

**JOB STRESS, WORK CHARACTERISTICS AND SOCIAL
SUPPORT AMONG NURSES AT PORT MORESBY GENERAL
HOSPITAL, PAPUA NEW GUINEA**



**A THESIS SUBMITTED IN PARTIAL FULFILLMENT OF
THE REQUIREMENTS FOR THE DEGREE OF
MASTER OF PRIMARY HEALTH CARE MANAGEMENT
FACULTY OF GRADUATE STUDIES
MAHIDOL UNIVERSITY
2009**

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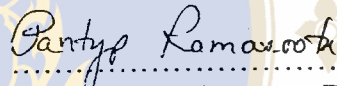
Thesis
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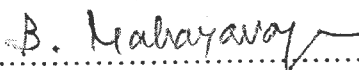
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Lastly, I dedicate this thesis to my late mother, Mrs. Judy nee Nombri Nad.

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JOB STRESS, WORK CHARACTERISTICS AND SOCIAL SUPPORT AMONG NURSES AT PORT MORESBY GENERAL HOSPITAL, PAPUA NEW GUINEA

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ABSTRACT

A cross-sectional descriptive study was conducted among Papua New Guinean nurses at Port Moresby General Hospital in the National Capital District of Papua New Guinea. The aim was to describe the patterns of job stress (acute & chronic) and their levels of severity as well as detail work characteristics and social support. A total of 161 self-administered questionnaires was obtained from nurses during the month of January, 2009.

Descriptive statistics were employed to describe the independent variables and the outcome under study. Most of nurses were married and had three to five children, earned between 69 to 274 US dollars per 2 weeks and lived in places easily accessible by hospital transport services. Half of them experienced acute and chronic stress at moderate levels. A study of the social support rendered by three sources (the nursing supervisor, family and colleagues) revealed that a moderate level of support for the nurses was provided by family, spouses and friends.

The family, relatives and friends made work life easier for the nurses and they were the easiest support people to talk to. The nursing supervisors were the ones who could be relied upon when the job got tough but family members were always available to listen to the nurse's personal problems.

When considering work characteristics, there were more registered nursing officers as compared to practical nurses. The mean number of years worked was 17 and ranged from 1 to 40. Most of them were permanent staff on government payroll and they worked an 8-hour shift. In a week, working hours for the nurses ranged from 40 to 59 hours. Job satisfaction and conflict at work were at moderate levels.

Policymakers and hospital managers must consider stress reduction programs and facilitate their introduction into nursing colleges to prepare nurses to work in a complex and demanding work environment where job stress is imminent.

KEY WORDS: JOB STRESS / WORK CHARACTERISTIC / SOCIAL SUPPORT / OCCUPATIONAL HEALTH / NURSES

76 pages

CONTENTS

	Page
ACKNOWLEDGEMENTS	iii
ABSTRACT	iv
LIST OF TABLES	vii
LIST OF FIGURES	viii
LIST OF ABBREVIATIONS	ix
CHAPTER I INTRODUCTION	
1.1 Rationale and justification.....	1
1.2 Research question.....	4
1.3 General objectives.....	5
1.4 Conceptual framework.....	6
1.5 Operational definitions of studied variables.....	7
1.6 Justification of the study.....	8
CHAPTER II LITERATURE REVIEW	
2.1 Concept of job stress.....	9
2.2 Models of job stress.....	10
2.3 Consequences of job stress.....	13
2.4 Work characteristics and conflict at work.....	13
2.5 Intrinsic work characteristics.....	13
2.6 Sociodemographics.....	15
2.7 Social support.....	15
2.8 Organizational structure.....	17
2.9 Organizational leadership.....	17
2.10 Physiological, psychological & behavioral responses to stress..	18

CONTENTS (cont.)

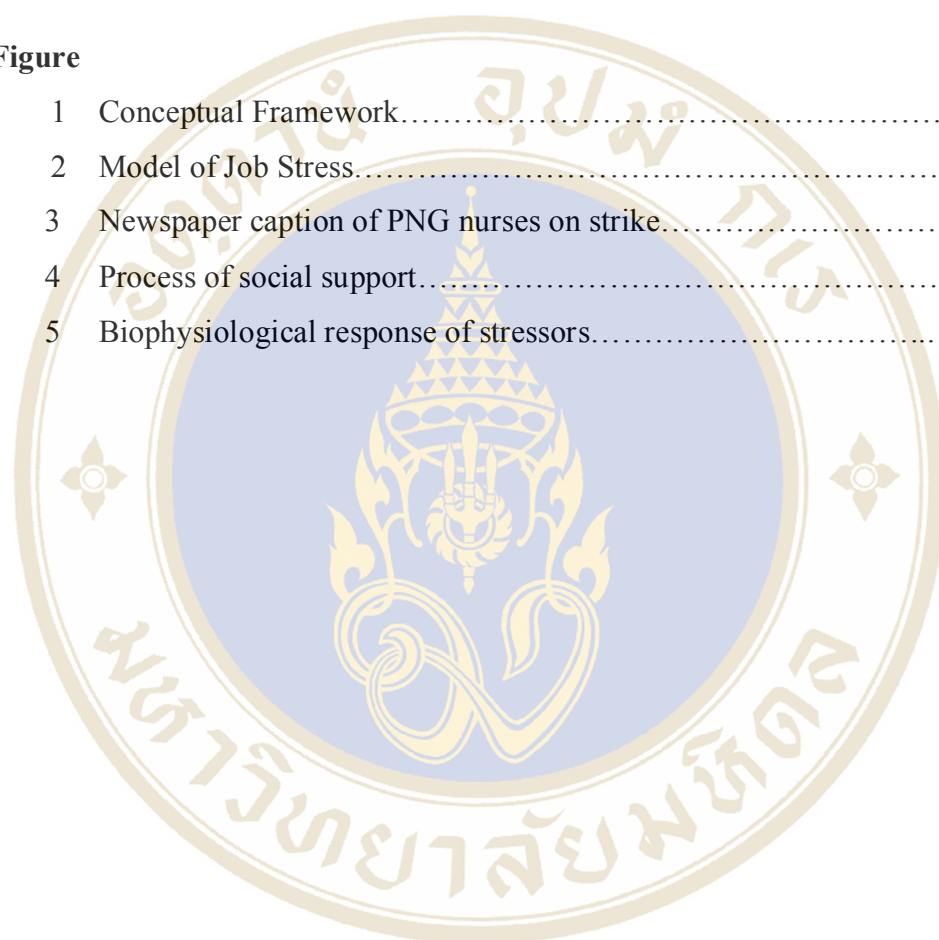
	Page
CHAPTER III RESEARCH METHODOLOGY	
3.1 Research design.....	21
3.2 Settings and study population.....	21
3.3 Research instruments and data collection procedure.....	22
3.4 Data analysis procedure and statistical method.....	28
CHAPTER IV RESULTS	29
CHAPTER V DISCUSSION	51
CHAPTER VI CONCLUSION AND RECOMMENDATION	
6.1 Conclusion	55
6.2 Recommendation	57
REFERENCES	59
APPENDIX	65
BIOGRAPHY	76

