

ORIGINAL ARTICLE

OCCUPATIONAL STRESS AMONG A CANCER HOSPITAL NURSES

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ABSTRACT

Hospital nurses receive enormous amounts of physical and mental workload which causes them to develop work-related stress. In this research, a cross-sectional study was carried out to identify the level of perceived stress, and also to investigate the relationship between occupational stressor and perceived stress level among one hundred and eighty two (n=182) nurses in a cancer hospital. Data collection was done using a self-administered questionnaire consists Nursing Stress Scale (NSS) and Perceived Stress Scale (PSS). Based on the results obtained, majority of the nurses perceived high level of stress and six variables namely "workload", "death and dying", "inadequate preparation", "lack of staff support", "conflict with physician" and "conflict with other nurses" have relationship with occupational stress. The relationship between "uncertainty concerning treatment by physician" and "perceived stress" was found to be absent. NSS explained 19.7% of PSS and "inadequate preparation" as well as "conflict with physicians" the most influential factors towards perceived stress among nurses. For future research, this study is suggested to be expanded to a greater sample of nurses in other hospitals to obtain better conclusion and generalisation.

Keywords: NSS, PSS, Occupational Stress, Nurses

INTRODUCTION

Stress is very close to our daily lives and it is believed to affect human health and wellbeing. Over the decades, scholars have been defining stress in many different ways but the general accepted definition is a situation where the resources of an individual are insufficient to cope with the external demands or pressures, and this situation would then affect human physiologically as well as psychologically (Michie, 2002). Among the signs of stress are namely anxious, depressed, being angry and apathetic. For an individual, the outcomes of stress are including stress related diseases, low self-esteem, low quality of life and affected personal development. Stress, if allowed to continue in a person life, could also lead to mental diseases (Cohen et.al.,2007; Slavich et.al.,2010). In short, lifetime stress could cause physical and mental health problem in adults (Toussaint et.al.,2016).

In Malaysia, Yeoh et. al. (2017) reported that according to National Health and Morbidity Survey, 29% of the total Malaysian adults suffer from mental distress in 2015. It is a triple increment as compared to 1996. Yeoh et. al. Also found in their research that high level of stress besides low level of locus control is the predictor to the mental distress. This evidence showed that in this country, stress is an issue that must be seriously addressed and prompt action should be taken.

Stress could also occur at workplaces and renowned as occupational stress. Occupational stress is defined as hazardous physical and

emotional responses that occur in consequence with situation where the demands of job exceed worker's capabilities (Mohajan, 2012). Mohojan also stated that occupational stress in industrialisation world has grew at alarming stage since 40 years ago. Stress at workplaces, if in lower stage, could stimulus the working motivation among workers and as a result, the performance would increase. However, a prolonged high level of stress could cause a worker's mind and body to react in different way which could affect productivity (Kama Azida Kamarulzaman, 2015). Absenteeism ,low productivity, turnover and related diseases are among negative impacts found by researchers in consequences with occupational stress (Hotopf & Wesely, 1997; Sauter & Murphy, 1995; Stahl & Hauger, 1994). Therefore, stress factors at workplaces or better known as occupational stressors (Norqvdist, 2014) are important to be controlled in order to avoid negative impacts towards organisational business activities.

Malaysia is not excluded in occupational stress problem. Several previous researchers explored on occupational stress within Malaysia in various sectors such as higher educational institutes (Noor & Ismail, 2016;Mukosolu et.al., 2015), manufacturing industries(Kumaresan et.al., 2015; Zafir Mohd Makhbul & Durrishah Idrus, 2009), financial institute (Zafir Mohd Makhbul et.al.,2011) as well as healthcare industries (Lua & Imilia, 2011; Beh , 2012; Syed Yahya, Sharifah Zainiyah, Afiq, Chow & Siti Sara,2011; Sukadarin et.al., 2016). Those researches have determined high prevalence rate of occupational stress in respective industries and the factors determined are including heavy workload, carrier

development, working environment, job insecurity and workstations design (ergonomic).

