

FACTORS INFLUENCING PERCEIVED STRESS AMONG NURSES; THE
CASE AT NATIONAL CANCER INSTITUTE

By

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ABSTRACT

The aim of this study was to investigate the factors influencing perceived stress among nurses; the case at National Cancer Institute (NCI). The independent factors studied are: workload, patient's death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment by physician, conflict with physicians and conflict with other nurses. This study examined the level of perceived stress encountered by nurses at the NCI and to identifying the influential among the occupational stressor on nurses at NCI. The Nursing Stress Scale (NSS) by Gray-Toft and Anderson (1981) and the Perceived Stress Scale (PSS) by Cohen *et al.*, (1983) were use as the research instrument. A total of 182 nurses were selected as respondents from a population of 390 nurses. Data were analyzed using descriptive statistics (mean and standard deviation) and inferential statistics (correlation and multiple regressions). Overall, the findings indicate low level of perceived stress experienced by nurses in NCI. The results of the correlation analysis showed that out of seven factors, six have a low and positive relationship with perceived stress while (uncertainty concerning treatment by physician) shows no relationship at all. Based on multiple regression result study, 19.7% of the perceived stress could be explained by the factors studied. The most influential factors are the inadequate preparation and conflict with physicians factor. This study would like to suggest to the NCI management to initiate proactive measures to address the stress issues exist by providing a range of appropriate on-going training courses that would include techniques of handling stress at work in order to produce productive worker with an excellent work culture.

Keywords : *Nurses, National Cancer Institute, Perceived Stress*

ABSTRAK

Tujuan kajian ini adalah untuk mengkaji faktor yang mempengaruhi tekanan dalam kalangan jururawat; di Institut Kanser Negara (IKN). Faktor-faktor bebas yang dikaji ialah: beban kerja, kematian pesakit, persediaan yang tidak mencukupi, kurang sokongan rakan sekerja, ketidakpastian mengenai rawatan oleh doktor, konflik bersama doktor dan konflik bersama jururawat yang lain. Kajian ini turut mengkaji tahap tekanan yang dihadapi oleh jururawat di Institut Kanser Negara selain dari mengenal pasti faktor yang mempengaruhi tekanan dalam kalangan jururawat di IKN. *Nursing Stress Scale* (NSS) oleh Gray-Toft and Anderson (1981) dan *Perceived Stress Scale* (PSS) oleh Cohen *et al.*, (1983) telah digunakan sebagai instrumen kajian. Seramai 182 jururawat telah dipilih sebagai responden daripada populasi 390 jururawat. Data yang diperolehi dianalisis menggunakan statistik deskriptif (min dan sisihan piawai) dan statistik inferensi (korelasi dan pelbagai terurus). Secara keseluruhan, dapatan kajian menunjukkan kadar tekanan yang rendah dalam kalangan jururawat di Institut Kanser Negara. Hasil kajian korelasi menunjukkan bahawa, daripada tujuh faktor, enam daripada mereka mempunyai hubungan yang positif dan rendah terhadap tekanan, manakala satu daripadanya (ketidakpastian mengenai rawatan oleh doktor) menunjukkan tiada hubungan terhadap pembolehubah bersandar. Berdasarkan kajian regresi berganda, 19.7% daripada tekanan yang dialami dijelaskan oleh faktor yang dikaji. Faktor yang paling mempengaruhi ialah persediaan yang tidak mencukupi dan konflik bersama doktor. Penyelidik mencadangkan agar pihak pengurusan mengambil langkah proaktif dalam menangani tekanan yang wujud dengan memberikan pelbagai pendedahan melalui kursus dan latihan yang bersesuaian secara konsisten termasuklah teknik menangani tekanan yang wujud agar kakitangan yang produktif dan budaya kerja cemerlang dapat dilahirkan.

Kata kunci: *Jururawat, Institut Kanser Negara, Tekanan*

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LIST OF ABBREVIATIONS

NCI : National Cancer Institute

NSS : Nursing Stress Scale

PSS : Perceived Stress Scale

RCN : Royal College Nursing

WHO : World Health Organization

OSH : Occupational Safety and Health

CHAPTER 1

INTRODUCTION

1.1 Background of the study

Occupational stress has become a great issue since years ago. This result has become an attention among healthcare organization as most of the workers feel the stress while working in order to get maximum output with good quality. According to (Babatunde, 2013), occupational stress mostly described as developing when there are difference between physiological needs in a workplace or an organization and failure to deal with the demands. Stress can be classified as a unique situation where an individual meet the opportunity, demands or anything that is linked to what people wants and when the results can be both either ambiguous or significant (Robbins S. P. and Judge T. A., 2013). Stress is too universal. It can be good, but at the same time it can be oppositely. Occupational stressors that were faced in a low level produce under pressure and this helps us to motivate ourselves to perform better. But, if we feel the pressure constantly, our mind and body will react differently. It is important to know your stress level in order to control it. Stressors are the things on how we react our environment which can be classified as agent or stimulus that causes stress, the under pressure feelings. According to (Nordqvist, 2014), the more stressors we experience will result in increase of stress feeling.

According to Nad (2009), the nursing profession is known to be stressful throughout the world and has detrimental consequences on the physical and psychological health of an individual which includes emotionally, physically and

psychologically demanding (Olayinka *et al.*, 2013). Nursing includes absolute and collective care of patients from any age or level, any families or group member, any communities or society, either sick or well in any condition including health recovery, avoidance of illness and taking care of ill patients (incapacitated and dying), (Bartz, 2010). According to Oxford Dictionary, nurses refer to a well-trained people who in charge for the ill and disabled patients mainly in a hospital. Nurses today have many roles. The nurse's role has been classified as a stressful event according to the physical work, human suffering, work shifts, staffing, interpersonal relationships, and other circumstances that contribute to the job description (Jennings, 2008). Besides, in order to meet what patients need and as part of the health care community, nurses play an important role as a good mentor or counselor to their patients.

Most occupational and safety researchers agree 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 and/or job characteristics that relate to how tasks are designed where the psychosocial stressors here including the following; 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 are some factor that caused stress among nurses".

National Cancer Institute, Putrajaya.

National Cancer Institute (NCI) is a cancer hospital with centre of excellence of its class with the goal of providing client focused quality care through process

excellence and community participation in an environment conducive to competent and committed staff with a progressive mindset.

NCI building was located in the government administrative area of Putrajaya near the Putrajaya Hospital in Precinct 7 equipped with comprehensive equipment in the treatment and management of cancer. The establishment of the institute can accommodate the growing number of cancer patients increased in Malaysia by offering services and cancer treatment comprehensive and best in the country other than as a reference point and the center of excellence for cancer treatment and research in Malaysia and the region.

According to World Health Organization (2015), cancer has become a leading cause of death worldwide and in year 2012, approximately there are 8.2 million deaths (World Cancer Report, 2014). Therefore, National Cancer Institute (NCI) was a correct place to do the data collection as NCI can be considered as mentally critical zone as most of patients treated are critically ill with cancer disease thus the perceived stress among nurses might be high.

1.2 Problem Statement

The study on perceived stress among nurses in National Cancer Institute is still cannot be seen. Among healthcare organization, nursing has been agreed to be the largest group of caring profession that contribute in taking care of patients. According to Olayinka *et al.*, (2013), stress among nurses is an endemic issues as it affect nurses health problems and lower their performance and productivity. Nurses provides "around-the-clock" services to patients in several place like hospitals, nursing house, long-term care facilities and also to patients that are using supportive

and preventative programs and other relevant community service (Kipping, 2000). Stress has many effects that includes either to individual or an organization. For individuals, stress has influences on certain thing like health status, well-being and work frustration among nurses while for an organization, stress affect in term of attendance (absenteeism) and increase in number of people who is leaving company which may lead to give impact on the quality of patient care (Konstantinos & Christina, 2008).

According to Hajbaghery (2012), research done shows that nurses was classified under high level of occupational stress which can lead to health disease and incapability to perform work. Moreover, nursing profession not only covered patients him / herself but it includes patients surrounding and environment. Nurses not only provide presence in order to comfort and support patients but they also give full attention to patients who meet loneliness, incapability, facing death and dying. Therefore, it is not surprising when nurses were fall as a stressful work as in fact they have been recognized worldwide as a source of occupational stress (Farrington, 1995). The more stressed perceived by nurses, the more they tend to absent (Easterburg *et al.*,1994) and this results in lack of patients care other than increase the rate of job turnover among them (Kipping, 2000).

Besides, an increase of interpersonal conflict was found among nurses in term of workplace where nurses feels insufficiency, they are suffer from ambiguity, results in low confidence, anger, distress, somatic disorder, sleep disorder and all that threaten the care quality provided by them (Hillhouse and Adler, 1997).

In response to this problem, our study proposes to investigate the factors influencing perceived stress among nurses; the case at National Cancer Institute. Up

to April 2015, there are 390 nurses who currently working in National Cancer Institute. Since September 2013 until April 2015, there were 3455 patients was treated here and approximately about 172 patients is coming for a treatment every month. On ratio basis of nurses: patient, it is 2:1 where about 2 nurses were appointed to take care of a patient for the whole day subject to availability. The information above sets the background for the number of aims and stated objectives for this research study to identify.

1.3 Research Questions

- (1) What are the levels of stress perceived by nurses in National Cancer Institute?
- (2) What are the relationships of occupational stressors factor to the stress perceived by nurses in National Cancer Institute?
- (3) What are the influence occupational stressors to the stress perceived by nurses in National Cancer Institute?

1.4 Research Objectives

- (1) To determine level of stress perceived by nurses in National Cancer Institute.
- (2) To identify the relationship between occupational stressors factor to the stress perceived by nurses in National Cancer Institute.

(3) To identify the most influential occupational stressors factor to the stress perceived by nurses in National Cancer Institute.

1.5 Significance of the study

The study aims to identify level of stress experienced by nurses in hospital, the relationship between occupational stressors and perceived stress and the most influential relationship between occupational stressors and perceived stress among nurses. The results of this study will be beneficial to the following:

i. Respondent/Nurses.

Respondents will know the level of stress experienced by them, the most influential occupational stressors and knowledge on how to deal or cope with the occupational stressors.

ii. Healthcare Organization.

The organization will have an awareness to find strategy on stress reduction in order to help managing respondent and its environment. The finding of this study will provide information and recommendations with regard to measures that can be implemented by the hospital to deal with stress experienced by the nurses in the hospital.

iii. Future Researcher.

The findings of this study will be used as a reference material and a guide for future researchers who wish to conduct the same experimental study.

1.6 Scope and Limitations of the Study

This descriptive study will be conducted on 182 nurses in National Cancer Institute. Based on Krecjie and Morgan's (1970) table for determining sample size, for a given population of 390, a sample size of 181 would be needed to represent a cross-section of the population. 185 sets of questionnaires were distributed and 182 sets were collected back.

Two limitations that were found are first, it is hard to gather nurses in order to distribute the questionnaires since the work pattern for each nurses is different according to their work shift and job description. Second, the study only focused on one community which is the government sector that mainly classified in cancer treatment. The results might be different if other community or sectors join together.