LIST OF TABLES

Table		Page
1	Sociodemographics of PMGH nurses.....	30
2	Percentage of nurses by job stress.....	33
3	Percentage of acute job stress by chronic job stress.....	34
4	Percentage of work characteristics of PMGH nurses.....	36
5	Level of social support provided by support persons	39
6	Percentage of the nurses according to the conflict at work domain	41
7	Percentage of the nurses by the job satisfaction domain	44
8	Percentage of nurses by each domain and acute job stress.....	46
9	Percentage of nurses by each domain and chronic job stress	49

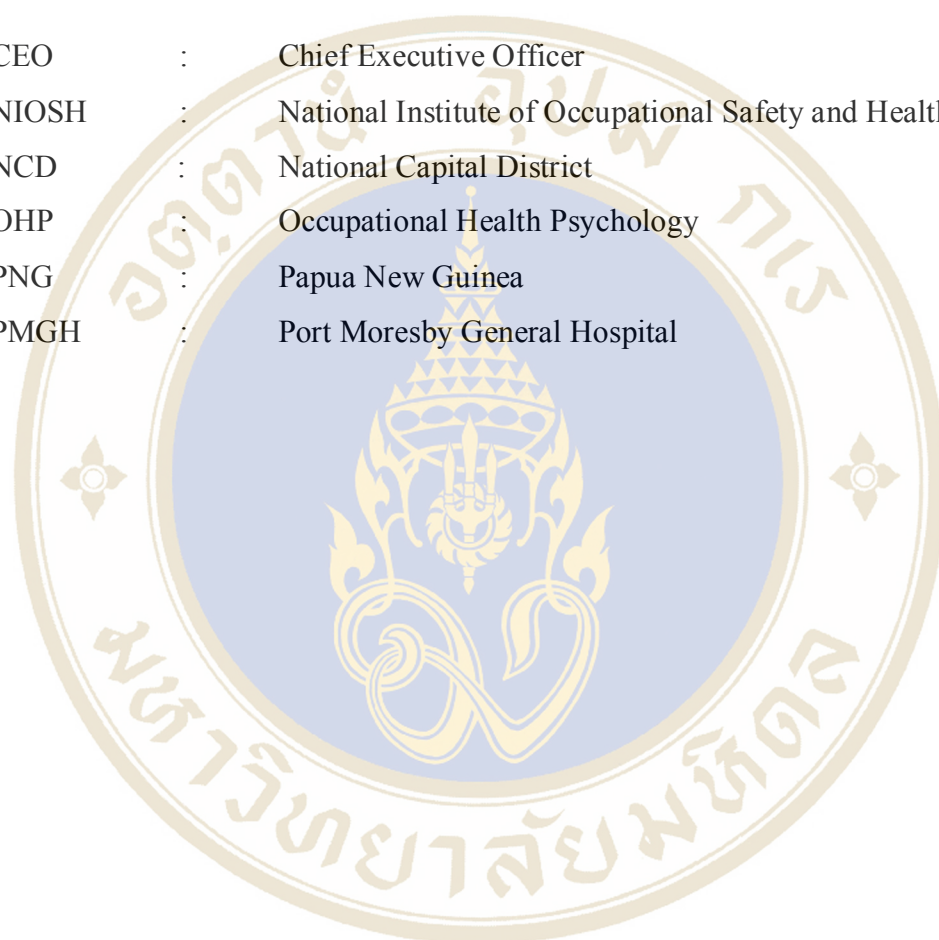
LIST OF FIGURES

Figure		Page
1	Conceptual Framework.....	6
2	Model of Job Stress.....	11
3	Newspaper caption of PNG nurses on strike.....	12
4	Process of social support.....	17
5	Biophysiological response of stressors.....	20



LIST OF ABBREVIATIONS

CEO	:	Chief Executive Officer
NIOSH	:	National Institute of Occupational Safety and Health
NCD	:	National Capital District
OHP	:	Occupational Health Psychology
PNG	:	Papua New Guinea
PMGH	:	Port Moresby General Hospital



CHAPTER I

INTRODUCTION

1.1 Rationale and Justification

Background Information

Job stress is arguably one of the most serious modern occupational health hazards in the 21st century in industrialized countries¹. For example, in USA alone an excess of \$150 billion is lost annually to stressor and stress related problems². Empirical evidence highlight the importance of understanding job stress for the benefit of the employees and their employers and to mitigate the impact of reduced service provision, high turnover and other physical and psychological ill health such as absenteeism, stomach ulcers, alcoholism, coronary artery related diseases like Hypertension as well as somatic illnesses, exhaustion in utilization of professional skills and suicide attempts^{3, 4, 5}. There are mental health consequences with 9.6% of Americans suffering from Depression in a twelve month period with some of the mental health problems identified as mental fatigue, psychological distress and sleep disorders⁶.

The nursing profession is known to be stressful throughout the world and has detrimental effects on the physical and psychological well being of an individual.^{7,8} Research over the past thirty years has highlighted the importance of having an increased understanding of the predictors of stress in people related professions such as the Police and Army personnel, pastors and clergy men, teachers and educators and how best to manage this.^{9,10,11} Occupational Health Psychology (OHP) is primarily concerned with the psychosocial health characteristics of work places and evolved out of two distinct applied disciplines namely Health psychology and Industrial/ Organizational Psychology. OHP have over the last twenty years researched work related physical problems such as accidental injury and

cardiovascular disease, mental problems such as psychological distress which refers to feelings of demoralization that affect people negatively, and often forces them to seek professional help, without the individuals necessarily meeting the criteria for a psychiatric disorder. Psychological distress is often expressed in affective symptoms, psychophysical or psychosomatic symptoms (e.g., headaches, stomach aches, etc.), and anxiety symptoms. Other notable health behaviours studied include smoking, substance abuse such as alcohol, work related injuries, absenteeism and work place moral; job satisfaction.

Nurses comprise the largest number of direct caregivers in the hospital setting and address increasingly complex patient needs with poor support, rapidly changing circumstances, organizational makeover, shortage of resources and staff and dealing with death and dying. These make nurses susceptible to stress and 'end stage' burnout from long term unmanaged work stress and is specific for people-oriented professions such as health care, social services, Police personnel and education. Nursing is emotionally, physically and psychologically demanding. To meet work demands, workers need to draw from a number of resources to help them cope better and these could be in the form of physical, psychological, social and organizational outlets so that they can help get the job accomplished as well as reduce demands or enhance growth and development. Quality nursing care results in better patient outcomes and less medical errors which compromise patient safety.

