor (Table 3) of the variables appears to be less than 10, and the average variance inflation factor is not substantially greater than 1. The collinearity tolerance (Table 3) of each variable is greater than 0.2.
Homoscedasticity	The Scatterplot (Figure 2) and P-P plot (Figure 3) exhibit that the variance of the predictor is constant. The residuals of the independent variables have the same variance.

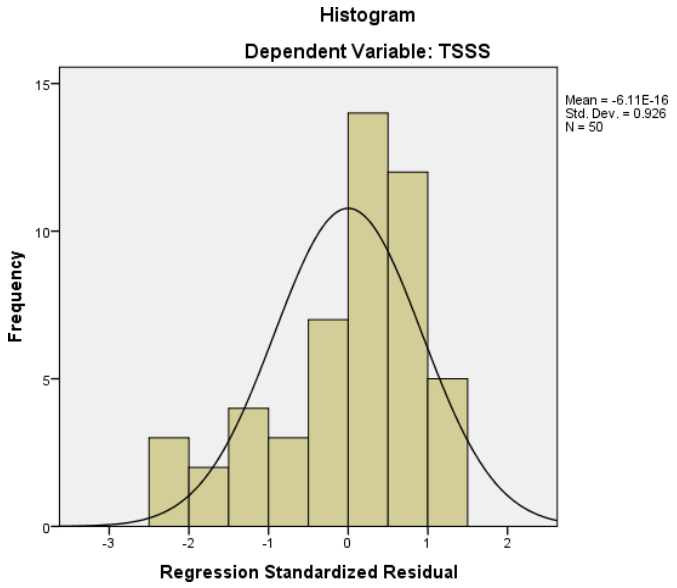

Figure 1: SPSS Output - Histogram

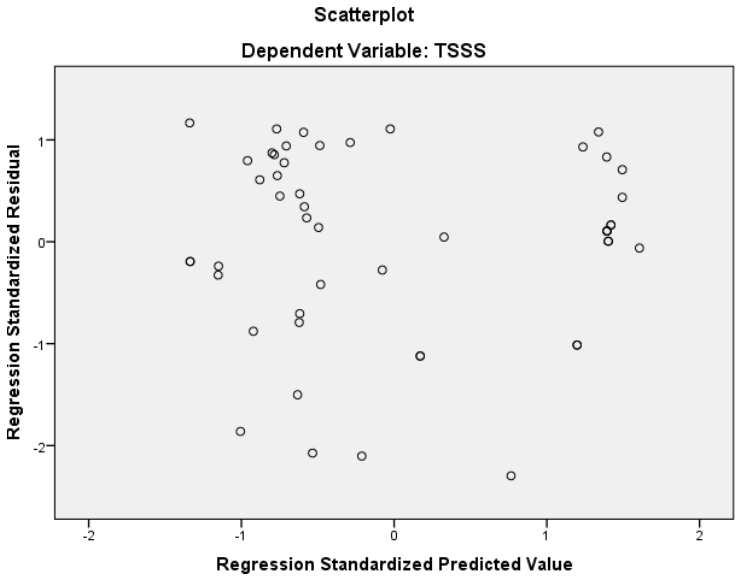

Figure 2. SPSS Output - Scatterplot

Table 3. SPSS Output - Collinearity

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients			Correlations			Collinearity Statistics	
		B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part	Tolerance	VIF
1	(Constant)	-36.321	28.719		-1.265	.213					
	Age	.238	.221	.129	1.079	.287	.403	.164	.101	.608	1.644
	Gender_Number	-1.039	3.522	-.029	-.295	.769	-.178	-.045	-.028	.878	1.139
	Household_Size	1.373	1.164	.123	1.179	.245	.405	.179	.110	.805	1.243
	Employment_Number	-2.034	4.150	-.061	-.490	.627	-.380	-.075	-.046	.571	1.751
	Working_Hours	7.079	1.822	.768	3.885	.000	.765	.514	.363	.224	4.469
	Break_Time	.345	.196	.276	1.764	.085	-.521	.263	.165	.356	2.807
	Income	-.001	.001	-.098	-.617	.541	-.611	-.095	-.058	.348	2.877

a. Dependent Variable: TSSS

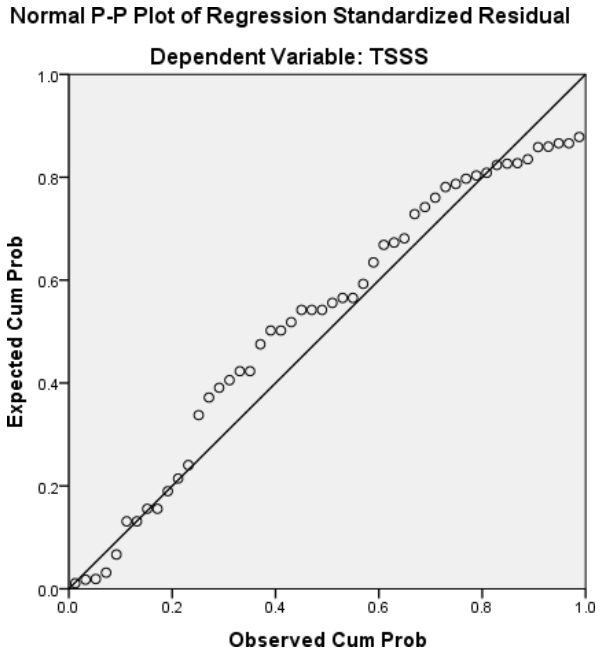

Figure 3. SPSS Output - Normal P-Plot of Regression Standardized Residual

Table 4. SPSS Output - ANOVA Results of Multiple Linear Regression Analysis

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	8849.667	7	1264.238	10.345	.000[b]
	Residual	5132.833	42	122.210		
	Total	13982.500	49			

a. Dependent Variable: Total_Severity_Score

b. Predictors: (Constant), Monthly_Income, Gender, Age, Household_size, Employment_Status, Break_time, Working_hours