1.7 Organization of the Thesis

This thesis consists of five chapters. First is chapter one. This chapter classified as an introductory part with seven divisions; first, background of the study, second, problem statement, followed by research questions, research objectives, significance of the study, scope and limitations of the study, organization of the thesis and summary. This chapter explains on what are occupational stressors, stress and its relationship with nurses in National Cancer Institute. Next is chapter two; literature review which described on the critical review and theories related to perceived stress among nurses in National Cancer Institute followed by chapter three; methodology that cover nine division which are first, introduction, second, research

framework, third, hypotheses/ propositions development, followed by research design, operational definition, measurement of variables or instrumentation, data collection, sampling and summary. Chapter four shows results and discussions. In this chapter, it was divided into introduction of the chapter, rate of responses, respondents' demographic background, reliability analysis, descriptive analysis, correlation analysis and multiple regression analysis which all represents results of the research done followed by discussion and summary of the chapter. Chapter 5 consists of summary of the thesis, which includes conclusions and recommendations that have been drawn from this research. There are four subparts in this chapter; introduction, conclusion, recommendation and summary.

1.8 Summary

As a summary, this chapter has explained the background of the study, problem statement, research questions, research objectives, significance of the study, scope and limitations of the study and organization of the thesis.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter will explained on previous study done by other researcher according to each dependent variable and independent variables derived from this research.

2.1 Stress among nurses

According to Yahaya A. and Husain N. D. H. N. (2007) , basically word of stress was used in social science research long time ago and this strengthen by the famous person of medical expert; Selye which pioneered research for psychological stress since 1950's. Cox & Brockley (1984) stated that stress is a derived from a comparison between the demands and ability of a person to deliver the task complete and successfully. According to Bhatia (2010), a study conducted in India shows, almost 90% from of the respondent (nurses) from the sample experienced occupational stress. In a current study, the majority of participants that (81%) agreed, that nurses feel stress during their job, while remaining (19%) was not agreed that nursing is a stressful job (Khan *et al.*, 2015).

According to Zainiyah *et al.*, (2011), occupational stress exists in all professions, but the nursing profession appears to experience more stress at work compared to other health care workers. This is proven by research done by (Huang,

2007) where lots of studies examined occupational stresses in nurses especially in clinical setting results the stressors are many and varied. Stress among nurses has become a problem and it results in decrease their work capability and efficiency (Olayinka *et al.*, 2013).

Stressful conditions at the workplace may cause the high turnover and burn out among nurses (Zainiyah *et al.*, 2011). According to Better Health Channel (2012), occupational stress has many causes, including long working hours, work overload, feeling insecure about job, risk of work loss, job turnover and conflicts with colleagues or superior. Several factors that contribute to stress among nurses are workload, death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment, conflict with physicians, and conflict with other nurses.

According to World Health Organization (WHO), (2009), cancer is an important cause of morbidity and mortality in this world. Every nurse worldwide in their career will take care of cancer patients (Kendall, 2007). In 1999, Wilkinson stated that nurses' professions become more challenging when dealing with patients' needs and their families through all cancer stages starting from diagnosis, treatment, potential of repetition, survivorship or possibility of death. The nursing profession with patients from cancer background has been described as stressful event, pressure, high challenging and emotionally needs (Corner, 2002), therefore, advanced skills like communication, counseling, specific theoretical and practical knowledge is needed (Finola and Anita, 2010).

National Cancer Institute was chosen because of the hospital itself has been a main referral center for Cancer cases through Malaysia. Therefore, the stress among

nurses might exist here and it will be a suitable place to identify the factors or occupational stressors that may contribute to the stress existed.

There are many bad impacts resulted from the occupational stress. They are; decrease in health condition, sick, lower the quality of patients care, dissatisfy with job performance, bad attendance which increase in absenteeism and job turnover (Schwab, 1996). According to Rita *et al.*, (2013), stress has a relationship with individual functioning in their workplace and other bad effects like less efficiency, incapable to perform, slow progress, no interest in working, increased negative thought, less concern on organization and colleagues, and less responsibility (Rita *et al.*, 2013).

Occupational stress is a good and important topic for all workers or staff as there are some factors interferes with the worker cause problems in his or her physical, psychological, or even in social life (Lou, 1997). A study among UK (United Kingdom) health reported that nurses have become a profession with highest pressure among all health care professions (Rees and Cooper, 1992). Nurses are exposed to a lot of occupational stressors globally which may lead to dissatisfaction in work among them thus increase their stress level. Even though there are diversities in occupational stressors among nurses in different work description, an average level of stress has been reported by all nurses worldwide (Mohite N., Shinde M., and Gulavani A, 2014). As a respondent of sample survey, most nurses stated that occupational stress was explained as a condition caused by work issues and environment among nurses where and the pressure feels by them (Hajbaghery *et al.*, 2012).

2.2 Relationship between workload and perceived stress among nurses

Workload is one of stressor among nurses. According to The Australian Nursing and Midwifery Federation (ANMF) in 2013, inadequate nurse to patient ratios will increase in high workloads caused an increased in job turnover rate where numbers of experienced nurses and midwives tend to leave the nursing profession over the next 12 months. Previous study by (Kane, 2009) show that work overload has become a major cause of stress and emotional pressure. Based on Royal College Nursing (RCN) “the stress is caused by workload burnout and exhaustion. Nurses are working extra shifts without being paid for them or getting their time back. They feel they do not have a family life” (Springs, 2012). Recent study by Ayed *et al.*, (2014) shows that workload was identified as the chief stressor for Australian nurses working in public acute care hospitals. This means workload affect a lot in contribute to perceived stress among nurses. According to Kim Sunley from Royal College Nursing, “the current pressures on the health service have led to increasing workloads and high levels of stress among staff”.

As work demands become more complex, it will increase the workload among workers; therefore the perceived stress level will be high. As stated by Carlson (1999), stress is an individual’s perception results from psycho physiological reaction with the demands of work overload. According to Lam (2003), a lot of studies in western countries shown there are association between work overload, job turnover rate, stress pressure, satisfaction and dissatisfaction level and intention to leave among nurses. Workload has been globally stated as the most influential stressor faced by a lot of nurses in Hong Kong and Singapore (Chun, 2003) while

according to Pan American Health Organisation, (2006), workload as such has been a leading cause of occupational stress amongst nurses.

2.3 Relationship between patient's death and dying and perceived stress among nurses

Patient's death and dying refer to the patient's condition. According to Italia *et al.*, (2007), burnout and stress among nurses is extremely high in those from health fields background where extreme measures are taken to increase patient survival. Based on research done by Ayed *et al.*, (2014), dealing with death and dying is the common type of occupational stressors for Palestinian nurses followed by work overload. Other than that, research done by Saleh *et al.*, (2013) explained that patient's death and dying as "extremely stressful" among nurses.

According to Hajbaghery (2012), the patient's health conditions affect nurses' level of perceived stress. Gronkjaer (2013) stated that, nurses felt a great responsibility for their patients and experienced stress and guilt stress when they had no time to take care of them. Besides, currentnursing.com stated that management of the dying patient often causes an anxiety among nurses. Therefore, Schwartz and Karasu (1997) stated, those who deals with the dying patient must commit to cope with mental pain and fear of death, to listen carefully on patients' needs and complaints and respond properly with it, to be fully prepared in helping patients to accept their own counter transferences, like ambiguity or ponder, guilt and damage to their narcissism are encountered.

Costello (2001) said nurses was found as having more broad contact with patients compared to any other healthcare professionals. Rickerson *et al.*, (2005) stated staff that feels the most grief related symptoms was those with longest experienced in the hospitals at one time and had closer and longer relationships with the patients who died. The symptoms investigated by Wilson *et al.*, (2011) shows physical, emotional, and relationships with family and colleagues effects on job performance. Research done by Wilson *et al.*, (2011) also stated that deaths of patients give impact on specific nurses who have been caring for them for a long time.

2.4 Relationship between inadequate preparation and perceived stress among nurses

Inadequate preparation refers to dealing with emotional needs of patients and family. An examples of this are; dealing with family emotions that were in denial stage of approaching death, dealing with family that are physically and emotionally distressed in taking care of other family member at home, and dealing with family anger which overly exposed, as well as dealing with those having difficulty in separating their professional and personal roles (Peters *et al.*, 2012). Besides, most nurses reported stressful event increase when patients family had coping problems or personality issues and when there are difficulty in communication among them (Vachon, 1998). According to Woodbrow P. (2006), feeling inadequate is a stressor which is likely to increase inefficiency.

2.5 Relationship between lack of staff support and perceived stress among nurses

Staff supports refer to social support received from colleagues which is the combination of social association, emotional and cognitive, and behavioral activity in workplace. Social relationship allows an individual to deal with situations needed (Maslach *et al.*, 2000). According to Abu AlRub R. F. (2004), social support received from colleagues will increase job performance and decrease the stress level. Previous research done by Abu AlRub R. F. (2004) indicted the importance of social support from coworker. Social support was explained as an important tool in dealing with individuals stress and helps in prevent emotional problems (Hamaideh *et al.*, 2008).

According to Hall E. (2005), response from superiors and other colleagues in the organization, and relationship between them either inside or outside the organization are other important contributors. Moore (2001) found that nurses' stress during restructuring was mediated by them viewing restructuring changes as a challenge and by social support and communication by their managers and colleagues. Based on Sveinsdottir (2006), another study shown that low social support from colleagues and superiors and dissatisfaction with the head Nurses causes the appearances of stress among nurses. All the previous study from other researcher shows that lack of staff support influences perceived stress among nurses.

2.6 Relationship between uncertainty concerning treatment by physician and perceived stress among nurses

Uncertainty concerning treatment by physician is related to work experiences and knowledge of the nurses and how they cope with physicians order. Working experience is very important in order to manage work stress. Based on Huckabay L. J. (1979), the relationship between perceived stress and less working experience can be concluded as the higher skill and knowledge owned by a nurses, the lower the stress experienced. Lack of knowledge and empowerment with low involvement in patient care results them job dissatisfaction (Kane, 2009). According to Khan *et al.*, (2015), due to uncertainty concerning treatment by physician, most of nurses were informed to have a constant existence of stress.

2.7 Relationship between conflict with physicians and perceived stress among nurses

Conflict is one of unavoidable factor in our daily life. Most of people in this world did not enjoy having conflict but they seem to enjoy watching other people involved in disagreement and conflict (Marshall, 2006). Relationship between nurses and physicians are sometimes become a burden. Conflict between nurses and physicians, pressure, and stress have been classified as factors contributing to job satisfaction and burnout among nurses (School of Medicine, 2011). According to Kane (2009), less respect and recognition by authorities and doctors has become the major causes of dissatisfaction among nurses broadly. Conflict with the physicians is linked with musculoskeletal disease which is the main reason job turnover among

nurses (Kane, 2009). Mc Vicar (2003) stated conflicts are main sources of job strain among nurses.

Ramsay (2001) stated both nurses and technicians should be treated with respect, and they know that they have right onto it. Conflict between nurses and physician exist as nurses like to express directly their temper to any nearest unfortunate person if it is no longer tolerated. Hillhouse and Adler (1997) showed that, conflict with physicians is one of the main sources of stress among nurses and it is more dangerous rather than any other types of interpersonal conflict.