Research has revealed that people-oriented professions suffer often from work stress resulting from too much work for the available time at work, atmosphere at work and lack of resources such as social support. This is the most extensively studied resource with clear cut outcomes: having little or no social support especially from the supervisor and co workers has led to a higher level of job stress experienced at work¹². The physical and psychological manifestations of stress are more psychosomatic in origin but also include increased irritability, muscular aches and pains, tension headaches, inability to relax, appetite changes, disturbed circadian rhythm, concentration and memory problems, fatigue and depressed mood¹³.

The term stress remains an ill-defined concept and this extends to organizational stress, workplace stress or occupational stress, where there is no single agreed definition in existence by researchers over the years. For nurses, the most important goal was to help people in pain and as such this act alone was the greatest cause of stress when they witnessed human pain without being able to help.

The five professions most extensively related to in the literature include teaching, social services, medicine, mental health and the law enforcement in three main categories; work characteristics, organization characteristics and the individual's outlook on work. For teachers, the goal of relative importance was to educate students and when they encountered and dealt with undisciplined and disruptive students, these eventually lead to the major cause of stress for them. Managers in turn envisioned having a significant impact on the organization and consequently their most powerful cause of stress for them was not having enough power & resources to have a real impact.

In social services for example, carers in nursing homes encountered stress in terms of physical care and emotional support when dealing with the terminally ill cancer patients¹⁴. In medicine, most physicians who worked longer working hours ended up with physical, emotional exhaustion and depersonalisation due to the organizational climate¹⁵. Among nurses, mental health nursing has been found to be the most stressful speciality with low job satisfaction¹⁶. In the law profession, Deschamps et al studied occupational stress among police personnel and found that they were highly stressed due to the physical demands at work because of scarce manpower and long hours worked thus signalling an ill health provoking factor¹⁷.

Research on cross cultural comparison of work place stressors, ways of coping and demographic characteristics among hospital nurses revealed that there were some differences but not strongly predictive of job stress as compared to work characteristics and personality makeup of the person.

There is no published research to date conducted among Melanesians within the South Pacific region and this research hopes to describe the pattern of job stress, work characteristics and social support in Papua New Guinean nurses at the Port Moresby General Hospital.

Hospital nurses in Papua New Guinea differ vastly from Western and Asian cultures and it remains unclear as to what part job stress, social support and demographic characteristics play in occupational health of Melanesian nurses in the country and the South Pacific Region. A five year follow up study on stress among nurses in public and private hospitals in Thailand revealed increased stress in public hospital settings in the coverage of fourteen private and public hospitals but surprisingly there was increased job satisfaction with the same group of nurses compared to the private hospitals and this was attributed to age, increased monetary compensation and organizational support¹⁸.

This research aims to highlight the levels of acute and chronic job stress measured within a specified time frame as well as social support which is considered an important job resource for employees, work characteristics, conflict at work and job satisfaction in Papua New Guinean nurses at the Port Moresby General Hospital. It is considered important especially in the modern era where the effect of globalization is having an impact on every aspect of a country's growth, and as such the provision of practical solutions and interventions should be incorporated into nursing training programmes in nursing colleges to prevent job stress.

On the other hand, concerned organization managers and policy makers in the National Department of Health of Papua New Guinea should acknowledge this study and provide optimal support to help nurses who makes up the majority of health workers in the health service delivery system in the country.

1.2 Research Questions

This study aims to address the following questions:

- What is the pattern of distribution of job stress, work characteristics and social support in Papua New Guinean Nurses at the Port Moresby General Hospital?
- If Papua New Guinean nurses at the Port Moresby General Hospital experience acute and chronic job stress at varying levels of severity, then what are the contributing job stressors?

1.3 General Objective

To identify the pattern of distribution of acute and chronic job stress, work characteristics and social support in Papua New Guinean nurses at the Port Moresby General Hospital which is the national referral hospital of the country.

1.3.1 Specific Objective

1. Describe job stress in terms of acute or chronic job stress at varying levels of mild, moderate or severe forms respectively in Papua New Guinean nurses at Port Moresby General Hospital.
2. Describe work characteristics such as working overtime, shift work, rotation pattern, permanent and nonpermanent nursing positions, job description, length of nursing years, work conflicts, role ambiguity as well as job autonomy and job satisfaction.
3. Describe the characteristics of social support in terms of nursing supervisor support, coworkers support and family support.
4. Identify the sociodemographic characteristics of the respondents in terms of age, marital status, and number of children, level of income, residences & place of origin as well as the professional status of the nurses in terms of registered nurses or permanent nurses.

1.4 Conceptual Framework

The theoretical constructs of job stress, social support, work characteristics and demographics are elaborated below and are based on reviewed literature as well as adapted from the National Institute of Occupational Safety and Health (NIOSH) from which the questionnaire used in this study largely derives from. The variables defined below give the framework for the application of the theoretical component to be measured. Extensive literature search identified situational variables including subjective health complaints are more strongly predictive of stress than personal characteristics. Selye's theory links stress to subjective health complaints¹⁹. It is important to consider that whilst some forms of stress actually increase worker's productivity referred to as eustress, this study is concerned with finding practical solutions to distress experienced in the workplace that impairs work performance among the nurses.