Occupational stress is considered as one of workplace's hazards. Occupational Safety and Health Act 1994 section 4 provides that one of its objectives is to promote and occupational environment which is adapted to a person physiological and psychological needs. Furthermore, its section 15 provided that it is the duty of every employer to provide and maintain a safe workplace and work system including to avoid any health's risk to the workers. These provisions prove the duty for any employers to take reasonable control measures in order to control stress hazards at workplaces. Thus, it is compulsory for employers to manage occupational stressors within their workplaces

Work-related stress in hospitals is also seriously addressed by researchers worldwide and primarily focusing on nurses (Fischer et.al.,2000; Jansen, Jonge & Baker, 1999 etc.). Besides long-hour working, nurses always involve with heavy physical work activities such as manual handling, working in awkward postures, transferring patients and operating hazardous equipment. They work under mental overload, engaging in multitasking and coming across frequent interruptions. Working under physical overload due to long work hours and patient handling demands, leads to a high risk of developing occupational diseases (Sukadarin et.al., 2016).

As previous researches found occupational stress issues in Malaysia's workplaces which involved many professions, nursing is a profession within the hospitals that well-known to be stressful. Stress among nurses in Malaysia is also a never ending issue as many researchers had studied about stress among Malaysian nurses (i.e. Dahlan A. Malek, Baco, Mohammad Azhar Mohamad Nor & Ida Shafinaz Mohamed Kamil, 2016; Syed Yahya et. al, 2011;Loo et.al., 2012 etc.). Syed Yahya et.al. in their study found significant relationship between type of department within public hospital and occupational stress among nurses. Loo et.al, on the other hand revealed that heavy workload, poor working condition and inconsiderate superior are the main causes of stress in X Hospital, Malaysia. Besides, other factors including role ambiguity, conflict among members and lack of recognition are also contributed to stress among hospital nurses. Those studies were conducted in public and private hospitals in general but research regarding stress involving nurses a cancer hospital in Malaysia is yet to be seen. The selected cancer hospital is one of hospitals where specifically focus to treat cancer patients. It is also the main referral place for cancer treatment in Malaysia. As known, cancer is a life-threatening disease and the patients treated in a cancer hospital are subject to death. Intensive

care and monitoring are needed and a lot of critical procedures should be performed by the involved nurses. In addition, meeting the demands of work and at the same time fulfilling the needs and expectation of patients as well as their families could put the nurses in a stressful environment. It is presumed that occupational stress among nurses in this cancer hospital exist at high as same as other hospitals in Malaysia as Syed Yahya et.al. concluded that nurses working with patients who suffer chronic could be more stressful compared to other nurses. Thus, a research to determine occupational stress level at this cancer hospital including distinguishing the contributing factors is essential to assist the management in developing and implementing effective control measures. Managing stress among nurses at a cancer hospital is highly important as occupational stressors, if not being controlled would cause distress among the involving nurses, and furthermore would affect the quality of treatment as well as the recovery of patients

Most occupational health and safety researchers agreed that "psychosocial stressors" was heavily exposed among nurses during their work routine. According to Roberts et al.(2012), psychosocial stressors refers to stressful working conditions including lack of control, long work hours, shift work, interpersonal conflicts, insufficient resources, poor reward systems, inadequate structure of communication flow in hospitals and other healthcare settings and bullying and physical violence. These are also factors that could cause stress among the hospital nurses. Reports from nurses, who feel stressed in a teaching hospital in Porto Alegre has confirmed nursing as the fourth most stressful of occupations (Negeliskii & Lautert, 2011). According to Olayinka et. al. (2013), stress among nurses is an endemic issue as it affects nurses' health problems and lower their performance and productivity. This is because, nursing is a profession that linked with a range of different demands including physical, emotional, and social demands (McCarthy et al., 2010).