2.8 Relationship between conflict with other nurses and perceived stress among nurses

The other factor contributes to stress among nurses is conflict between other nurses. According to College of Nurses of Ontario (2009), conflict among co-workers (nurses) can results in indirect influence on the relationship between nurse and patients. Bad relations among nurses colleagues will affect work performance which includes in delivering care treatment to patients other than increase the stress level. Kupperschmidt B. (2006) stated specific research will linked conflict in the workplace with nurse turnover. Negative behaviors like non-supportive, undesirable and non-cooperative colleagues are some of the obstacle to nurses' ability to find happiness in their work (Manion, 2003). According to article posted by American Sentinel University - Healthcare in 2011, workplace stress can give rise to personal conflicts between colleagues.

2.9 Summary

In summary, this chapter explained on previous research done by other researcher which described on the critical review and theories related to stress among nurses in National Cancer Institute

CHAPTER 3

METHODOLOGY

3.0 Introduction

In this chapter, it will explain on research framework that will be used in this research, the hypotheses/ propositions development, its research design, the operational definition, measurement of variables or instruments which include the pilot study, data collection and also sampling procedure. Research methodology also refers to study of practice where input of theory is gained and the main aim is to deliver the research planning (Rajasekar *et al.*, 2013).

3.1 Research framework

This study aimed to identify the factors influencing perceived stress among nurses; the case at National Cancer Institute. A total of 182 nurses were taken out of 390 nurses' from various departments in National Cancer Institute will be recruited in this cross-sectional study.

According to Rajasekar *et al.*, (2013), research methodology is a science of studying on how research study is going to be carried out which basically, the process by where researchers tell about their work on define, clarify and justify the predicting phenomena.

A framework is brief information that explained on theory or part of the theory to be tested in a research (Saunders, 2011). The research framework of this study is divided into two parts: independent variables and dependent variable. The

dependent variable is perceived stress among nurses in National Cancer Institute while its independent variables are workload, patient's death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment by physician, conflict with physicians and conflict with other nurses. Refer to Diagram 3.1.

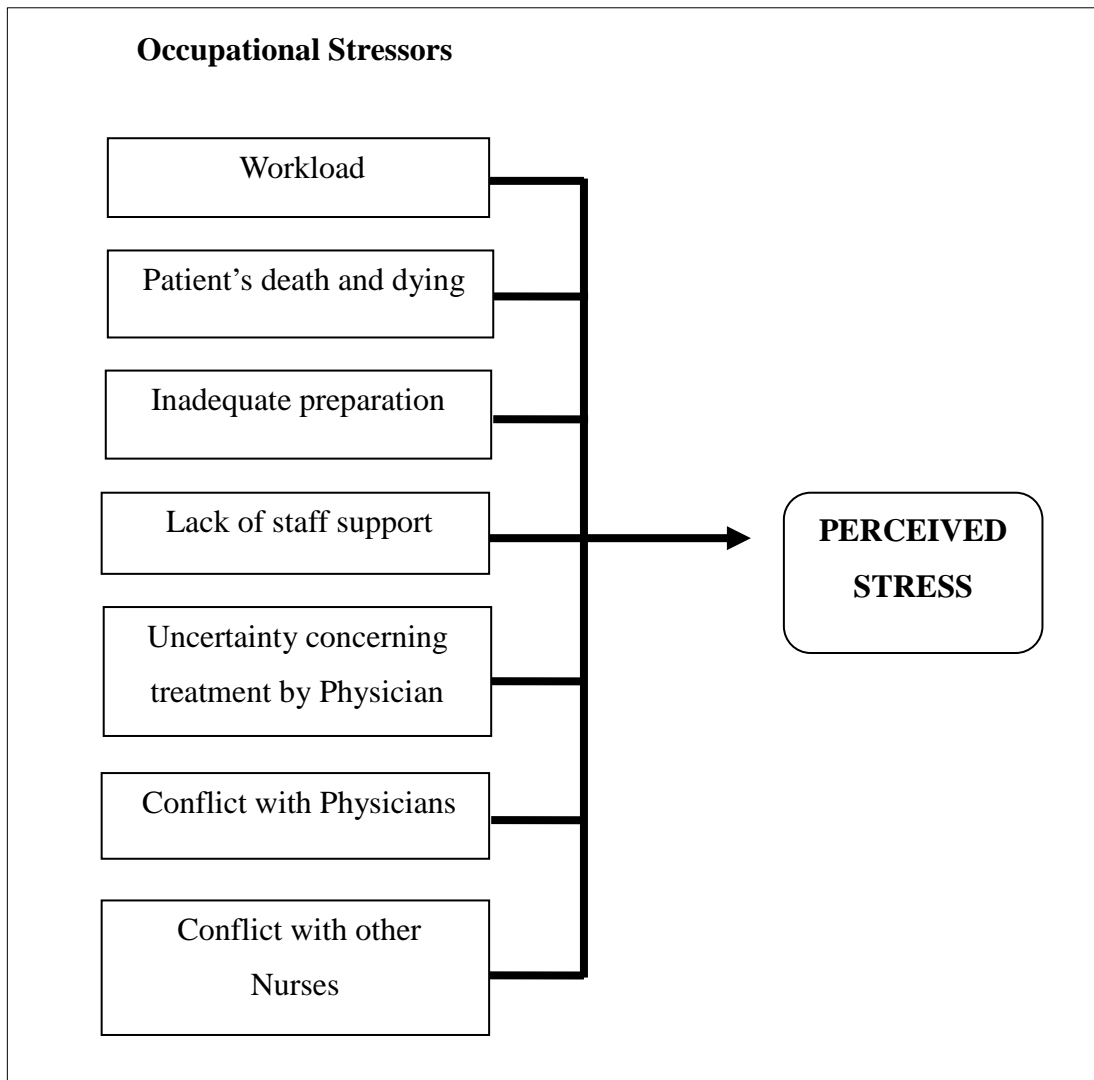


Diagram 3.1

Research Framework

A model proposed for factors influencing perceived stress among nurses; the case at National Cancer Institute.

3.2 Hypotheses/ Propositions Development

H1 – There is a relationship between workload and perceived stress among nurses in National Cancer Institute

H2 – There is a relationship between patient's death and dying and perceived stress among nurses in National Cancer Institute

H3 - There is a relationship between inadequate preparation and perceived stress among nurses in National Cancer Institute

H4 – There is a relationship between lack of staff support and perceived stress among nurses in National Cancer Institute

H5 - There is a relationship between uncertainty concerning treatment by physician and perceived stress among nurses in National Cancer Institute

H6 - There is a relationship between conflict with physician and perceived stress among nurses in National Cancer Institute

H7 - There is a relationship between conflict with other nurses and perceived stress among nurses in National Cancer Institute

H8 – The influence of occupational stressors to perceived stress among nurses in National Cancer Institute

3.3 Research Design

Research method can be divided into Quantitative and Qualitative method. This study can be classified as a descriptive studies that using quantitative approach. According to Aliaga and Gunderson (2000), quantitative research is referring to process of “collecting numerical data that are analyzed using mathematically based methods (in particular statistics)”. This study entitled "factors influencing perceived stress among nurses; the case at National Cancer Institute” is a quantitative research as it tries to quantify and understand the problem in order to identify the factors influencing perceived stress among nurses in National Cancer Institute.

The research would utilize all exploratory research method, descriptive research method and explanatory research method. Began with exploratory research method, stress were observed to be occurred among nurses in National Cancer Institute and more details are needed to know about it. This exploratory research refer to process in gaining information to explain problems that are not yet clearly defined or which the real scope is still confused and unclear including developed the hypotheses. Followed by the descriptive research method, it is the process to obtain information relating to the current status of an issue or topic to describe "what exists" within the variables and its environment. Last, the explanatory research method was used where it is described as an attempt to link the ideas existed in order to know more about its causes and affect that researcher wanted to analyze and to justify what is happening.

Thus the research design of this can be conclude into exploring new issue or idea with exploratory research followed by conducting descriptive research to

increase knowledge or information about the new issue and last we explain the process and everything by explanatory research.

3.4 Operational Definition

Operational definition is an essential component of this research. It provides a concrete description of the variable. Operational definition of variables exists in this study will be explained as below:

i. Stress:

According to Mojinyinola [2008], “stress is derived from the word “*stringi*”, which means “to be drawn tight”. Therefore, Olayinka *et al.*, (2013) stated that stress can be described as a physical or psychological *stimulus* that may result in mental tension or physiological reactions which may lead to health problem.

ii. Occupational Stress :

According to Babatunde (2013), occupational stress is a difficult scientific construct that needs an initial knowledge or understanding of the “parent construct” known as stress where the stress itself is frequently perceived in terms of general physiological and psychological reaction that results in mental provocation.

iii. Stressor :

Scott (2014) stated stressors refer to situations experienced as a perceived threat or hazard to one’s health when the challenge of dealing with it exceeds the person’s perceived available resources. When one feels the stressors, body’s stress response is

triggered, and a series of physiological changes will take place which give permission the person to fight or run. In this study stressor refer to the causal /or any event that caused the existence of stress. In details, it can be classified as the stimulus that caused a respond in stress.

iv. Occupational stressor :

In this study, occupational stressors refer to stressors cause stress among nurses in National Cancer Institute or in other it is refer to factors influencing stress among nurses.

v. Workload :

Workload refers to the amount of work to be done by someone or something. According to Leplat (1997), workload derived from a combination of job specification needed to accomplish and the results perform by impact on the organization. While Poete and Rousseau (2003) suggested there are three-dimensional perspective needs to be consider in term of workload; first, the specific workload exist from job requirement, second, the real workload exist from the staff's activity and third, the subjective concern, the operators' sense of responsibility.

vi. Patient's death and dying :

Death means the end of the life of a person while dying means approaching death or about to die. In this research, patient's death and dying classified as patient's condition that is dead or approaches death.

vii. Inadequate preparation :

Preparations refer to getting ready for something. Here, inadequate preparation means a nurse who does not have enough skills / fully preparation on how to react or deal with sentimental value like emotional needs by patients and their family.

viii. Lack of staff support :

Supports refer to giving assistance in something. In this research, lacks of staff support refer to less assistance/ support receive by nurses from their surrounding which especially refer to workplace.

ix. Uncertainty concerning treatment by Physician :

Treatments refer to medical care given to a patient for an illness or injury. Uncertainty treatment here means a nurse does not know the correct or exact medical care should be given to a patients or does not confidence whether the treatment given is correct or not. In other word, it refers to lack of professional knowledge and skills that is related to physicians order.

x. Conflict with Physicians :

Conflict means a serious disagreement or argument. In this research, conflict with physician means fight or disagreement between nurse and a physician.

xi. Conflict with other nurses :

In this research, conflict with other nurses refers to conflict or fight or disagreement between colleagues or in specific between nurses.

xii. Physician :

Physicians mostly know as a doctor or often called as medical specialists. According to The Royal Australasian College of Physicians, “physicians are the doctors who have completed an extra eight years or more of training after their initial university medical training”. They are those specialize in internal medicine who determine and handle all the complex medical problems.

xiii. Nurse :

According to Oxford Dictionary, Nurse is a someone trained to provide medical care for the sick or unhealthy patients especially in a hospital. Pauzan (2000) stated that “nurse is classified as paramedic and auxiliary group in the health care and practice of nursing in Malaysia”. In this study, nurse specifically referring to those holding the post of nurse in National Cancer Institute which is one of the Government Hospital in Malaysia.