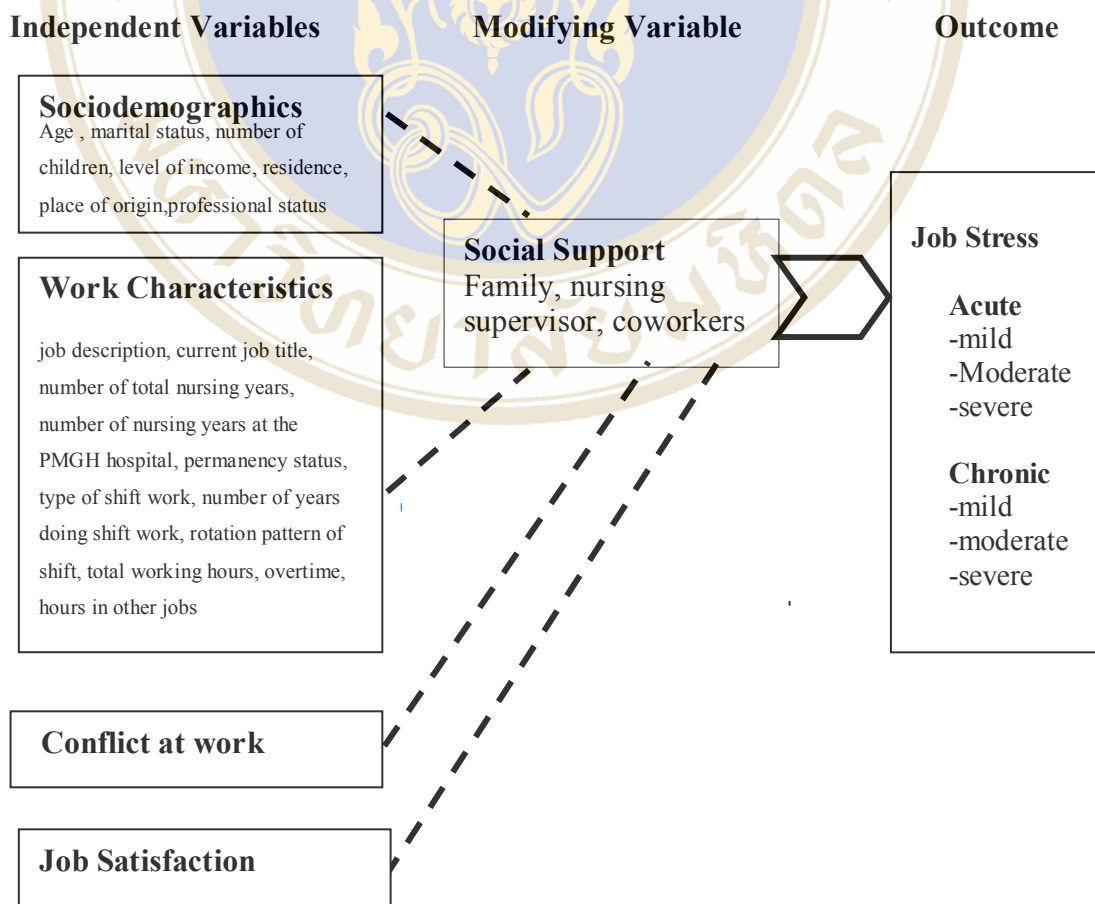


Figure 1 Conceptual framework modified from the NIOSH model

1.5 Operational definitions of studied variables

Job Stress: was defined as the harmful physical and emotional responses that occur when the requirements of the job do not match the capabilities, resources, or needs of the worker. In this study, quality of general health that is subjective health complaints was used as a proxy to measure job stress²⁰.

These complaints included sleep problems, appetite changes, smoking behavior, perceived trivial issues, mood changes, self esteem issues, concentration pattern, sweaty hands, spells of dizziness, and palpitations.

Job stress was also defined by job accidents that had occurred within the past six months and the number of sick leave that nurses took during the immediate past week.

In this study, job stress was dichotomized into acute job stress for symptoms that happened during the past week from less than a day to seven days (mild, moderate and severe) whilst chronic job stress referred to symptoms that occurred in the immediate past month (mild, moderate and severe).

Sociodemographics: these referred to individual characteristics of Papua New Guinean nurses that include age, professional status of the nurse as a registered nurse or practical nurse, marital status, number of children, level of income, place of origin and residential area.

Work characteristics: In this study, this referred to the general job information that included total number of nursing years, number of years worked at the Port Moresby General Hospital, including the job description of the nurse. Shift work was measured in eight hourly intervals and the number of times a shift was changed by the nurse manager, number of working hours was also noted, and overtime if any performed and including other hours used to work outside of PMGH.

Social Support: referred to emotional support rendered by three sources in this study; relative, spouse or other family member as well as from colleagues,

coworkers and the nursing supervisor in this survey. This included making life easier, approachable by nature, rely on the support person when the job was tough, and the support was willing to listen to the nurse's personal problems.

Conflict at Work : Conflict at work in this study was defined by cooperation & harmony within the group and other groups, disagreements within the group and other groups, differed opinions, supporting others ideas, clashes within group and other groups, friendliness and agreement, team work and feeling of 'we', harmonious relationship in attaining the hospital's goals, lack of mutual assistance between nurse's group and other groups, personality clashes were also measured and whether other groups created problems for the nurse's group.

Job Satisfaction: defined as the overall satisfaction of the individual with the present job and defined in this study by strongly recommended the job, advised against taking up a nursing job, and took the same job to not wanting to work at all.

1.6 Justification of the study

There is an increasing need in the area of research to mitigate the effects of the rising costs of burden of disease arising from Job stress where eventual chronicity will lead to long term impacts on the nurses and the organizations in what is termed as the new age 'epidemic' of globalization with incurred costs of liability by the organizations to minimize high staff turnover, sick leave from work, high insurance claims, meet workers compensation and deal with less nursing graduates.

Nurses who experience job stress especially in the chronic stage may be less productive and not able to provide quality health care. On the other hand, stress may invariably be at very low levels resulting in increased productivity in the nursing profession at the Port Moresby General Hospital in Papua New Guinea. The nursing profession is in the middle of a shortage and researchers estimate that by the year 2020, the available registered work force will have fallen to 20% less than the required minimum²¹.

CHAPTER II

LITERATURE REVIEW

The survey was aimed at describing the pattern of distribution of job stress in relation to time (acute and chronic) and the levels of stress; mild, moderate and severe as well as describing the related stressors. This study also described work characteristics, social support, conflict at work, job satisfaction and sociodemographics among Papua New Guinean nurses at the Port Moresby General Hospital. A literature search returned the following studies relating to the independent variables and the outcome, job stress. Studies relevant to this research are discussed in detail below.

2.1 The concept of Job Stress

2.1.1 Definition of Job Stress

Stress was derived from the Latin word “Stingere” that is to draw tight. Stress can be described as a threat of anticipation of future harm, in the form of physical or psychological events that lower an individual’s self esteem. Job stress affects the behaviour of an individual and originates from emotions and invokes a physical response to a non conducive environment that works against the individual. The United States National Institute of Occupational Safety and Health (NIOSH) have been concerned with job stress since the early 1980s^{22, 23}.

The NIOSH, where the questionnaire used in this study largely derives from defines stress as the “harmful physical and emotional responses that occurred when there was a mismatch between job requirements and the employee’s capabilities, resources and needs”. Stress was thus referred to as the ever changing cognitive state where the disruption of homeostasis calls for restoration of this imbalance²⁴. Stress may be acute or chronic in nature²⁵.

2.2 Models of Job Stress

There are three groups of researchers with differing views on job stress; one school of thought focuses on the employee and his or her individual characteristics which include coping ability, skills, resiliency, genetic makeup and previous learning experiences as well as specific job tasks at hand. Another school of thought focuses on the workplace environment and the organizational characteristics as the major sources of work related stress.

The third group uses a transactional theory of stress that attributes stress to the environment but argues that the individual determines whether this might be the source of stress according to his or her appraisal of the situation including perception and this eventually determines the mental and physiological stress response pattern and long term health consequences²⁶.

Another, fourth widely accepted theory has been the Person- Environment Fit Theory where stress and strain in the workplace results from an imbalance between the people as perceived and the work environment. Another, fifth model is Karasek's Demand Control Model which has three important dimensions which are workplace demands made upon the employees, the individual's ability to control and influence workplace processes and the social support at work²⁷.