There are several factors contribute towards stress among nurses. Past researches had managed to prove that workload contribute to nurses' stress. As studied by Ayed et. al. (2014), the results showed that workload was identified as the chief stressor for Australian nurses working in public acute care hospitals. In addition, other researches as well had proven the relationship between workload and stress among nurses (Kane, 2009 ; Lam,2003; Chun, 2003).

Besides, dealing with death and dying is another factors related to stress among nurses. According to Ayed et. al. (2014), dealing with dying patients is proven to cause stress among Palestinian nurses. In addition, other researchers also determined that dealing death and dying

contributes to stress among nurses (Saleh et al., 2013; Hajbaghery, 2012; Wilson et al., 2011)

Furthermore, inadequate preparation is also found to be a contributing factor towards nurses' stress. This is proven by the results of previous researches which studied on the relationship between these factors and stress among nurses (Peters et al., 2012; Vachon, 1998).

On the other hand, conflicts that occur between nurses and physicians could lead to job dissatisfaction and burnout among nurses (School of Medicine, 2011). Mc Vicar (2003) as well as Hillhouse and Adler (1997) also affirmed that conflict with physician is one of the main sources towards nurses's stress at workplace.

Other variables that have been found to have relationship with stress among nurses by previous researchers are including lack of support from other staff (Abu Al Rub, 2004; Sveinsdottir 2006), uncertainty concerning treatment (Khan et al., 2015), and conflict with other nurses (College of Nurses of Ontario, 2009).

As it is believed that all the stressors above exist in the selected cancer hospital, this research aimed to identify the relationship between occupational stressors and perceived stress level among nurses in the respective cancer hospital. In addition, this research also determined the influence of those stressors on their perceived stress level.

METHODS

Participants

A cross-sectional study was done among one hundred and eighty two (n=182) cancer hospital nurses of different age, gender, race, education level, marital status, and working experience. The respondents were randomly selected to answer the questionnaires. Sample size is determined by using table established by Krecjie and Morgan's (1970).

Instrumentations

A self-administered questionnaire consists three section, A: Respondent's Profile, B: Nursing Stress Scale-NSS (Gray-Toft and Anderson, 1981), and C: Perceived Stress Level-PSS (Cohen et al. (1983) is used to collect data.

The NSS consists 7 factors namely workload (6 items), death and dying (7 items), inadequate preparation (3 items), lack of staff support (3 items), uncertainty concerning treatment (5 items), conflict with physicians (5 items) and conflict with other nurses (5 items). Likert scale that was used for each item which has been assessed as "stressful", which is (0) never, (1) sometimes, (2) frequently, and (3) very

frequently. On the other hand, PSS contains 14 items and respondents are required to circle their response according to the ordinal scale given; Never (0), Almost Never (1), Sometimes (2), Fairly Often (3) and Very Often (4) without skip.

Theoretical Framework

The framework of this study is divided into two parts: independent variables and dependent variable. The dependent variable is stress among nurses while the independent variables are workload, death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment, conflict with physicians and conflict with other nurses. Diagram 1 depicted the theoretical framework which derived from previous literatures.