3.5 Measurement of Variables/ Instrumentation

In this quantitative study, questionnaires were used as the main instrument for data-gathering. The questionnaire has three main sections; socio-demographic data, Nursing Stress Scale and Perceived Stress Scale (PSS). Section one; the socio-demographic data contains characteristics of the respondents such as gender, age, race, marital status, highest academic qualification and work experience.

Section two; Nursing Stress Scale (NSS) was adapted from Gray-Toft and Anderson (1981). The Nursing Stress Scale (NSS) developed by Gray-Toft and

Anderson (1981) has been used widely in research studies of job-related stress in nursing Yao M. (2008). According to Suresh P. (2009), Nursing Stress Scale refers to a 34-item scale that was used to identify perceptions of the stress sources and perceived stressful situations in the nursing environment. Rolf M. J. (1999) stated, Nursing Stress Scale (NSS) was used to know frequency and specific cause of stress experienced by nurses on hospital units and it is for this reason the NSS was chosen over other work stress instruments. Based on Cohen *et al.* (1983), the 'Nursing Stress Scale' was used as it was designed specially to clinical nursing environment as can be referring to the questionnaires, which globally measure stress. There were 7 factors influencing stress that were measured by this Nursing Stress Scale. They are 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 is scored according to the frequency with which these situations are assessed as stressful, from (0) never, (1) sometimes, (2) frequently, and (3) very frequently. According to Yao M. H. (2008), the higher score indicates greater work-related stress experienced by the participants in this study. In this section, respondents are required to tick their response according to the ordinal scale without skip.

Section three, Perceived Stress Scale (PSS) was adapted from Cohen *et al.* (1983). According to Cohen (1994), Perceived Stress Scale (PSS) is the most extensively used psychological instrument in order to measure an individual's perception of stress. This section consist of 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. Walton R. L.

(2002) stated each item was designed to find out how stressful, unexpected, unmanageable or overloaded the respondent has found his or her life are within the last month, prior to completion of the instrument.

The data then was coded and entered into SPSS version 22.0 (Statistical Package for Social Sciences) for descriptive analysis. Data was analyzed by using frequency and percentage and findings will indicates the contribution of different factors experienced by 100 per cent (n = 182) of nurses or not. Table 3.0 shows items used in socio-demographic information part, table 3.1, shows items used for measuring the independent variables whilst table 3.2, shows items used for measuring the dependent variable.

Table 3.1
Items of the Socio-demographic Information

Socio-demographic Information	Items
Personal Information	<ol style="list-style-type: none"> 1. Gender 2. Age 3. Race 4. Marital status 5. Highest academic qualification 6. Work experience

Table 3.2
Items of the Independent Variables

Independent Variables	Items	Source
Workload	<ol style="list-style-type: none"> 1. <i>Breakdown of the computer</i> 2. <i>Unpredictable staffing and scheduling</i> 3. <i>Too many non-nursing task, such as clerical work</i> 4. <i>Not enough time to provide emotional support to a patient</i> 5. <i>Not enough staff to complete all of my nursing task</i> 6. <i>Not enough staff to adequately cover the unit</i> 	Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)
Death and dying	<ol style="list-style-type: none"> 7. <i>Performing procedures that patients experience as painful</i> 8. <i>Feeling helpless in the case of a patient who fails to improve</i> 9. <i>Listening or talking to a patient about his/ her approaching death</i> 10. <i>The death of a patient</i> 11. <i>The death of a patient whom you developed a close relationship</i> 12. <i>Physician not being present when a patient dies</i> 13. <i>Watching a patient suffer</i> 	Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)
Inadequate preparation	<ol style="list-style-type: none"> 14. <i>Feeling inadequately prepared to help with the emotional needs of a patient's family</i> 15. <i>Being ask a question by a patient for which I do not have a satisfactory answer</i> 16. <i>Feeling inadequately prepared to help with the emotional needs of a patient</i> 	Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)

<p>Lack of staff support</p>	<p>17. <i>Lack of an opportunity to talk openly with other unit personnel about problems on the unit</i></p> <p>18. <i>Lack of an opportunity to share experiences and feelings with other personnel on the unit</i></p> <p>19. <i>Lack of an opportunity to express to other personnel on the unit my negative feelings toward patients</i></p>	<p>Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)</p>
<p>Uncertainty concerning treatment</p>	<p>20. <i>Inadequate information from a physician regarding the medical condition of a patient</i></p> <p>21. <i>A physician ordering what appears to be inappropriate treatment for a patient</i></p> <p>22. <i>A physician not being present in a medical emergency</i></p> <p>23. <i>Not knowing what a patient or a patient's family ought to be told about the patient's medical condition and its treatment</i></p> <p>24. <i>Uncertainty regarding the operation and functioning of specialized equipment</i></p>	<p>Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)</p>
<p>Conflict with physicians</p>	<p>25. <i>Criticism by a physician</i></p> <p>26. <i>Conflict with a physician</i></p> <p>27. <i>Fear of making a mistake in treating a patient</i></p> <p>28. <i>Disagreement concerning the treatment of a patient</i></p> <p>29. <i>Making a decision concerning a patient when the physician is unavailable</i></p>	<p>Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)</p>

Conflict with other nurses	<p>30. <i>Conflict with a supervisor</i></p> <p>31. <i>Floating to other units that are short-staffed</i></p> <p>32. <i>Difficulty in working with a particular nurse</i></p> <p>33. <i>Criticism by a supervisor</i></p> <p>34. <i>Difficulty in working with a particular nurse (or nurses) on the unit</i></p>	Nursing Stress Scale (NSS) : Gray-Toft and Anderson (1981)
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Table 3.3
Items of the Dependent Variables

Dependent Variables	Items	Source
Stress	<p>1. <i>In the last month, how often have you been upset because of something that happened unexpectedly?</i></p> <p>2. <i>In the last month, how often have you felt that you were unable to control the important things in your life?</i></p> <p>3. <i>In the last month, how often have you felt nervous and “stressed”?</i></p> <p>4. <i>In the last month, how often you dealt successfully with irritating life hassles?</i></p> <p>5. <i>In the last month, how often you felt that you were effectively coping with important changes that were occurring in your life?</i></p> <p>6. <i>In the last month, how often have you felt confident about your ability to handle your personal problems?</i></p> <p>7. <i>In the last month, how often have you felt that things were going your way?</i></p> <p>8. <i>In the last month, how often have you found that you could not cope with all the things that you had to do?</i></p> <p>9. <i>In the last month, how often have you been able to control irritations in your life?</i></p>	Perceived Stress Scale (PSS) : Cohen et al. (1983)

	<p><i>10. In the last month, how often have you felt that you were on top of things?</i></p> <p><i>11. In the last month, how often have you been angered because of things that were outside of your control?</i></p> <p><i>12. In the last month, how often have you found yourself thinking about things that you have to accomplish?</i></p> <p><i>13. In the last month, how often have you been able to control the way you spend your time?</i></p> <p><i>14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?</i></p>	
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3.5.1 Pilot Study

Pilot test is a trial run to in order to test the reliability of the instrument used in this research project. According to Leon *et al.*, (2010), the pilot study is used to examine the feasibility of an approach that is proposed to be used in a big scale study. Edwin and Hundley (2001) in their statement said “‘pilot studies' refers to mini versions of a full-scale study (also called 'feasibility' studies), as well as the specific pre-testing of a particular research instrument such as a questionnaire or interview schedule”.

The adapted and adopted questionnaires used for this research was in English Language. Since all samples were Malaysian with various educational backgrounds, it is advised to do bilingual questionnaire form to facilitate the respondents who are not well-verse in English Language. The item in the questionnaire was translated by Malay Language Teacher graduated from Universiti Pendidikan Sultan Idris (UPSI).

The questionnaire was pre-tested on 32 nurses from Hospital Putrajaya on 21st April 2015. Mooney and Duval (1993) stated that approximations of parameter measurement and confidence intervals are classified as relatively high quality “when n reaches the range of 30-50, and when the sampling procedure is truly random”. That means, reasonable minimum sample size for confidence intervals recognized as n = 30 (Johanson and Brooks, 2009).

According to Institute for Digital Research and Education, Cronbach's alpha is used in order to measure internal consistency in form of scale reliability which is how closely related a set of items as a group. Table 3.4 shows the reliability coefficients of questionnaire items of independent variables whilst table 3.5 shows the reliability coefficients of questionnaire items of dependent variables as below.

Table 3.4
Reliability Coefficients of Questionnaire Items of Independent Variables

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

Table 3.5
Reliability Coefficients of Questionnaire Items of Dependent Variables

Dependent Variables	Number of Items	(r)
Perceived Stress	14	0.782

Variables from test instruments are declared to be reliable only when stable and reliable responses provided over a repeated administration of the test (Reynaldo, 1999). According to Reynaldo (1999), “alpha coefficient ranges in value from 0 to 1 and may be used to describe the reliability of factors extracted from dichotomous (that is, questions with two possible answers) and/or multi-point formatted questionnaires or scales (i.e., rating scale: 1 = poor, 5 = excellent)”. That means, high score will results in highly reliable generated scale. Table 3.6 shows Cronbach’s alpha and its internal consistency.

Table 3.6
Cronbach’s alpha and its internal consistency

Cronbach's alpha	Internal consistency
$\alpha \geq 0.9$	Excellent
$0.9 > \alpha \geq 0.8$	Good
$0.8 > \alpha \geq 0.7$	Acceptable
$0.7 > \alpha \geq 0.6$	Questionable
$0.6 > \alpha \geq 0.5$	Poor
$0.5 > \alpha$	Unacceptable

Based on the table above we can conclude that for independent variable; factor 1; workload with value 0.722 is acceptable, factor 2; patient’s death and dying with value 0.813 is good, factor 3; inadequate preparation with value 0.917 is excellent, factor 4; lack of staff support with value 0.900 is excellent, factor 5; uncertainty concerning treatment by physician with value 0.848 is good, factor 6; conflict with physician with value 0.872 is good and lastly factor 7; conflict with other nurses with value 0.838 is good. For dependent variable which is perceived stress, it has 0.782 values and is acceptable. This shows that both instrument used in

both section 2 and three for both independent and dependent variable is highly reliable.

3.6 Data Collection

The data collection method that was used for this quantitative study is questionnaires. To conduct the study, there are several steps to be followed. First, it is important to gain approval from the management before distribute the questionnaire. Once approval received, one date has been selected to run the data collection. Third, it is the time to choose the targeted sample of the population. Out of 390 nurses working in National Cancer Institute, 185 nurses were randomly selected. The bilingual questionnaires then were sent via hand being randomly distributed to them. Sample chosen has been instructed briefly on the questionnaires. The number of questionnaires distributed has been recorded which are 185 set and at the end of the day, 182 sets of questionnaires were collected back (98.4%).

3.7 Sampling

Sampling is the process by which inference is made to the whole by examining a part. In this research, simple random of sampling will be use which specified to stratified random sample method. In this method, each item of the data (population) has the same probability of being selected in the sample. Therefore, Krecjie and Morgan table will be used to identify the targeted sample. There are 390 totals of nurses who worked in National Cancer Institute from various departments.

