A cross-sectional study on the stress level and demographics of hospital workers

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A B S T R A C T

This study aims to know the stress level of the respondents, the comparison and relationship between stress level and demographic profile of the respondents. This study uses a cross-sectional research design; total enumeration is utilized with 295 hospital workers. This study used a survey as the primary data gathering tool. Statistical test used were frequency, percentage, median, Mann-Whitney, Kruskal-Wallis, and Kendall-tau. The median reveals a score of 14.00 for the level of stress of the respondents. Test of difference between stress level across their profile reveals: For sex Mann-Whitney U test shows a score of U (293)= 11165.50 p= 0.13. For age Kruskal-Wallis H test shows X2 (3)= 7.69, p= 0.06; for monthly income Kruskal-Wallis H test shows X2 (5)=8.45, p= 0.13; for department assigned Kruskal-Wallis H test shows X2 (5)=26.56, p= 0.01. For the test of the relationship between stress level and age and monthly income of the respondents, Kendall-tau reveals a score of Tb=-0.10, p= 0.03, and Tb= -0.06, p= 0.22, respectively. The respondents are experiencing a healthy amount of stress; the stress level of the respondents are not dependent on their sex, age, and monthly income, instead stress level is dependent of the department of assignment, in which nurses are experiencing more stress among the profession of the respondents; finally, monthly income has no influence with the stress level of the respondents, but their age has a minimal reverse influence on their stress level.

1. Introduction

Stress level as defined by Mosby's Medical Dictionary (Mosby, 2012) as "the severity of manifested physical or mental tension resulting from factors that alter an existing equilibrium." Doyle (2018) gave another definition as "stress is a negative feeling and can be associated with physical symptoms," this means that stress can alter the normal functioning of a person and is caused by different factors. After more than 50 years of research focused on stress, those studying it have not been able to agree on an acceptable definition of the term (Krohne, 2002). It has been defined in one of two ways: the first defines stress as being the stimulus that results in an arousal reaction, the second considers as it the state in response to the stimulus or other words, the stress reaction.

Meanwhile, the healthcare industry is one of the most stressful industries; stress is part of the job of healthcare workers. In an industry that deals with life or death, it is no surprise. Healthcare workers in a report are 69% stress, and 12% are highly stressed. Furthermore, 55% of healthcare workers reported that they have increased workload over the past years (Ricker, 2014). Healthcare workers deal with life-threatening injuries and illnesses complicated by paperwork, intricate or malfunctioning equipment, complex hierarchies of authority and skills, overwork, understaffing, tight schedules, dependent and demanding patients, and patient deaths; all of these contribute to stress (USDL, 2014). Furthermore, Nabirye et al. (2011) claimed that occupational stress is a common phenomenon among different professions worldwide, is known as a significant occupational health problem for healthcare professionals, especially nurses.

There were several attempts to explain the different causes of stress, how stress affects people,

the difference between 'good' or 'positive' stress and 'bad' or 'negative' stress, and some common facts about how stress affects people today. Meanwhile, Family.Jrank (2020) suggested that demographic factors play an essential role in the kinds of social stressors people are experiencing; gender also plays a role in the article stated that females are more prone to stress than men. Stress is part of life, all age group experiences stress, "young adults may have struggled to establish a career, achieve financial freedom, or juggle work and family demands, older people may face failing health or dwindling finances or simply the challenges of preserving their independence" (Woolston, 2020). According to the APA (2012), most of the stress experienced by younger Americans, and they do not manage it very well. Further, Family.Jrank (2020) claimed that economic problems are pervasive in a community, which means that if the economy is weak, there is also an increase in stress and to the extent, which will result in violence.

It is worth noting that stress affects all professions, as claimed by many authors. Stress is a detrimental factor in the workforce in any institution; it does affect not only the physical well-being of a person but also their mental health. Thus, stress assessment or identification and management is a crucial step in the maintenance of a productive human resource. Furthermore, the researcher found a dearth in the literature on the research theme that is focused on healthcare workers or employees of the hospital around the world.

With all these premises in mind, the researcher aims to know the stress level of the respondents, the comparison and relationship between stress level and demographic profile of the respondents. This study will be a baseline for the Private hospital in taking the contributory factors of the workers' stress levels and also in developing a program to lessen the stress being experienced by the healthcare workers.

This study was guided with the following hypotheses:

1. There is no significant difference between the stress levels of the respondents across their profile.
2. There is no significant relationship between the stress levels of the respondents and their selected profile.