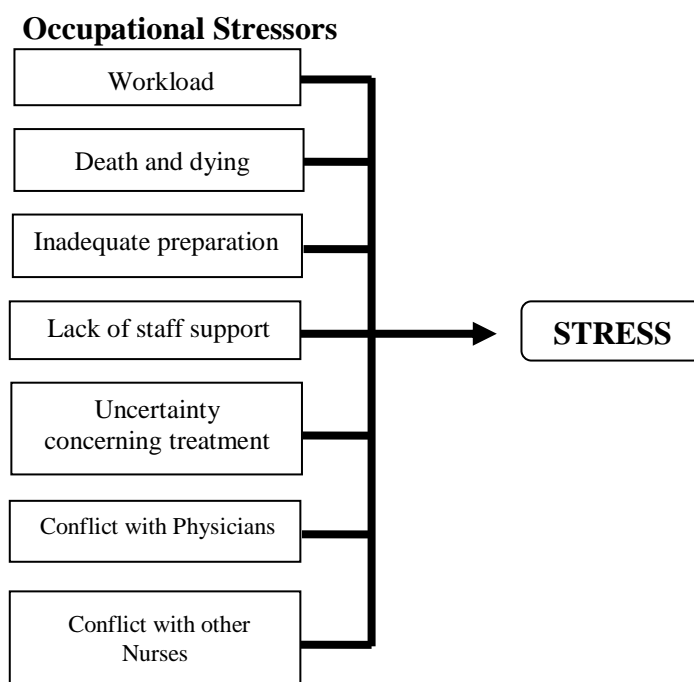


Diagram 1: Theoretical Framework

Hypotheses Development

For this research, alternative hypotheses was developed based on the theoretical framework above and outlined as below:

H1 -There is a relationship between workload and stress among nurses in a cancer hospital

H2 -There is a relationship between death and dying and stress among nurses in a cancer hospital

H3 - There is a relationship between inadequate preparation and stress among nurses in a cancer hospital

H4 -There is a relationship between lack of staff support and stress among nurses in a cancer hospital

H5 - There is a relationship between uncertainty concerning treatment and stress among nurses in a cancer hospital

H6 - There is a relationship between conflict with physician and stress among nurses in a cancer hospital

H7 - There is a relationship between conflict with other nurses and stress among nurses in a cancer hospital

Pilot Test

The questionnaire was pre-tested on 32 nurses from government hospital to determine its reliability. As the results, all items are reliable based on Cronbach's alpha. Table 1 illustrated the reliability test result.

Table 1 Reliability Test

Independent Variables	Number of Items	(r)
Workload	6	0.722
Death and Dying	7	0.813
Inadequate Preparation	3	0.917
Lack of Staff Support	3	0.900
Uncertainty Concerning Treatment	5	0.848
Conflict with Physicians	5	0.872
Conflict with other Nurses	5	0.838
Independent Variables	Number of Items	(r)
Stress	14	0.782

Based on the r value, it could be concluded that the questionnaire items had acceptable internal consistency (Reynaldo, 1999).

Data Analysis

All data acquired were analysed using Statistical Package for Social Sciences (SPSS) software to obtain frequency, value, min and percentage. Furthermore, Pearson correlation was performed to identify the significant relationship between the independent variables and dependent variable including the inter-variable relationship. Multiple regressions analysis was executed to determine the significant influence of independent variables toward the dependent variable.

RESULTS

The demographic information includes age, gender, race, education level and work experience is presented in Table 2.

Table 2 shows that majority of the respondents are female with 92.3% (168) while male

respondents was only 7.7% (14). Nearly 93.4% (170) of respondents' age were ranged between 21 to 30 years old followed by 3.8% (7) ranged between 31 to 40 years old, 2.7% (5) are below 20 years old and none of them are 40 years old and above. One hundred seventy-seven of the respondents are Malay resulting in 97.3% whilst 1.1% (2) are Chinese, 1.1% (2) are Indian and 0.5% (1) from others. For marital status, 53.3% (97) of respondents are single, 46.2% (84) are married and 0.5% (1) represents others. In addition, employees with diploma constituted the highest percentage with 87.4% (159) followed by certificate; 6.0% (11), SPM; 3.3% (6), degree; 2.2% (4), PMR; 0.5% (1), and others; 0.5% (1). For working experience, 67.6% (123) of the respondents have working experience below 2 years working experience, followed by 23.6% (43) own working experience from 3 to 5 years, 6.6% (12) have between 6 to 10 years working experience, 1.6% (3) have working experience from 11 to 15 years and only 0.5% (1) have working experience for more than 15 years.