Another widely debated sixth model is Siegrist's Effort- Reward Imbalance model that suggests that when an individual puts in a lot of effort into his or her job and is not acknowledged and recognized duly by the employer in the form of rewards such as paid leave, paid holidays and pay rise, this lack of recognition eventually leads to work stress and health related problems. This is a theory most suited for managers²⁸. All theories discussed make up the NIOSH standardised questionnaire used by the respondents in this study.

The model below in figure 2 is modified for this study from the NIOSH and depicts the outcome of job stress identified from previous research and proposed theories²⁹.

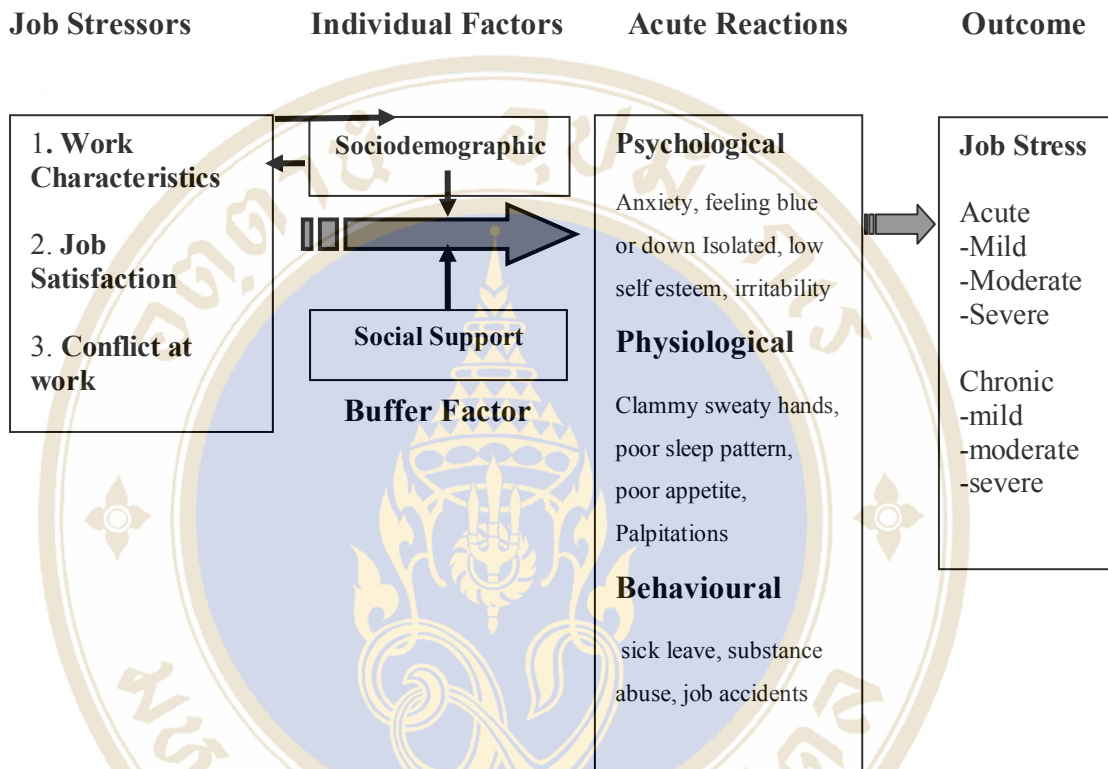


Figure 2 Modified model of job stress and health from the NIOSH

The following figure (fig. 3) was an example of a current situation regarding a long delay in recognizing the nurses’ awards that meant an increase in their current salary since 2006 when the national government approved the new structure for nurses across the country in Papua New Guinea³⁰.

Nurses walk off!

By BOLA NOHO

NURSES throughout Papua New Guinea walked off their jobs yesterday morning due to the non-payment of a promised 2006 award.

Despite an agreement between the Health Department and the PNG Nurses Association (PNGNA) on Tuesday to avoid industrial action, the nurses took no heed and went on strike.

On Tuesday, senior officers from the Department of Health including the Secretary, Dr Clement Malau, the salaries and conditions monitoring committee and union executives in a joint press conference agreed to have nurses paid in pay period seven – April 8. BUT the nurses stood by their original resolution to strike if the Government did not pay their 2006 awards on February 25 as promised earlier.

Nurses at the Port Moresby General Hospital, Laloki Psychiatric Hospital, the clinics and health centres in the National Capital District and Central Province yesterday spearheaded the strike action and walked off at 8am followed by their counterparts in Wewak and Madang.

Nurses at Lae's Angau Memorial Hospital, Mendi Hospital, Mt Hagen General Hospital, Goroka Base Hospital and other major hospitals around the country joined the strike later in the afternoon.

Only doctors and the community health workers (CHW) attended to the sick.

Nurses said they were not happy with the way the Government had treated them and dragged the issue.

A senior nursing officer at the PMGH, who did not want to be named, confirmed the nurses did not turn up for work.

She said the strike caught them by surprise and they did not have contingency plans in place.

Figure 3 A Caption from Papua New Guinea's National Newspaper regarding Papua New Guinean Nurses protesting over a pay rise promised by the National Government.

2.3 Consequences of Job Stress

2.3.1 The Causes of Stress

Existing research findings highlighted various aspects of the variables under study in this research especially in nurses in westernized countries and certain Asian countries like Japan, China, Thailand and Hongkong. Human service work was characterized by decisions that involved direct responsibility for other people's lives³¹.

This responsibility was found to be stress inducing. Stress experienced by workers was called job stress and may be due to a number of factors such as overtime, excessive work load, shift work, long hours of work outside the allocated time, job dissatisfaction, role ambiguity- role conflicts (conflict at work), and poor social relationships with the nursing supervisor, co-workers and family members.

2.4 Work Characteristics and Conflict at work

Stressors are also described as antecedents to job stress and are divided into factors intrinsic to the job itself, roles in the organization, relationships at work such as nursing supervisors, co-workers and subordinates, career development issues, organizational factors including the structure, cultural and political climate of the organization and the work - home interface³².

2.5 Intrinsic Work characteristics

Work load referred to the amount of work that the nurse performed and this can be stress inducing for many nurses where overload and under load of work resulted in psychological and physical strain. It was also important to distinguish between measuring the quantity and quality of work load.

Work hours related to the number of hours that a nurse spent at the hospital and a meta analysis of research obtained small but statistically significant

correlations between the numbers of hours worked and physiological and psychological health symptoms³³.

Exposure to risks and hazards are often encountered by nurses in their daily routine of patient care and these include exposure to hazardous materials and communicable diseases. These special risks are associated with the occupation and are regarded as a source of stress for the nurses.

Role demands related to pressures placed on a person because of the function of the particular role he or she plays in the organization. Role conflicts, role ambiguity, role overload and congruence of status and power are the major sources of role demand³⁴.