Based on Krecjie and Morgan's (1970) table for determining sample size, for a given population of 390, a sample size of 181 would be needed to represent a cross-section of the population. One hundred eighty five sets of questionnaires was distributed and 182 sets were collected back (98.4%). Thus, respondents here are still in the correct range of sample size.

3.8 Summary

As a summary, this chapter has described the research framework, hypotheses/ propositions development, research design, operational definition, measurement of variables/ instrumentation and data collection procedure.

CHAPTER 4

RESULTS AND DISCUSSION

4.0 Introduction

This chapter will discuss the research findings from the survey performed to find the level of stress perceived by respondents, to evaluate factors influencing perceived stress among nurses in National Cancer Institute and the most influential factor. Data is processed using SPSS version 22.0. Frequency analysis has been computed to identify respondents' demographic information such as gender, age, marital status, race, marital status, highest academic qualification and work experience. This chapter also reports reliability analysis (goodness of measure), descriptive analysis, correlation coefficient analysis, multiple regression analysis and beta analysis. Multiple regression analysis is used to verify hypotheses listed in previous chapter.

4.1 Rate of Response

A total of 185 questionnaires issued to the respondents which are nurses who works in National Cancer Institute, Putrajaya. Only 182 of them were returned and 3 were not returned. The returned 182 of questionnaires was answered completely by the respondents.

Table 4.1
Rate of Response

Items	Total	Percentage (%)
Distributed Questionnaires	185	100
Collected Questionnaires	182	98.4
Unreturned Questionnaires	3	1.6
Completed Questionnaires	182	98.4

Table 4.1 above summarised the response rate of the survey. Out of 185 distributed questionnaires, only 182 of them were returned and answered completely resulting in 98.4% response rate while another 1.6% (3) was not returned.

4.2 Respondents' Demographic Background

Section one from the questionnaire form indicates demographic information of the respondent. Table 4.2 below summarised percentage of variables in demographic information; gender, age, race, marital status, highest academic qualification and work experience. Majority of the respondents are female with ranged between 21 to 30 years with most of them are Malay. For marital status, majority of the respondents were single, and for the highest academic qualification, most of them comes with diploma academic qualification and are fresh employee with less than 2 working experience. Results will be explained more in table 4.2, demographic background of the respondents.

Table 4.2
Demographic Background of the Respondents

Variables	Classification	Frequency	Percent (%)
Gender	Male	14	7.7
	Female	168	92.3
Age	Below 20 years	5	2.7
	Between 21 to 30 years	170	93.4
	Between 31 to 40 years	7	3.8
	40 years and above	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
	Others	1	0.5
Work Experience	Below 2 years	123	67.6
	Between 3 to 5 years	43	23.6
	Between 6 to 10 years	12	6.6
	Between 11 to 15 years	3	1.6
	Above 15 years	1	0.5

Table 4.2 shows majority of the respondents are female with 92.3% (168) while male respondents only 7.7% (14). Approximately 93.4% (170) of respondents' age were ranged between 21 to 30 years followed by 3.8% (7) ranged between 31 to

40 years, 2.7% (5) are below 20 years and none of them are 40 years 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 were single, 46.2% (84) were married and 0.5% (1) represents others. For highest academic qualification, employees with diploma constitute 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). Lastly, 67.6% (123) shows most of the respondents have working experience below 2 years, followed by 23.6% (43) ranged between 3 to 5 years, 6.6% (12) between 6 to 10 years, 1.6% (3) from 11 to 15 years and only 0.5% (1) have working experience more than 15 years.

4.3 Reliability Analysis

Reliability analysis is important in order to determine whether the questionnaire were reliable and admissible. The degree of internal consistency between multivariate could be determined based on Cronbach's Alpha (Hair *et al.*, 2010). Table 4.3 shows the result of reliability measure with comparison of original, pilot and current studies for independent variables while table 4.4 shows the result of reliability measure with comparison of original, pilot and current studies for both dependent variables.

Table 4.3
Reliability measure: Comparison of Original, Pilot and Current Studies for Independent Variables

Scale	N of Items	Coefficient Alpha		
		Original Study	Pilot Study	Current Study
Total NSS	34	0.89	0.939	0.889
Subscale				
Workload	6	0.74	0.722	0.769
Patient's death and dying	7	0.83	0.813	0.743
Inadequate Preparation	3	0.42	0.917	0.744
Lack of staff support	3	0.65	0.900	0.722
Uncertainty concerning treatment by Physician	5	0.68	0.848	0.614
Conflict with Physician	5	0.72	0.872	0.670
Conflict with other nurses	5	0.86	0.838	0.784

From the Table 4.3 above, current study shows a good value of Cronbach's alpha for total scale in Nursing Stress Scale (NSS) which is 0.889 make all the items used in this study are reliable and this is supported by Gliem J. and Gliem R. (2003) where the Cronbach's alpha coefficient that closer to 1.0 has the greater internal consistency of the items in the scale. For subscale, most of the independent variables having Cronbach's alpha coefficient of higher than 0.7 except for uncertainty concerning treatment by physician and conflict with physician where the value is 0.614 and 0.670. Among all the items, conflict with other nurses has the most highly value (0.784), followed by workload (0.769), inadequate preparation (0.744), patient's death and dying (0.743), lack of staff support (0.722), conflict with physician (0.670) and uncertainty concerning treatment by physician (0.614).

In a comparison, original study shows among subscale; conflict with other nurses has the highest value like current study; 0.86, followed by patient's death and dying (0.83), workload (0.74), conflict with physician (0.72), uncertainty concerning treatment by physician (0.68), lack of staff support (0.65) and inadequate preparation (0.42). Whereas, pilot study shows the highest value in inadequate preparation (0.917), followed by lack of staff support (0.900), conflict with physician (0.872), uncertainty concerning treatment by physician (0.848), conflict with other nurses (0.838), patient's death and dying (0.813) and workload (0.722). Cronbach's alpha value for total NSS of original study is 0.89 whilst pilot study 0.939. According to Ralf (1999), the coefficient alpha for internal consistency of NSS was 0.89 and this indicates a satisfactory level of consistency among items (Gray-Toft & Anderson, 1981).

Table 4.4
Reliability measure: Comparison of Original, Pilot and Current Studies for Dependent Variable

Scale	N of Items	Coefficient Alpha		
		Original Study	Pilot Study	Current Study
Total PSS	14	0.84-0.86 (3 sample)	0.782	0.824

Based on Table 4.4 above, for dependent variable, stress item that was asked in section three of the questionnaire is reliable with Cronbach's alpha value of 0.824. Original study shows a range value from 0.84 to 0.86 that represent three samples while pilot study has Cronbach's alpha value of 0.782.

In summary, Nursing Stress Scale (NSS) that was used in section two shows a reliable value of Cronbach's alpha; 0.889 in current study and it is near to value in

original study from Gray-Toft and Anderson (1981); 0.89 while Perceived Stress Scale (PSS) that was used in section three shows 0.824 value which also near to original study; 0.84 to 0.86 for three samples. Pilot study for both independent and dependent variables has Cronbach's alpha value; 0.939 and 0.782. Therefore, it can be concluded that both independent and dependent variables item used are highly reliable.

4.4 Descriptive Analysis of Variables

Descriptive statistics is important to summarize a collection of data. This allows the measurement of central tendency (mean) and dispersion (standard deviation). According to sociologyguide.com, mean refer to the means of absolute deviation of values from some average while standard deviation referred as sigma that is important and widely used to measure of dispersion. It also defined as the root mean square deviation of values from their mean.

In this study, the items used for the dependent variable and the independent variables are measured by likert scale. Independent variable has four-point likert scale that is vary from scale 0 to 3 (0 : “never”, 1: “occasionally”, 2: “frequently”, 3: “very frequently”) while for dependent variable, the instrument has five-point likert scale that is vary from scale 0 to 4 (0 : “never”, 1: “almost never”, 2: “sometimes”, 3: “fairly often”, and 4: “very often”).

Table 4.5
Importance of occupational stressors

Independent Variables	Mean	Std. Deviation
Workload	2.9560	1.01276
Patient's death and dying	2.8022	1.45062
Inadequate preparation	2.2912	1.18360
Lack of staff support	3.1099	1.12678
Uncertainty concerning treatment by Physician	2.1868	0.90928
Conflict with Physicians	1.6209	1.11949
Conflict with other Nurses	2.7253	1.39110

Table 4.5 shows the importance of occupational stressors. The main source of stress was examined through the mean value for each dimension. According to Hair *et al.* (2003), the nearer the mean value to 4, the most dominant the variable is. It was found that lack of staff support is the main source of stress (mean value of 3.1099) followed by workload (2.9560), patient's death and dying (2.8022), conflict with other nurses (2.7253), inadequate preparation (2.2912), uncertainty concerning treatment by physician (2.1868) and conflict with physicians (1.6209).

Table 4.6
Level of stress

STRESS	Mean	Median	Mode	Std. Deviation
	5.0000	5.0000	7.00	2.13106

Table 4.6 shows level of stress. The mean value for dependent variable; perceived stress is 5.0000 (SD = 2.13106) with median value 5.0000 and mode value 7.00. In summary, the mean value is more than 3.68 shows that nurses in National Cancer Institute perceived stress level is higher. According to Davis (1971), the level

of the variable is considered high when the mean score is 3.68 – 5.00, whereas the score for moderate level is 2.34 – 3.67 and low level is 1.00 – 2.33.

4.5 Correlation Analysis

Tests of correlation or association were carried out in order to identify the association or strength of relationship between independent variables and dependent variable of this study and strength between individual factors in independent variables and make inferences about it. The Pearson’s Product moment correlation(r) was used to analyze this type of data.

Table 4.7
Correlation Analysis

		STRESS	WL	DD	IP	LSS	UCT	CWP	CWN
Perceived Stress (STRESS)	Pearson Correlation	1							
	Sig. (2-tailed)								
	N	182							
Workload (WL)	Pearson Correlation	.241**	1						
	Sig. (2-tailed)	.001							
	N	182	182						
Patient’s death and dying (DD)	Pearson Correlation	.235**	.586**	1					
	Sig. (2-tailed)	.001	.000						
	N	182	182	182					

Inadequate preparation (IP)	Pearson Correlation	.336**	.435**	.520**	1				
	Sig. (2-tailed)	.000	.000	.000					
	N	182	182	182	182				
Lack of staff support (LSS)	Pearson Correlation	.249**	.421**	.380**	.262**	1			
	Sig. (2-tailed)	.001	.000	.000	.000				
	N	182	182	182	182	182			
Uncertainty concerning treatment by physician (UCT)	Pearson Correlation	.140	.383**	.388**	.365**	.261**	1		
	Sig. (2-tailed)	.059	.000	.000	.000	.000			
	N	182	182	182	182	182	182		
Conflict with physicians (CWP)	Pearson Correlation	.342**	.273**	.337**	.411**	.207**	.397**	1	
	Sig. (2-tailed)	.000	.000	.000	.000	.005	.000		
	N	182	182	182	182	182	182	182	
Conflict with other nurses (CWN)	Pearson Correlation	.233**	.252**	.343**	.127	.271**	.190*	.425**	1
	Sig. (2-tailed)	.002	.001	.000	.087	.000	.010	.000	
	N	182	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).