2. Methodology

This study utilizes cross-sectional since the aim of this study is to compare and look at the relationship between stress level and demographic profile without inferring causation (Polit and Beck, 2017).

The study focuses on employees who are work in a secondary private hospital in a City in Pangasinan, Philippines. Specifically, it focuses on front-line employees; managers, supervisors, and administrators are the exclusions in this study. Moreover, other hospitals like government and primary level hospitals are also exclusions in this study. Total enumeration was utilized with 295 respondents to fully represent the population (Plichta and Garzon, 2009).

This study uses a self-report survey. The survey has two parts; part I covers the demographic profile of the respondents, while part II is adapted from the Perceived Stress Scale (PSS-10) by Cohens. The PSS has acceptable psychometric properties (Sun et al., 2019). The PSS is composed of 10 items and is answerable by the following scale "0–never," "1–almost never," "2–sometimes," "3–fairly often" "4–very often." Further, questions 4, 5, 7, and eight are with reverse scoring.

After all the approval is secured the researcher, administers the questionnaire personally. Data Collection and retrieval were completed in August 2018.

After data collection, it is organized, process, and analyzed using Statistical Package for Social Sciences version 24. To describe the stress level of the respondents' frequency, percentage, and median are utilized. Below is the descriptive equivalent of the score form PSS-10.

0.00-13.99	Low Stress
14.00-26.99	Moderate Stress
27-40.00	High Stress

The level of measurement for stress levels is continuous data. Further, a Kolmogorov-Smirnov test that D (295)= 0.14, p= 0.01, and Shapiro Wilk W (275)= 0.92, p= 0.01, the two tests suggests that the data is not normally distributed, which means that the non-parametric test is more suitable to use in this study.

Hence, to check the comparison between the stress level and sex Mann-Whitney is utilized because sex is a dichotomous data. To check the comparison between the stress level and age, monthly income, and department assigned Kruskal-Wallis is utilized since all the data mentioned are more than two groups.

Finally, to look at the relationship between the stress level and age, and monthly income Kendall-tau was employed; age and monthly income are continuous data.

3. Results

Table 1 displays the level of stress of the respondents; the vast majority (62.03%) of them are experiencing moderate stress, some (37.29%) are experiencing low stress, and very few (0.68%) are experiencing high stress. The median reveals a score is 14.00, which means that the overall stress level of the respondents is moderate stress.

Table 1: The level of stress of the respondents N=295

Stress Level	Frequency	Percentage	Median	Interpretation
Low	110	37.29		
Moderate	183	62.03	14.00	Moderate Stress
High	2	0.68		

Table 2 depicts the difference between the stress levels of the respondents across their profile.

Table 2: The difference between the stress level of the respondents across their profile N=295

Profile		Frequency	Median	Statistical Test	df	p-value	Interpretation
Sex	Male	108	14	(U) 11165.50	293	0.13	Not Significant
	Female	187	14				
Age	Below 25 years old	55	14	(H) 7.69	3	0.05	Significant
	25-34 years old	129	14				
	35- 54 years old	99	13				
	55 years old and above	12	12				
Monthly Income	8060-9059 PHP	44	14	(H) 8.45	5	0.13	Not Significant
	9060-10059 PHP	82	14				
	10600-11059 PHP	77	14				
	11060-12059 PHP	15	15				
	12060-13059 PHP	23	13				
	13060 PHP and above	54	13				
Department	Medical	7	12	(H) 26.56	5	0.01	Significant
	Nursing	95	16				
	Dietary	16	13				
	Laboratory and Imaging	60	13				
	Maintenance	70	14				
	Administrative	47	14				

A Mann-Whitney U test shows that there was no significant difference U(293)=11165.50, p=0.13, between the stress level of male (14.00) and female (14.00), which suggest that both sexes are experiencing the same stress level.

A Kruskal-Wallis H test shows that there is no significant difference between stress level and age of the respondents, $X2$ (3)= 7.69, p= 0.06, with a median score (14.07) for below 25 years old, (14.58) for 25-34 years old, (13.42) for 35-54 years old, and (12.50) for 55 years old and above, this suggests that the stress level of the respondents does not vary with their age.

A Kruskal-Wallis H test reveals that there significant difference between stress level and monthly of the respondents, $X2$ (5)= 8.45, p= 0.13, with a median score of (14) for 8060-9059 PHP, (14.00) 9060-10059 PHP, (14.42) 10600-11059 PHP, (15.27) 11060-12059 PHP, (12.87) 12060-13059 PHP, (13.22) 13060 PHP and above, this suggests that the stress level does not vary with the respondents' monthly income.