Role conflict existed when an individual was torn by conflicting role demands in a particular work role. The more conflicting the demands imposed by a certain work environment, the higher would be the job-related tension experienced by the workers. Status mismatch occurred when an individual was expected to perform a certain task or duty but was not given the power needed to perform the task. Status mismatch has profound and harmful consequences for both the individual and the organization³⁵.

Role overload included both quantitative and qualitative overload. Quantitative overload referred to the numerous roles that an individual was expected to carry while qualitative overload referred to the emphasis of an individual's responsibilities, such as, being responsible for people rather than non living things.

Both quantitative and qualitative role overload are associated with high stress, with qualitative overload as the more stressful source. Inappropriate and excessive requests for service beyond the scope of the workers' job descriptions are considered most stressful to the workers. Interpersonal demands were pressures created by other employees³⁶.

Individual task demands related to meeting unrealistic deadlines, role conflict due to having many supervisors and less clarification of job tasks, the level of responsibility, and experiencing difficulties trying to balance work and personal lives. An example would be divorced and widowed single women did not fare as well as the single unmarried female nurses due to lack of support from ex spouse and this led to increased job stress.

Group demands related to poor networking among co workers and or the nursing supervisor, where a negative managerial style affected the subordinates' physical health, resulting in symptoms such as increased stress level and symptoms of depression³⁷.

2.6 Sociodemographics

There has been long standing interest to identify some sociodemographic factor that contributed to job stress that can pose as significant on an individual basis as a predictor of job stress, but so far no major factors have been found. The Effort - Reward imbalance made mention of salaries and not providing incentives for workers as the only contributor to job stress in this area. Gender differences do not account for any significance³⁸. Heslop et al studied the associations between job satisfactions; self perceived stress, cardiovascular risk factors and mortality comparing men and women and stated that there was no significant difference in mortality from cardiovascular disease according to job satisfaction after adjustment for age and occupational class, age, occupational class and cardiovascular risk factors³⁹.

2.7 Social Support

Social support was defined as the assistance and protection provided to others, especially individuals. Social support was divided into emotional support and instrumental support. Emotional support came in the form of reassuring words, empathy, gestures like holding hands, facial expressions, pat on the back, knowing that

someone is available, sending cards and or flowers or letting someone know that others are praying for him or her. Instrumental support referred to tangible goods such as providing transportation services, providing financial assistance, and food, physical care, supplying chairs to the hospital ward or providing shelter. Lack of social support from colleagues and poor interpersonal relationships caused considerable stress⁴⁰.

The assistance acted as a form of protection from life's stress. The basis of social support, considered fundamental to this concept involved the exchange of resources between two individuals and advocacy for the affected individual⁴¹. Social support mechanisms in stress are divided into three main effects; main, moderating and mediating effects. Main effects included a direct relationship between social support and well being. Moderating effects involved the presence of an antecedent (third variable) affecting the relationship of other variables such as a stressor which is an independent variable and an outcome that was a dependent variable such as levels of job stress. The mediating effect of social support was such that when it influenced stress, the variations significantly affected the variations of outcome as well⁴².

Cohen et al tried to clarify the concept of social support from an emotional and instrumental perspective and established the need for antecedents plus a perceived need, social network and climate (hospital environment) that was conducive and encouraged the exchange of social support. Below is a diagrammatic representation of Cohen's work^{43, 44}.

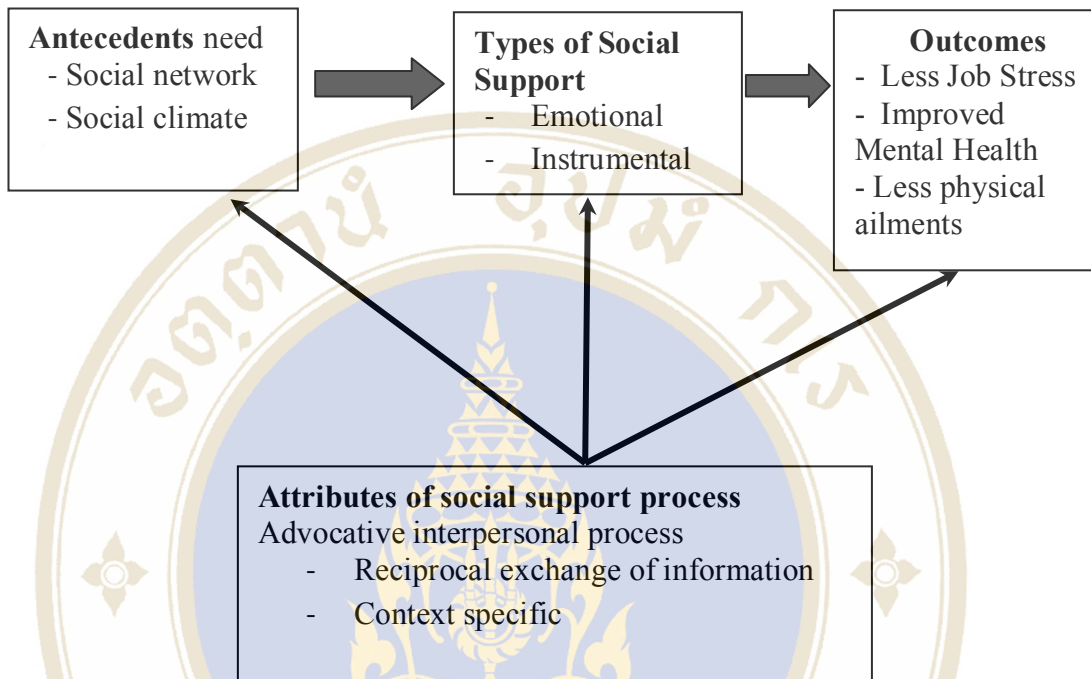


Figure 4 The process of social support – modified from Cohen et. al

2.8 Organization structure

Organization structure is defined as the level of differentiation in the organization, the degree of rules and regulations, and where decisions are made. Cherniss stated that hierarchical decision-making may increase job stress as an order of ascending power structure which tended to reduce staff autonomy and control, contributing to learned helplessness⁴⁵.

2.9 Organizational leadership

Organizational leadership represented the managerial style of the organizations senior executives. Lack of organizational support and feedback from

supervisors led to an increase in organizational stress, although supportive interpersonal recognition and acceptance could reduce stress. The extent to which the leader provided clear direction reduced conflict and uncertainty at work⁴⁶. In short, task demands, role demands, interpersonal demands, organization structure and organizational leadership are defined categories of potential stressors that produced demands on nurses in this study⁴⁷.

The degree of stress to be felt depended on certainty of the outcome of the environmental demand and whether or not the outcome was perceived as important by the individual. The more uncertain the outcome, the higher the stress that was to be felt. Furthermore, if the outcome of the environmental demand was perceived as unimportant by a person, even if it is under an uncertain condition, no stress was felt. Therefore, an environmental factor was stress-inducing only if its outcome was perceived as uncertain and important to an individual.