Table 4.7 shows the result of correlation analysis for both independent variables (workload, patient's death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment by physician, conflict with physicians, and

conflict with other nurses) and the dependent variable (perceived stress). As can be seen on the table above, only the bottom part is filled out in order to avoid duplication (Hazard Munro, 2001).

The results shows the highest correlation noted between patient's death and dying with workload ($r=0.586$, $p<0.000$), whereas the highest correlation found between independent variables and dependent variable are conflict with physicians ($r=0.342$), followed by inadequate preparation ($r=0.336$), lack of staff support ($r=0.249$), workload ($r=0.241$), patient's death and dying ($r=0.235$), conflict with other nurses ($r=0.233$) and uncertainty concerning treatment by physician ($r=0.140$).

Hypothesis 1 : There is a relationship between workload and perceived stress among nurses in National Cancer Institute.

Table 4.8
Correlation between workload and perceived stress

		Perceived Stress
Workload	Pearson Correlation	.241 **
	Sig. (2-tailed)	.001

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

The result of the analysis shows that there is a significant relationship between workload and perceived stress. The correlation value of this variable; $r=0.241$ means that a positive and low relationship exist between the two. Thus, H_1 is accepted.

Hypothesis 2 : There is a relationship between patient's death and dying and perceived stress among nurses in National Cancer Institute.

Table 4.9
Correlation between patient's death and dying and perceived stress

		Perceived Stress
Patient's Death and Dying	Pearson Correlation	.235**
	Sig. (2-tailed)	.001

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

The result of the analysis shows that there is a significant relationship between patient's death and dying and perceived stress. The correlation value of this variable; $r=0.235$ means that a positive and low relationship exist between the two. Thus, H_2 is accepted.

Hypothesis 3 : There is a relationship between inadequate preparation and perceived stress among nurses in National Cancer Institute.

Table 4.10
Correlation between inadequate preparation and perceived stress

		Perceived Stress
Inadequate Preparation	Pearson Correlation	.336**
	Sig. (2-tailed)	.000

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

The result of the analysis shows that there is a significant relationship between inadequate preparation and perceived stress. The correlation value of this

variable; $r=0.336$ means that a positive and low relationship exist between the two.

Thus, H_3 is accepted.

Hypothesis 4 : There is a relationship between lack of staff support and perceived stress among nurses in National Cancer Institute.

Table 4.11
Correlation between lack of staff support and perceived stress

		Perceived Stress
Lack of Staff Support	Pearson Correlation	.249**
	Sig. (2-tailed)	.001

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

The result of the analysis shows that there is a significant relationship between lack of staff support and perceived stress. The correlation value of this variable; $r=0.249$ means that a positive and low relationship exist between the two. Thus, H_4 is accepted.

Hypothesis 5 : There is a relationship between uncertainty concerning treatment by physician and perceived stress among nurses in National Cancer Institute.

Table 4.12
Correlation between uncertainty concerning treatment by physician and stress

		Perceived Stress
Uncertainty Concerning Treatment by Physician	Pearson Correlation	.140
	Sig. (2-tailed)	.059

The result of the analysis shows that uncertainty concerning treatment by physician is not significantly correlated with stress as the p-value of $0.059 > 0.05$. Thus, H_5 fails to be accepted.

Hypothesis 6 : There is a relationship between conflict with physician and perceived stress among nurses in National Cancer Institute.

Table 4.13
Correlation between conflict with physicians and perceived stress

		Perceived Stress
Conflict with Physicians	Pearson Correlation	.342**
	Sig. (2-tailed)	.000

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

The result of the analysis shows that there is a significant relationship between conflict with physicians and perceived stress. The correlation value of this variable; $r=0.342$ means that a positive and low relationship exist between the two. Thus, H_6 is accepted.

Hypothesis 7 : There is a relationship between conflict with other nurses and perceived stress among nurses in National Cancer Institute.

Table 4.14
Correlation between conflict with other nurses and perceived stress

		Perceived Stress
Conflict with other Nurses	Pearson Correlation	.233**
	Sig. (2-tailed)	.002

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

The result of the analysis shows that there is a significant relationship between conflict with other nurses and perceived stress. The correlation value of this variable; $r=0.233$ means that a positive and low relationship exist between the two. Thus, H_7 is accepted.

In summary, out of seven hypotheses, only one is rejected. Hypothesis 1, 2, 3, 4, 6 and 7 is accepted as there is significant relationship exist with $p\text{-value} < 0.05$ whilst hypothesis 5; uncertainty concerning treatment by physician is not significantly correlated with stress as the $p\text{-value}$ of $0.059 > 0.05$, thus, H_5 fails to be accepted and were rejected as the result is not significantly correlated with $p\text{-value} > 0.05$.

4.6 Multiple Regression Analysis

Regression is the appropriate technique for testing relationship between predictor and criterion variable. Regression analysis was used as it allows the researcher to analyze how independent variables prediction on the value of the dependent variable. According to Bougie and Sekaran (2013), multiple regression analysis is used to identify the significance of the predictors with the dependent variable.

4.6.1 Independent Variables and Stress

Correlation and multiple regression analyses were conducted to examine the relationship between nurses in National Cancer Institute and various potential predictors. Table 4.15 below shows model summary consisting R squared value.

Table 4.15
Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	F
1	.444 ^a	.197	.165	.63608	6.105

a. Predictors: (Constant), Workload, Patient's death and dying, Inadequate preparation, Lack of staff support, Uncertainty concerning treatment by Physician, Conflict with Physicians and Conflict with other nurses

As can be seen from Table 4.15, the value of R^2 is 0.197, which means that 19.7% of factor influencing stress among nurses has been 'explained' by occupational stressors in this study while another 80.3% is explained by other variables. The R value; 0.444 is the square root of R^2 .

Table 4.16
Beta Coefficients

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.616	.158		10.237	.000
	Workload	.054	.079	.061	.681	.496
	Patient's death and dying	-.036	.090	-.038	-.405	.686
	Inadequate preparation	.184	.070	.227	2.631	.009
	Lack of staff support	.099	.058	.132	1.707	.090

Uncertainty concerning treatment by Physician	-.105	.095	-.088	-1.111	.268
Conflict with Physicians	.229	.090	.214	2.529	.012
Conflict with other nurses	.071	.061	.092	1.151	.251

a. Dependent Variable: Perceived Stress

The regression analysis on all seven dimensions of stress were significant at $p < 0.05$, $F = 6.105$. However, according to table 4.16 above, it was found out that only two dimensions were significant which have p -value < 0.05 , namely inadequate preparation and conflict with physicians with p -value of 0.009 and 0.012. Another five; patient's death and dying, workload, uncertainty concerning treatment by physician, conflict with other nurses and lack of staff support was not significant to stress since the p -value of each was 0.686, 0.496, 0.268, 0.251 and 0.090. We may conclude by saying that at least two dimension of stress, namely inadequate preparation and conflict with physicians has impact on perceived stress among nurses in National Cancer Institute.

Among the independent variables, inadequate preparation ($\beta=0.227$, $t=2.631$, $p=0.009$; < 0.05) was found to have the greatest influence on perceived stress followed by conflict with physicians ($\beta=0.214$, $t=2.529$, $p=0.012$; < 0.05). However, no influence was found by patient's death and dying ($\beta= -0.038$, $t= -0.045$, $p=0.686$; > 0.05), workload ($\beta=0.061$, $t=0.681$, $p=0.496$; >0.05), uncertainty concerning treatment by physician ($\beta= -0.088$, $t= -1.111$, $p=0.268$; > 0.05), conflict with other nurses ($\beta=0.092$, $t= 1.151$, $p=0.251$; > 0.05) and lack of staff support ($\beta=0.132$, $t=1.707$, $p=0.090$; > 0.05) towards perceived stress.

4.7 Discussion

Occupational stress is known to be classified as major hazards for many workers. This includes nurses and other professions. This paper examined factors influencing perceived stress among nurses; the case at National Cancer Institute. There are seven factors have been studied workload, patient's death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment by physician, conflict with physicians and conflict with other nurses. The relationship between perceived stress and its seven factors was investigated by calculating Pearson's correlation coefficients while multiple regression analysis was used to determine the most important predictor domains in stress. This study also examined the level of perceived stress encountered by nurses at the National Cancer Institute, other than identifying the factors that most affect perceived stress among nurses in NCI.

Out of 390 nurses in NCI, 182 were selected based on Krecjie and Morgan table (1970) to answer all items asked in the questionnaire. According to the results analysis, mean for all questions are between 1.6209 to 5.0000. This indicated that not all of the respondents agreed with the items asked in the questionnaire and the obtained results will be further discussed and concluded below.

Based on the research objectives of this study;

- (1) To determine level of stress perceived by nurses in National Cancer Institute.
- (2) To identify the relationship between occupational stressors factor to the stress perceived by nurses in National Cancer Institute.

(3) To identify the most influential occupational stressors factor to the stress perceived by nurses in National Cancer Institute.

All of them were identified. Objective one shows high level of stress perceived by nurses in National Cancer Institute with mean value = 5.0000. According to Davis, (1971), the level of the variable is considered high when the mean score is above 3.68.

Table 4.17

Results finding on hypotheses development.

No.	Statement	Results Finding
H1	There is a relationship between workload and perceived stress among nurses in National Cancer Institute.	Accepted
H2	There is a relationship between death and dying and perceived stress among nurses in National Cancer Institute.	Accepted
H3	There is a relationship between inadequate preparation and perceived stress among nurses in National Cancer Institute.	Accepted
H4	There is a relationship between lack of staff support and perceived stress among nurses in National Cancer Institute.	Accepted
H5	There is a relationship between uncertainty concerning treatment by physician and perceived stress among nurses in National Cancer Institute.	Rejected
H6	There is a relationship between conflict with physician and perceived stress among nurses in National Cancer Institute.	Accepted
H7	There is a relationship between conflict with other nurses and perceived stress among nurses in National Cancer Institute.	Accepted
H8	The influence of occupational stressors to perceived stress among nurses in National Cancer Institute	Accepted

Table 4.17 above shows results finding for each hypothesis. Objectives two shows there are positive and low relationship exist between occupational stressors (workload, patient's death and dying, inadequate preparation, lack of staff support, conflict with physicians and conflict with other nurses) and stress makes hypothesis 1,2,3,4,6, and 7 were accepted while hypothesis 5 was rejected since uncertainty concerning treatment by physician is not significantly correlated with stress as the p-value of $0.059 > 0.05$.

Based on the R squared value, 19.7% of factors influencing perceived stress among nurses has been 'explained' by occupational stressors in this study while another 80.3% is explained by other variables. Low percentage shows only 19.7 % were explained might relate to the respondent demographic background. Majority of the respondents are young Malay female aged between 21 to 30 years which is single with less working experiences. Thus, this might influences the result findings. There must be other variables contribute to the perceived stress among them like personal issue in term of social relationship, self-willingness or external pressure.