A Kruskal-Wallis H test reveals that there is a significant difference between stress level and the department of the respondents $X2$ (5)= 26.56, p= 0.01, with a median score (12.43) for medical, (15.63) for nursing, (12.88) for dietary, (12.70) for laboratory and imaging, (13.58) for maintenance, (13.72) for the administrative, this implicates that the stress level of the respondents varies by their department, it is worth noting that the nursing department has the highest level of stress, and the medical department has the lowest level of stress.

Table 3 shows the relationship between stress level and age and monthly income.

Table 3: The relationship between stress level and selected profile N= 295

Stress Level	Tb- value	p-value	Interpretation
Age	-0.10	0.03	Significant
Monthly Income	-0.06	0.22	Not Significant

Kendall-tau reveals that there is a significant negative, weak relationship between stress level and age of the respondents with a score of Tb= -0.10, p= 0.03, this means that as the respondents ages their level of stress is minimally decreasing.

Kendall-tau reveals that there is no significant relationship between stress level and monthly of the respondents with a score of Tb= -0.06, p= 0.22, which indicates that both variables have no association.

4. Discussion

The findings in Table 1 suggest that the hospital workers are experiencing the right amount of stress, according to Eltringham and Knowledge (2014), moderate stress can enhance performance, they further claim that exposure to moderate stressful events can make a person make better decisions. In the healthcare field, this is much needed since healthcare workers deal with life. With this claim, exposure to a moderately stressful situation can enhance the quality of care and service healthcare professionals can deliver.

The finding is the difference between stress, and sex level supports the finding of Chaudhry (2012). Chaudhry (2012) found out that males and females have no variation in the stress level they are experiencing. The finding contradicts the claim that females are more prone to stress than men (Family.Jrank, 2020). Regarding age, the finding of the present study supports the findings of Chaudhry (2012), and Martin et al. (2001); they found out that stress level has a difference between age groups. Moreover, Table 3 shows that as the respondents' ages, their level of stress is minimally decreasing, which also supports the findings of Aldwin (1991). Aldwin (1991) found out that there is a weak negative association between stress level and age. It is also worth noting that in the present study, those in the younger age bracket is experiencing a higher level of stress, this may be due to the struggle to establish a career, achieve financial security, or juggle work and family demands (Woolston, 2020).

Regarding monthly income, both the test of difference and relationship yielded a not significant

result, which means that the respondents have no issue with their salary; this may be because the monthly income of the respondents is above the minimum rate in Pangasinan province (NWPC, 2019); this further implicates that the respondents can provide their basic needs and more. This finding supports the claim of Scott (2019) that higher-paying jobs have greater personal control leading to a lower stress level. Regarding the department, the respondents are assigned, it shows that there is a significant variation in the work department; it is worth noting that nurses are experiencing the higher stress level, nurses are known to be the front-liner among all the profession concern with healthcare. The Philippines are also experiencing a nursing shortage, which means nurses are caring for more patients than the acceptable nurse-patient ratio; this supports the claim of Nabirye et al. (2011), stress is a common phenomenon among different professions especially nurses.

5. Limitations of the study

One of the limitations of this study is it was conducted in a single selected hospital using a self-administered method. However, to counteract the possible selection and response bias, the researcher made use of total enumeration. Generalizability to all hospital workers else here in the Philippines cannot be confirmed as well. In addition, the current study used a quantitative approach to assess the difference and relationship between stress levels and demographic profiles of the respondents.

6. Conclusion

The researcher concludes that: The respondents are experiencing a healthy amount of stress that will help stimulate their brain functions at work; the stress level of the respondents are not dependent on their sex, age, and monthly income, instead stress level is dependent of the department of assignment, in which nurses are experiencing more stress among the profession of the respondents; finally, monthly income has no influence with the stress level of the respondents, but their age has a minimal reverse influence on stress. The researcher recommends the following: The hospital human resource department should have a wellness program that addresses the stress that is being experienced by the employees. For future researchers, it is encouraged to replicate the same study with a broader scope that includes the government hospitals, and hospitals that are classified as primary and tertiary hospitals.

Compliance with ethical standards

Ethical consideration

The researcher sought the approval of the concerned authorities from the hospital before the data collection. There is a letter of consent that is attached to the survey. The respondents have the right to refuse and not to participate in the study without any coercion. All data is treated with the highest respect, confidentiality, and anonymity.

Conflict of interest

The authors declare that they have no conflict of interest.

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