In total N = 50 respondents participated in the study (Security Guards: N = 24; Janitors: N= 26). A multiple linear regression analysis was used to determine significant variables demographic factors that affect the respondents' mental health from their total severity symptom score. A significant regression equation was found F(7, 42) = 10.345, p = .0004, with an adjusted R2 of .572 (Table 5). The results presented in Table 4 indicated that the model is significant (Sig. value = 1.8312150337912E-07) in how the demographic factors affect mental health. This study focuses on the respondents' mental health from their total severity symptom score for approximately 57.2% and is considered to have a moderate strength relationship.

Table 5. Regression Statistics

Multiple R	0.795556527
R Square	0.632910188
Adjusted R Square	0.571728552
Standard Error	11.0548775
Observations	50

Table 6. Multiple Linear Regression Results and Interpretation

Independent Variable	Dependent Variable	P-value (Sig.)	Interpretation
Age	Total Symptom Severity Score	.287	Does not have a significant effect
Household Size	Total Symptom Severity Score	.245	Does not have a significant effect
No. of Working Hours per Day	Total Symptom Severity Score	.0004	Has a significant effect
No. of Minutes of Break Time per day	Total Symptom Severity Score	.085	Does not have a significant effect
Monthly Income	Total Symptom Severity Score	.541	Does not have a significant effect
Gender	Total Symptom Severity Score	.769	Does not have a significant effect
Employment Status	Total Symptom Severity Score	.627	Does not have a significant effect

This study suggests a significant association between the number of working hours with the total severity score of the respondents among the seven demographic variables (Sig. value = .0004, Table 6). The data generated reveals that the total severity score of the respondents increased for every hour of working. The hypothesis of the model/equation was addressed because at least one of the population coefficients of the demographic factors is not equal to zero, so the model is significant. The independent variables' hypothesis was addressed with the analysis of some of the variables having a coefficient of not equal to zero but only the number of working hours per day has a p-value less than the alpha value.

The janitors in Philippine hospitals are said to have three (3) shifts per day with eight (8) hours per shift per personnel every Monday to Sunday, including their 60 minutes break (Dr. Jose Fabella Memorial Hospital, 2015). While security guards are said to have four (4) shifts per day with eight (8) hours per shift per personnel, including their 60 minutes break. (San Lorenzo Hospital, 2021). Even though hospitals are following the required eight (8) working hours per day for these employees, this study found out that security guards tend to have more than the required number of working hours ranging from nine (9) hours to twelve (12) hours. One of the possible reasons security guards in hospitals tend to work overtime up to 4 hours is the additional compensation of 25% of his regular work wage. Furthermore, when the employer asks his employee to work beyond eight hours on holiday or rest day, they are liable to pay additional compensation to the average eight-hour pay plus 30% of his wage (Labor Code of the Philippines, 2020).

6. Conclusion

The study's objective was initially addressed through correlation and then analyzed through multiple linear regression. In the statistical correlation test, both the age of the respondents and the number of people in the household a worker lives (household size) had low positive correlations, the number of working hours per day had a high positive correlation. In contrast, the daily break time in minutes and the monthly salary of these employees had moderate negative correlations, their employment status had a low negative correlation, and the gender of the security guards and janitors had a negligible correlation. After analyzing the data, the hypothesis of the model/equation was significant because at least one of the population coefficients of the independent variables is not equal to zero. However, the hypothesis of the number of working hours per day is the only demographic factor with a p-value less than the alpha. The objective was addressed in the multiple linear regression analysis by identifying the significant demographic factors. A significant association between the number of working hours with the total severity score of the respondents among the seven demographic variables was found. The data generated reveals that the total severity score of the respondents increased for every hour of working. Since the study found that the number of working hours possesses the significant variable affecting total symptom severity among the janitors and guards in the healthcare industry, agencies, and government officials, including the workers, should be well aware of the adverse effect of long work hours. An awareness to everybody inside the industry that if their mental health becomes poor, the productivity lessens, and one's occupational health is at risk. According to the study of Kamerade

et al. (2019), 8 hours daily was enough to cause significant positive mental health results and well-being benefits among the workers. Based on the same study, it's 40 hours a week, so working 48 hours or more weekly is terrible for workers' well-being. The company should invest in preventing and intervening in mental health deterioration to lessen its potential effects and long-term complications. Governments and agencies may consider having a mental health policy for its health care company that offers mental health sick days off, which allows easing stress levels for an individual. Engagement in social activities would highly be recommended, such as group lunch, sports playing, short vacation, and team-building activities. Lastly, implementing mental health webinars and one-on-one sessions with a professional to learn new skills to cope and manage daily stressors and symptoms associated with the given diagnosis.

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