Hypothesis 8 are accepted as shown in table 4.17. Therefore, objective three shows that among all occupational stressors, inadequate preparation ($\beta=0.227$, $t=2.631$, $p=0.009$; < 0.05) was found to have the greatest influence on stress followed by conflict with physicians ($\beta=0.214$, $t=2.529$, $p=0.012$; < 0.05). No influence was reported by patient's death and dying ($\beta= -0.038$, $t= -0.045$, $p=0.686$; > 0.05), workload ($\beta=0.061$, $t=0.681$, $p=0.496$; >0.05), uncertainty concerning treatment by physician ($\beta= -0.088$, $t= -1.111$, $p=0.268$; > 0.05), conflict with other nurses ($\beta=0.092$, $t= 1.151$, $p=0.251$; > 0.05) and lack of staff support ($\beta=0.132$, $t=1.707$, $p=0.090$; > 0.05) towards perceived stress.

4.7.1 Level of stress perceived by nurses in National Cancer Institute

The mean value for dependent variable; perceived stress is 5.0000 (SD = 2.13106) with median value 5.0000 and mode value 7.00 shows that nurses in National Cancer Institute perceived stress level is higher. The highest mean value for independent variables are lack of staff support (3.1099), followed by workload (2.9560), patient's death and dying (2.8022), conflict with other nurses (2.7253), inadequate preparation (2.2912), uncertainty concerning treatment by physician (2.1868) and conflict with physicians (1.6209). According to Davis (1971), the level of the variable is considered high when the mean score is 3.68 – 5.00, whereas the score for moderate level is 2.34 – 3.67 and low level is 1.00 – 2.33. This shows for independent variable, none of the factor was 3.68 and above which means none of the respondent perceived the stressor frequently but as the mean value above one, it can be assumed that this factor was considered stressful at least occasionally. However, according to correlation analysis, out of seven factors that were studied, six of them has a positive and low relationship (workload, patient's death and dying, inadequate preparation, lack of staff support, conflict with physicians and conflict with other nurses) when the p-value < 0.05 and one of the factors; uncertainty concerning treatment by physician shows no relationship exist as it is not significantly correlated with stress as the p-value > 0.05.

National Cancer Institute starts to operate on 2nd September 2013. In January 2014, NCI was fully operated with numbers of patients was referred from other hospitals and has been almost 2 years until now. The high mean value of stress shows that nurses in National Cancer Institute perceived highest level of stress. This might because National Cancer Institute has become a main referral centre for cancer

treatment which cover treatment and care for patients, training centre for any level of workers or students, as a research and prevention place. With growing number of cancer patients increased in Malaysia, NCI offer best services and cancer treatment in the country. Therefore, it might influence the perceived stress level among nurses. Seven factors influencing perceived stress among nurses in NCI was studied. However, out of them, none has a mean value over 3.68 and this shows that all stressor contribute to existence of the stress among nurses in NCI are slightly low to medium and there might be other variables from external influencing them.

4.7.2 Relationship between occupational stressor and perceived stress experienced by nurses in National Cancer Institute

A stressor is an event or set of variables that causes a stress response while stress means physical or psychological response that may produce mental tension or stress or physiological reactions that may lead to health problem or sick. Occupational stress exists when there are occupational stressors that cause for workplace stress to happen like worker is overburden with the workload or no supervision from the management on work condition from time to time. All this occupational stressors classified as independent variable that lead to dependent variable which is perceived stress.

In this study, independent variable are factors influencing perceived stress among nurses and they are workload, patient's death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment by physician, conflict with physicians and conflict with other nurses. Results on the descriptive

analysis shows there are high levels of stress perceived by respondent in NCI while according to correlation analysis, out of seven factors that were studied, six of them has a positive and low relationship (workload, patient's death and dying, inadequate preparation, lack of staff support, conflict with physicians and conflict with other nurses) whilst, one of the factors; uncertainty concerning treatment by physician shows no relationship exist as it is not significantly correlated with stress as the p-value of $0.059 > 0.05$.

Based on the multiple regression analysis, the results obtained are $R = 0.444$ and $R_2 = 0.197$. This show only 19.7% of the value of stress has been able to be explained by independent variable and the remaining 80.3% is explained by other variables. Only two dimensions were significant which have p-value < 0.05 was found out of seven factors, namely inadequate preparation and conflict with physicians with p-value of 0.009 and 0.012. Another five; patient's death and dying, workload, uncertainty concerning treatment by physician, conflict with other nurses and lack of staff support was not significant to stress since the p-value of each was 0.686, 0.496, 0.268, 0.251 and 0.090. We may conclude by saying that at least two dimension of stress, namely inadequate preparation and conflict with physicians has impact on perceived stress among nurses in National Cancer Institute.

Workload

Workload can be described in quantitative terms to be excessive when the capacity of job specification exceeds the ability of a staff in order to meet the demands over a specified period of time (French & Caplan, 1972). According to Leplat (1997) workload results from combining the work requirements needed to fulfil an activity and the restraints represented by its impact on the organization.

Most studies show that workload has a relationship with high level of stress among nurses and most researchers supported that there are positive relationship between workload, stress and turnover intention (Brannon *et al.*, 2007). Results in correlation analysis shows there is a significant relationship between workload and perceived stress. Correlation value; $r=0.241$ ($p<0.01$) means that a positive and low relationship exist between the two. Thus, hypothesis 1 which there is a relationship between workload and perceived stress in NCI is accepted.

Patient's death and dying

Patient's death and dying is a very sensitive and emotive experience no matter how many experience the nurse has (Suresh P., 2009). Patient's death and dying may contribute to increase level of perceived stress among nurses. Nurses can be classifies as having more broad contact with patients compared to any other healthcare professionals (Costello, 2001). According to Wilson *et al.*, (2011), the death of patients gives impact on nurses and affects their emotions. Results in correlation analysis shows there is a significant relationship between patient's death and dying and perceived stress. Correlation value; $r=0.235$ ($p<0.01$) means that a positive and low relationship exist between the two. Thus, hypothesis 2 which there is a relationship between patient's death and dying and perceived stress in NCI is accepted.

Inadequate preparation

According to Mohite, Shinde & Gulavani, (2012) in their study shows inadequate emotional preparation is reported by 68% as occasional, 24% as frequent and 8% extremely occurring cause of stress respectively. Based on Chochinov M. H. M. and Breitbart W. (2000), feeling inadequately emotional is prepared to deal with

the emotional needs of patients and families and feeling that the nursing care offered was purposeless was associated with high stress scores. It is difficult to deal with emotional demands by patients and their families (Podrasky & Sexton, 1988). In this study, correlation value; $r=0.336$ ($p < 0.01$) means that a positive and low relationship exist between the two. Thus, hypothesis 3 which there is a relationship between inadequate preparation and perceived stress in NCI is accepted.

Lack of staff support

Based on the correlation analysis, lack of staff support; $r=0.249$ ($p < 0.01$) has a positive and low relationship exist between the two. Therefore, hypothesis 4 which there is a relationship between lack of staff support and perceived stress in NCI is accepted. According to Evans (2001), support is needed for all nurses in this clinical environment. That is why factor lack of staff support shows a positive relationship with highest value of r among others.

Uncertainty concerning treatment by physician

As stated in operational definition in chapter 3, uncertainty concerning treatment by physician refer to the stage where a nurses does not know the correct or exact medical care should be given to a patients or does not confidence whether the treatment given is correct or not according to physician order. In other word, it refers to lack of professional knowledge and skills. Based on the correlation analysis, the result of the analysis shows that uncertainty concerning treatment by physician is not significantly correlated with perceived stress as the p -value of $0.059 > 0.05$. Thus, hypothesis 5 which there is a relationship between uncertainty concerning treatment and perceived stress in NCI fails to be accepted.

Conflict with physicians

LeTourneau B. (2004) stated that conflict between physician and nurse, work pressure, and stress has become factors that contributing in job dissatisfaction and burnout among nurses. According to the result analysis, correlation value; $r=0.342$ ($p < 0.01$) means that a positive and low relationship exist between the two. Thus, hypothesis 6 which there is a relationship between conflict with physicians and perceived stress in NCI is accepted.

Conflict with other nurses

Based on the results finding, $r=0.233$ ($p < 0.02$) means that a positive and low relationship exist between the two. Thus, hypothesis 7 which there is a relationship between conflict with other nurses and perceived stress in NCI is accepted. Based on different surveys done, it is showed that conflicts among nurses have become an important issue in healthcare division worldwide (Almost, 2006; Farrell, 1997). This shows that conflict with other nurses might play a big role as a factor influencing perceived stress among nurses and this has supported the results finding that there is relationship between the two.

4.7.3 The most influential relationship between occupational stressors and perceived stress

Based on the regression analysis, only 19.7% of factor influencing perceived stress among nurses has been 'explained' by occupational stressors in this study while another 80.3% is explained by other variables. The most influential relationship between occupational stressors and perceived stress was found on

inadequate preparation ($\beta=0.227$, $t=2.631$, $p=0.009$; < 0.05) followed by conflict with physicians ($\beta=0.214$, $t=2.529$, $p=0.012$; < 0.05). However, no influence was found by patient's death and dying ($\beta= -0.038$, $t= -0.045$, $p=0.686$; > 0.05), workload ($\beta=0.061$, $t=0.681$, $p=0.496$; >0.05), uncertainty concerning treatment by physician ($\beta= -0.088$, $t= -1.111$, $p=0.268$; > 0.05), conflict with other nurses ($\beta=0.092$, $t= 1.151$, $p=0.251$; > 0.05) and lack of staff support ($\beta=0.132$, $t=1.707$, $p=0.090$; > 0.05) towards perceived stress.

Based on result, inadequate preparation is the most influential stressor in this research. This shows most of nurses in NCI has inadequate preparation to deal with the emotional needs of patients and their families. Supported by Damit A. R. (2007), when you were in charge of clinical situations but with inadequate experience, with less information on what a patient or a patient's family ought to be told about the condition and about its treatment may contribute to existence of stressors. Munley (1985) research found that stress was primarily linked with patient care, concern about patients and families, and their own feelings of grief and responsibility, thus, inadequate preparation will increase in stress level.

Conflict with physicians has influence perceived stress among nurses in NCI. Research done by Singh *et al.* (2015), show that nurses reported to have more stress due to conflict with physicians and this has supported this research where conflict with physicians influenced perceived stress among nurses in NCI. Tabak and Orit (2007), stated that both nurses and physicians should aware of the conflicts existed between them and should be trained to understand how they can be constructively resolved thus a good relationship and cooperation can be performed.

Workload shown there is no influence towards perceived stress. This might because of the quantity of nurses working in National Cancer Institute can be categorized as enough. Moreover, the length of service is just about to enter two years and ratio between nurses and patients that is still manageable ensuring that there was enough staff at the time. According to Sjogren K. (2013), a psychologist; Matias Brodsgaard Grynderup, has reported from the new Danish study “we may have a tendency to associate depression and stress with work pressure and workload; however, our study shows that the workload actually has no effect on workplace depression”. That shows workload is not the main factor contribute to occupational stress among workers and this supported the finding of this research that workload does not influence perceived stress among nurses in National Cancer Institute.