Stress Management Interventions

Stress management programs according to literature review strongly suggested that the programs are effective in combating stress or reducing stress responses by enhancing effective coping skills, and increasing social support. Shimazu et al revealed that work site health promotions had the potential to improve cardiovascular risk factors of Japanese employees⁴⁸.

2.10 The Physiological, Psychological and Behavioural responses to Stress

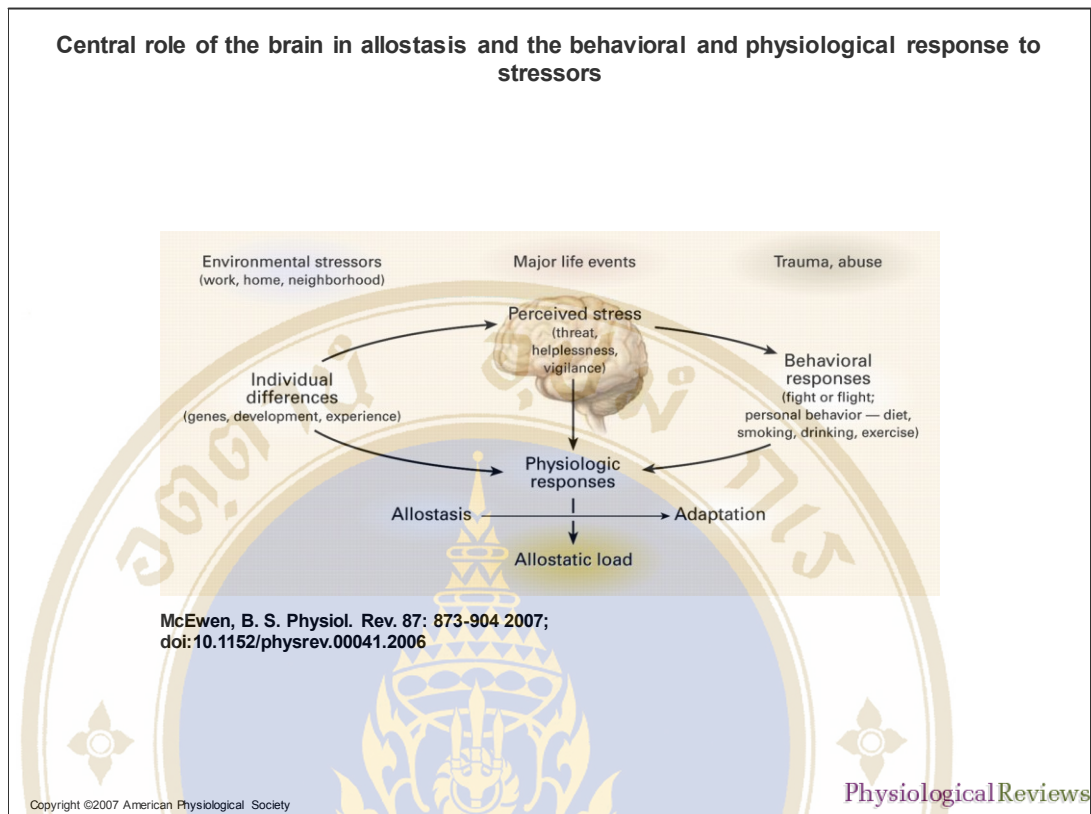
When examining the relation of stress to an individual's health, work stress and socioeconomic status related differently to cortisol responses to waking and cortisol output over the day, Nakamura stated that cellular immunity with burnout, stress, health behaviours and physical factors were correlated but this is not observed in this study⁴⁹. He also stated that stress induced immunosuppression led to an increased number of illness such as cardiovascular diseases, asthma, depression,

anxiety and somatic related disorders. Nakata also related that increased job stress and demands and intra conflicts with colleagues, job satisfaction and social support were all independently associated with insomnia⁵⁰. The study of behaviour patterns among those stressed at work reported that individuals who experienced especially increased job dissatisfaction tend to smoke a greater number of cigarettes daily leading to mortality with no differences among men and women after adjusting for age and occupational class and cardiovascular risk factors⁵¹.

Selye, often referred to as the ‘father of stress’, first researched stress in the 1930s and linked it to health. He had rodents exposed to severe physical and mental insults and found that this led to the activation of the Hypothalamic – hypophyseal – ACTH – glucocorticoid axis resulting in characteristic changes in metabolism, organ functions and in the immune system⁵². Researchers today recognized these pioneer findings and acknowledged the efferent links between the brain and mental and physical as well as behavioural changes.

Reference was made to an active process called ‘Allostasis’ which was a human response to the ‘fight or flight’ concept where there was a release of neurochemical and hormonal signals into the brain and blood, allowing the individual to cope with the immediate internal and external demands imposed by the stressful event, while attempting to restore homeostasis^{53,54}.

However, longer or chronic exposures to stress and stress hormones led to ‘allostatic overload’ resulting in negative neurobiological functions. This is best summed up in fig 5 below⁵⁵.



Adapted from: McEwen, B. S. *Physiol. Rev.* 87: 873-904 2007; doi:10.1152/physrev.00041.2006

Figure 5 The bio- physiological Response of stressors from McEwen et. al

CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

Cross sectional descriptive study.

3.2 Setting and Study Population

Population based study of registered nurses employed at the Port Moresby General Hospital (PMGH) located in the capital city of Papua New Guinea, Port Moresby. . PMGH is the only national referral hospital of the country that has the majority of nurses working at any one time, thus purposive sampling was used for this survey.

315 nurses are currently actively employed by the Port Moresby General Hospital out of the 613 funded nursing positions (staff ceiling) of the hospital at the time of interview. The loss of nursing staff were through transfers, promotions to the National Health Department, maternity leave, twelve months leave without pay (LWOP), furlough leave, study leave and recreational leave of six weeks paid leave as indicated by the 2005 PMGH hospital report.

3.3 Research Instruments and data collection procedure

- Self administered questionnaire for sociodemographic information of participant
- NIOSH job stress questionnaire that was a 62 item sample made up of domains such as subjective health complaints used as a proxy in this study to measure acute and chronic job stress, work characteristics (general job information), social support, job satisfaction and conflict at work. This was a self administered survey package.
- Participants responded to the self administered questionnaires after they consented to participating in the research. Other nurses declined. After the exclusion criteria were applied, a total of 161 participants were recruited out of the 315 nurses currently employed at PMGH.

Exclusion criteria:

- New nurses with less than twelve months on the job- this
- Included new graduates and nurses who transferred in from other hospitals,
- Nurses not registered with the PNG Nursing Council, nursing supervisors and ward managers, nursing administrators
- Nurses having a Psychiatric consult and receiving psychopharmacological treatment.