Table 2 Demographic information (n=182)

Variables		Frequency	Percent
Gender	Male	14	7.7
	Female	168	92.3
Age	≤20	5	2.7
	21 -30	170	93.4
	31 - 40	7	3.8
	≥40	0	0
Race	Malay	177	97.3
	Chinese	2	1.1
	Indian	2	1.1
	Others	1	0.5
Marital Status	Single	97	53.3
	Married	84	46.2
	Others	1	0.5
Highest Academic Qualification	PMR	1	0.5
	SPM	6	3.3
	STPM	0	0
	Certificate	11	6.0
	Diploma	159	87.4
	Degree	4	2.2
Work Experience	<2 years	123	67.6
	3 - 5 years	43	23.6
	6 - 10 years	12	6.6
	11 - 15 years	3	1.6
	>15 years	1	0.5

Table 3 below expresses the Perceived Stress Level, derived by descriptive analysis performed on the collected data.

The mean value of perceived is 5 (SD = 2.13106) with median value is 5 and the mode value is 7. In summary, the mean value was more than 3.68 which shows that the involved nurses had perceived their stress is at high level (Davis,1971).

Table 3 Level of Perceived Stress among nurses in a cancer hospital (n=182)

STRESS	
Mean	5.0000
Median	5.0000
Mode	7.00
Std. Deviation	2.13106
Percentiles	
10	2.0000
20	3.0000
30	4.0000
40	5.0000
50	5.0000
60	6.0000
70	7.0000
80	7.0000
90	7.0000

Table 4 described the results of Pearson Correlation. Based the results obtained, it shows that the highest correlation has been noted between inadequate preparation and workload (r=0.439, p<0.001), whereas the highest correlation found between independent variables and dependent variable are lack of staff support (r=0.304), followed by conflict with other nurses (r=0.300), inadequate preparation (r=0.237), conflict with physicians (r=0.188), death and dying (r=0.170), workload (r=0.156) and uncertainty concerning treatment (r=0.100). On the other hand, the relationship between uncertainty concerning treatment and perceived stress among nurses is found to be absent.

Table 4 Pearson Correlations

	WL	DD	IP	LSS	UCT	CWP	CWN	STRESS
WL	Pearson Correlation 1							
	Sig. (2-tailed)							
	N	182						
DD	Pearson Correlation .411**	1						
	Sig. (2-tailed)	.000						
	N	182	182					
IP	Pearson Correlation .439**	.333**	1					
	Sig. (2-tailed)	.000	.000					
	N	182	182	182				
LSS	Pearson Correlation .314**	.277**	.179*	1				
	Sig. (2-tailed)	.000	.000	.016				
	N	182	182	182	182			
UCT	Pearson Correlation .303**	.229**	.273**	.287**	1			
	Sig. (2-tailed)	.000	.002	.000	.000			
	N	182	182	182	182	182		
CWP	Pearson Correlation .127	.076	.217**	.099	.287**	1		
	Sig. (2-tailed)	.089	.308	.003	.184	.000		
	N	182	182	182	182	182	182	
CWN	Pearson Correlation .066	.217**	.062	.389**	.220**	.408**	1	
	Sig. (2-tailed)	.377	.003	.404	.000	.003	.000	
	N	182	182	182	182	182	182	182
STRESS	Pearson Correlation .156*	.170*	.237**	.304**	.100	.188*	.300**	1
	Sig. (2-tailed)	.035	.022	.001	.000	.180	.011	.000
	N	182	182	182	182	182	182	182

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

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

Note. WL = Workload; DD = Death and Dying; IP = Inadequate Preparation; LSS = Lack of Staff Support; UCT = Uncertainty Concerning Treatment; CWP = Conflict With Physicians; CWN = Conflict With other Nurses

Subsequently, multiple regression analysis was conducted to determine the significance influence of the independent variables towards the dependent variable the dependent variable (Sekaran & Bougie, 2013). Besides, the strength of influence between independent and dependent variables was determined through beta value.

Table 5 Model Summary

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	F
1	.416 ^a	.173	.140	1.97650	5.202

a. Predictors: (Constant), CWN, IP, UCT, DD, LSS, CWP, WL

Note. WL = Workload; DD = Death and Dying; IP = Inadequate Preparation; LSS = Lack of Staff Support; UCT = Uncertainty Concerning Treatment; CWP = Conflict With Physicians; CWN = Conflict With other Nurses

As seen in Table 5, the value of R² is 0.173, which means that occupational stressors in this study explained 17.3% of influence towards stress among nurses. Whilst, 82.7% is explained by other variables.