Patient’s death and dying results in no influence was found with perceived stress because nurses working in NCI know how to deal with such thing since working in NCI can be considered as mentally critical zone as most of patients here critically ill with cancer disease. According to World Health Organization (2015), cancer has become a leading cause of death worldwide and in year 2012, approximately there are 8.2 million deaths (World Cancer Report, 2014).

Lack of staff support shows that NCI nurses received strength support from their work surroundings results in no influence between lack of staff support and perceived stress was found. Quality and guidance supported by staff members and management will decrease the stress level. According to Health and Safety Executive, a supportive environment is crucial as staff need to know either the managers will support them or not, even in any situation if things go wrong or if they cannot cope with the stress condition, they will be there. Staff support can provide a

worker with confidence that work responsibilities and stressors can be adequately addressed (Gray-Stanley *et al.*, 2010).

Uncertainty concerning treatment by physician factor shows nurses in NCI received well information on their work and they know what to do when they face patients. This might be the possible reason on no influence found between uncertainty concerning treatment by physician with perceived stress. Supported by research done by Singh C., Sharma S., and, Sharma R. K. (2011) where lack of professional knowledge and skills caused a minimum stress to exist. Lam (2003) stated uncertainty regarding treatment was considered to be least stress.

Conflict with other nurses shows there are no issues or conflict addressed among nurses in National Cancer Institute results in no influence between conflict with other nurses and perceived stress was found. Research done by College of Nurses of Ontario (2009) resulted as a member of the health care team, nurses must be able to work in cooperation with colleagues to deliver safe, effective and ethical client care. Therefore, strong cooperation and relationship found among nurses in NCI delivered a good and smooth patient care thus minimize the stress causes.

The rest of 80.3% might be explained by other variables that contribute to perceived stress among nurses in National Cancer Institute (NCI) like first; work-related issues as patient's request, work environment, work logistic in term of distance and limited parking space available. Second, personal issues as job satisfaction, family pressure, family problem and money problem. Other variables can be on ergonomics problem such as prolonged standing, heavy lifting, indoor air quality and poor ventilation system. Therefore, this shows that future research is needed in order to clarify these issues and identify the existence of other variables.

4.8 Summary

As a summary, this chapter has explained results and discussion of the research which includes rate of response, respondent's demographic background, reliability analysis, descriptive analysis, correlation analysis and multiple regression analysis.

Based on the mean value of stress; 5.0000 shows that nurses in National Cancer Institute perceived high level of stress among them. According to the statistical analysis result, it can be concluded most of the factor studied are positively related to the dependent variable except for factor; uncertainty concerning treatment by physician ($r=0.140$, $p=0.059$). The correlation analysis produced that the highest correlation between independent variables and dependent variable are conflict with physicians ($r=0.342$), followed by inadequate preparation ($r=0.336$), lack of staff support ($r=0.249$), workload ($r=0.241$), patient's death and dying ($r=0.235$) and conflict with other nurses ($r=0.233$) with each of them has a positive and low relationship with perceived stress.

Multiple regression analysis tested the significance of the independent variables as the determinants of the dependent variable. Only 19.7% of factor influencing stress among nurses has been 'explained' by occupational stressors in this study while another 80.3% is explained by other variables. The most influential relationship between occupational stressors and perceived stress was found on inadequate preparation ($\beta=0.227$, $t=2.631$, $p=0.009$; < 0.05) followed by conflict with physicians ($\beta=0.214$, $t=2.529$, $p=0.012$; < 0.05). However, no influence was found by patient's death and dying ($\beta= -0.038$, $t= -0.045$, $p=0.686$; > 0.05), workload

($\beta=0.061$, $t=0.681$, $p=0.496$; >0.05), uncertainty concerning treatment by physician ($\beta= -0.088$, $t= -1.111$, $p=0.268$; > 0.05), conflict with other nurses ($\beta=0.092$, $t= 1.151$, $p=0.251$; > 0.05) and lack of staff support ($\beta=0.132$, $t=1.707$, $p=0.090$; > 0.05) towards perceived stress.

CHAPTER 5

CONCLUSION AND RECOMMENDATION

5.1 Introduction

The findings from previous chapter revealed the most influential factors that influencing perceived stress among nurses in National Cancer Institute are lack of staff support, followed by conflict with other nurses and inadequate preparation. This chapter aims to conclude the whole research process other than discussing the implication of the study and derive a recommendation and suggestions not only for future research but together for all people that include nurses and the healthcare management in order to cope with the occupational stress exist among them.

5.2 Conclusion

This research has been conducted to explore the relationship between factors influencing perceived stress among nurses in National Cancer Institute located in Putrajaya. All factors that were studied are workload, patient's death and dying, inadequate preparation, lack of staff support, uncertainty concerning treatment by physician, conflict with physicians and conflict with other nurses. These findings could have implications to nursing profession and all related parties. This review has indicated that finding from this research together with support from other research in developing recommendation and suggestion of coping strategies could help healthcare organization and management to monitor the stress existed and give

support on nurses regarding their job description and work specification of area. Finding of this research also will impact nurses itself by creating awareness and understanding of their personal responses towards factors influences the perceived stress existence.

5.3 Recommendation

Suggestions for stress management included staff training in counselling skills, monitoring staff conflict, implementing stress inoculation training to teach appropriate use of coping skills and finally, monitoring particularly vulnerable groups of hospice staff such as unqualified nursing assistants and qualified nurses in management positions. It was concluded that despite the difficult nature of hospice work, the hospice is a positive environment in which to work.

This research only focuses on nurses in National Cancer Institute which located in government administrative area of Putrajaya. In future research, the sample should be considered to enlarge with other area. Suresh P. (2009) recommended that research study can be repeated in other settings with larger sample size, therefore might results on conclusions to be generalized. Besides, since the population was selected from cancer hospital background, this might be able to be extended by comparison with Nilai Medical Centre (NMC) that was established in 1999.

Cooper and Locke (2000) assert that stress is better to be prevented rather than cure. Singh C., Sharma S., and, Sharma R. K. (2011) said “we can't eliminate stress in our daily life no matter when and where we are in, but we can manage and

control how it affects us”. This shows the important of recommendations in order to deal, cope and reduce the perceived stress existing among nurses.

There are many ways can be done in order to deal with perceived stress among nurses. First, in term of management itself, management plays an important part in order to reduce stress among nurses. Based on study done by Hajbaghery *et al.*, (2012), factors like lack of proper logistics, nurse shortages, irregularities in the organization, and poor management performance showed that if the senior management ranks perform their responsibilities (in terms of supplies needed to provide the quality care), it will largely reduce the pressure and stress imposed on nurses. This has been strengthen with studied done by Klassen C. G. (2013) where managers and senior leaders in organizations also need to consider the perceived job stress of their staff and this may involve finding ways to assist the work-life balance of their employees, for example, creating the option for self-scheduling on the unit. Van Bogaert *et al.*, (2010) stated other ways to alleviate perceived job stress is to have participative leadership management where employers check in regularly with employees to ask about the workload and ask about improving processes on the unit. Stress intervention programed should be introduced in nursing colleges and hospitals (Khan *et al.*, 2015).

Second, strong and positive relationship between nurses itself, supervisor and physicians as a colleagues can decrease stress level perceived 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). As supported by Milutinovic D. *et al.*, (2012), the first should be taken are more social and emotional

support needs to be provided by upper management and supervisors to nurses, in order to improve psychosocial work climate. Based on article posted by University Alliance on how to relieve stress in nursing, it stated there; maintain a positive outlook, healthy lifestyle, and have a conversation on sharing concerns with trusted co-workers can results in better cope among nurses. As a result, it will lead to better patient care, and increased work and personal satisfaction.

Third, clear job description help to determining do's and don'ts in daily work life. This includes known duties and responsibilities of each nurse. According to Collins J. (2005), an effective job description provides the base for performance expectations and explains the position of nurses clearly and concisely. Barbouletos S. (2011) stated, it is found that the weakness of defining job description and the existence of job discrepancy have an impact on stress level perceived by nurses in the workplace.

Next, counseling session or therapy should be provide in the hospital as a place for nurses to come and share their though. This can help nurses from suffering the psychological stress. Advice should be offered on any matters that include work issues, relationship issue, either at home or work, financial problems, health and mental health concerns and others. Based on Alhajjar (2013), support group for nursing personnel, counseling program or any therapy slot should be available for distressed nurses, and increasing observational abilities to detect high stress levels or burnout.

Other than that, organizational and workplace situation that may contribute to stress should be diagnosed. According to Roberts *et al.* (2012), once all these problems have been properly diagnosed, step or prevention plan to eliminate them

can be developed like in proper plan of adequate staffing ratios, work shift can be adjust, work hours can be discuss , rest breaks, and more balanced lifestyle can be created. McViqar A. (2003) conclude that more research study is needed to identify the most effective way in order to find out those who experiencing early difficulties. This can improve stress management techniques so the transition to severe distress can be prevented.

Recommendation for Future Research

This study has seven independent variables that were studied towards stress perceived. All this independent variables contribute 19.7% of the perceived stress among nurses in National Cancer Institute as the dependent variables (based on the R^2 value) whereas the remaining 80.3% is explained by other variables. In other words, there are other variables exist that are not been studied in this research and can be conduct in future research.

Other variables that might contribute to perceived stress among nurses in National Cancer Institute (NCI) are, first; work-related issues as patient's request, work environment, work logistic in term of distance and limited parking space available. Second, personal issues as job satisfaction, family pressure, family problem and money problem. Other variables can be on ergonomics problem such as prolonged standing, heavy lifting, indoor air quality and poor ventilation system. Besides, unknown external factor might exist and influences the perceived stress among nurses in NCI. Therefore, this shows that future research is needed in order to clarify these issues and identify the existence of other variables.

Besides, low correlation and regression results show that other than existence of other variables, the research method, variables suggested or sample taken might

not suitable with the research proposed. Since the study focused on nurses in National Cancer Institute, Putrajaya, it seems relevant to expand the sample population to other area in Malaysia. Future researcher might consider using different research method like qualitative method by doing an interview among respondent other than quantitative method that was used in this research. Other than that, this study can be expanded by study on other variables that might be existed like research study on external factor that influences stress among nurses such nurse's social life, personal issue in term of self-willingness or external pressure.

5.4 Summary

As a summary, this studied was done in order to identify factors influencing perceived stress among nurses; the case at National Cancer Institute. Conclusion and recommendation of this research was explained in this chapter. The research findings indicated the existence level of stress perceived by nurses in National Cancer Institute classified as high with mean value of 5.0000 as more than 3.68 was considered high as stated by Davis (1971). However, among seven factors that were studied, only 19.7% contribute to the dependent variable (perceived stress) based on the R^2 value while 80.3% are explained by other variables. The most influential factor is inadequate preparation and conflict with physicians.

National Cancer Institute can be classified as a newly operated government hospital that focused on cancer treatment and research as the operation was only nearly to 2 years of operation. According to the provision in Occupational Safety and Health Act (OSHA) 1994, it is a must for employers to make arrangement and

provide workplaces and work systems which are safe and free from health risks to the workers. Therefore, management plays an important role to identify root that causes the high level of stress perceived other than factor studied above. Future research on this topic should be considered in order to find other variables that may contribute. Other than that, recommendation and suggestion concluded before should be applied by all related parties in order to deal with nurse's stress perceived and decrease the stress level.

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