Table 6 Beta Coefficient

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
1 (Constant)	2.304	.587		3.927	.000
WL	.009	.177	.004	.051	.959
DD	.030	.117	.020	.257	.798
IP	.334	.144	.186	2.316	.022
LSS	.385	.153	.204	2.519	.013
UCT	-.181	.181	-.077	-1.001	.318
CWP	.130	.152	.068	.855	.394
CWN	.297	.129	.194	2.309	.022

a. Dependent Variable: PERCEIVED STRESS

Note. WL = Workload; DD = Death and Dying; IP = Inadequate Preparation; LSS = Lack of Staff Support; UCT = Uncertainty Concerning Treatment; CWP = Conflict With Physicians; CWN = Conflict With other Nurses

The regression analysis shows that all seven dimensions of stressors were significant at $p < 0.05$, $F = 5.202$. However, according to Table 6 above, it was found that only three variables have significant influence towards nurses' stress with the p -value < 0.05 . The predictors namely "lack of staff support", "inadequate preparation" and "conflict with other nurses". The remaining four variables namely "workload", "death and dying", "uncertainty concerning treatment" and "conflict with physicians" do not significantly influence stress since the p -value of each was 0.959, 0.798, 0.318 and 0.394.

In addition, lack of staff support ($\beta=0.204$, $t=2.519$, $p=0.013$; < 0.05) was found to have the greatest influence on stress followed by conflict with other nurses ($\beta=0.194$, $t=2.2309$, $p=0.022$; < 0.05) and inadequate preparation ($\beta=0.186$, $t=2.2316$, $p=0.022$; < 0.05).

CONCLUSION

Hospital nurses are at risk of developing work-related stress due to their routine work on a day-to-day basis. From the findings and analysis, the stress level among nurses for this study is perceived to be at high level. This finding meets previous researchers who also found high stress level among nurses worldwide. All variables studied in this research are found to have significant

relationship with stress among nurses. The findings also concluded that lack of other staff support has the strongest influence on stress among nurses in the cancer hospital, followed by conflict with physicians.

It is recommended that strong and positive relationship between nurses, supervisors and physicians can decrease stress level among nurses. According to Alhajjar (2013), another way of stress reduction suggested by nurses was establishing and maintaining a clear relationship among and between nurses, supervisors, and doctors. This is an important way since effective team-working can reduce the burden of patient care (Graham & Ramirez, 2002). Thus, the management of the hospital shall develop suitable programs to enhance good relationship between nurses and other staff in order to mitigate occupational stress hazards. In addition, the Safety and Health Committee of the hospital should conduct hazard identification, risk assessment and risk control (HIRARC) which includes psychosocial hazards as one of the determined occupational hazards.

Gellis (2002) stated in his research the two methods of occupational stress coping categories namely "problem focused-coping" and "emotion focused-coping". In the study, Gellis found that nurses are more rely on "emotion focused-coping" particularly avoidance strategy which could aggravate more stress. Thus, this research suggests that the nurses in this cancer hospital should apply "problem focused-coping" such as active problem solving and problem review methods. In addition, present study also suggests that the management of the cancer hospital shall, as far as practicable provide and maintain the work setting which may be relevant to coping style and level of stress of the nurses.

FUTURE RESEARCH

This research examined seven independent variables that are perceived to have influence towards stress among nurses and being conducted in a cancer hospital in Malaysia. All these independent variables contribute 17.3% of the stress among nurses in a cancer hospital near Klang Valley, whereas the remaining 82.7% is explained by other variables. It is suggested to conduct research on other variables and

cofounder factors which are also able to contribute to stress among nurses. Furthermore, this research also is suggested to be replicated and expanded to other hospital throughout Malaysia to obtain better generalisation in the results.

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COMPETING INTERESTS

There is no conflict of interest.

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