3.3.1 Survey Package included:

1. Letter of introduction
2. Letter of granted permission from the CEO of PMGH
3. Written informed consent from subjects, information regarding their rights and assurance of confidentiality.
4. Questionnaire comprising a total of 62 questions lasting approximately 20 minutes for each participant.

Two research assistants (fourth year nursing students) were trained over three consecutive days to administer the questionnaires.

Ethical considerations, informed consent and participant information sheet and letter of introduction of the study were given out to the participants. Some nurses' feared repercussions from their superiors and assurance of confidentiality were conveyed to every participant and so did not disclose the ward or section where they worked. No individual was coerced to take part against his or her own will.

The primary researcher explained purposes and the process of the study including data collection techniques and emphasis was placed on the ethical aspect and informed consent procedure of individual participants to the two research assistants and to the participating nurses.

The participants were required to sign the participant information sheet and the consent form which encompasses the purpose and procedure for the study project as well as highlighting the anonymity of the participant and reassurance of the non disclosure of any personal information provided during the course of data collection. Completed questionnaires were collected in boxes provided by the research assistants in each of the wards.

The questionnaire consisted of six parts;

Part 1: Back ground Information; Age, marital status, number of children, level of gross income, residential suburb, and place of origin. The professional status referred to the nurses who were divided into two categories referred to a nursing officers and community health workers or practical nurses. A registered nurse graduated with a higher school certificate and a nursing diploma (3 years) from a recognized and approved nursing college in PNG and or a degree from the University of PNG and a practical nurse was defined in this study as one with a Grade ten or eight high school certificate and a nursing certificate.

Years of work ranged from when they first entered the nursing profession after graduation to the time of interview. Level of income and Residential area designated as places where the hospital transport services are able to drop off night shift staff and the hospital nursing quarters was accessible by foot. Other residential areas referred to those not serviced by the hospital buses. The province of origin was divided into four main regions for administrative purposes in Papua New Guinea.

Part 2: Work characteristics in this study referred to current job title, number of nursing years, number of years worked at the Port Moresby General Hospital, permanency status of the nurse which is given as a position number against her name and recorded at the Human Resources Division at the Health Dept, this is used to keep a record of her salary. Part time nurse is not given a position number and paid as a casual employee of the hospital when services are needed in busy departments.

Shift work was measured in eight hourly intervals and the number of times a shift was changed by the nurse manager, number of working hours was also noted, and overtime if any performed as well as other hours used to work outside of the hospital of study. A higher score indicated an increased job stress level. This is an eleven item questionnaire.

Part 3: Conflict at work related to conflict between participants, colleagues, nursing supervisor and among group members themselves. All information pertaining to work situation among sub groups included; cooperation, harmony, disagreements, personality clashes, differed opinions, team work and information with holding from other group members.

The scale was measured as a sum on a 5 point likert scale from strongly disagree to strongly agree The greater the score this signified decreased conflict at work for positive questions and vice versa for negative questions. The scoring approach used in this study was;

- Positive questions;
- 5 = strongly agree
 - 4 = moderately agree
 - 3 = neither agree nor disagree
 - 2 = moderately disagree
 - 1 = strongly disagree
- Negative questions;
- 5 = strongly disagree
 - 4 = moderately disagree
 - 3 = neither agree nor disagree
 - 2 = moderately agree
 - 1 = strongly agree

Questions 19, 20, 22, 25, 26, 28, 30 and 31 are scored from one up to five but in the reverse order and summed whilst questions 18, 21, 23, 24, 27 and 29 are not inversely summed. The questions made up a fourteen item questionnaire.

Part 4: This part focused on job satisfaction and was relevantly straight forward for participant to understand and fill out.

The three to four point likert scale ranged from very satisfied to not at all satisfied, for each question respectively such that increasing scores suggest increased dissatisfaction with current nursing job. In this category, job satisfaction was scored as the following for the four items;

- 1 = decide without hesitation to take the same job
- 2 = have some second thoughts
- 3 = decide definitely NOT to take this job.

- 1 = take the same job
- 2 = take a different job
- 3 = not want to work

- 1 = strongly recommend it
- 2 = have doubts about recommending it
- 3 = advise against it

- 1 = very satisfied
- 2 = somewhat satisfied
- 3 = not to satisfied
- 4 = not at all satisfied

Those respondents that scored less than the 25th percentile were categorised as having low job satisfaction, more than 25th percentile and less than 75th percentile were assigned to moderate job satisfaction. Scores more than the 75th percentile when summed were assigned to high job satisfaction.

This is a four item questionnaire.

Part 5: General health information used as proxy to measure the outcome of job stress comprised of subjective health complaints was dichotomised into acute stress (unwell within the past week) and chronic stress (unwell within the past month) the subjective health complaints as specified by the NIOSH do not necessarily relate to a serious medical condition. Job stress was dichotomized into acute stress for symptoms that happened during the past week from less than a day to seven days (mild, moderate and severe) whilst chronic stress referred to symptoms that occurred in the past month (mild, moderate and severe) and based on the likert scale that ranged from rarely or never to very often or most of the times according to the questions.

The behavioural component comprised of smoking pattern, job accidents within the past six months and the number of days of sick leave within the past month. Nurses who smoked were perceived as experiencing chronic stress, involved in recent job accidents also signified acute stress induced behaviour and the absence from work taken out as sick leave indicated chronic stress.

The classification and scoring system used in this study were primarily of the researcher to explain the levels of job stress as the NIOSH did not set an arbitrary cut off point for use in the standardised questionnaire.

As such, items in this category were scored as below;

4 = rarely or none of the time (less than 1 day)

3 = some of the time (1 to 2 days)

2 = occasionally or a moderate amount of time (3 to 4 days)

1 = most or all of the time (5 to 7 days).

Other questions drawing responses in the same category ranged from;

5 = never

4 = occasionally

3 = sometimes

2 = fairly often

1 = very often

In this study, an increased score summoned a lower level of job stress in the acute and chronic categories where arbitrarily (first and third quartile used as cut off points in this study);

Mild job stress = more than 75th percentile

Moderate job stress = more than the 25th percentile and less 75th percentile

Severe job stress = less than 25th percentile.

Part 6: Social support focused on three relevant sources of supports that is family, nursing supervisors and colleagues that each participant perceived as supportive for her work and role demands. Likert based scoring was used and scores summed such that higher scoring for each participant meant less social support and vice versa. The frequency of contact is measured by a 1 to 4 point likert scale from never or no support to very often or full support within the work environment and or the home environment. The scores are summed up and the higher the score, this

indicates higher social support. This is a three item questionnaire. Social support items in this study were scored by the respondent's answers as;

- 4 = very much
- 3 = somewhat
- 2 = a little
- 1 = not at all & don't have any such person

The score for each item were calculated by the multiplication of the weight score by the frequency in each category, then summed up and averaged by the total number of respondents (161) to get the mean score such that the higher the score, the greater social support received from either family, colleagues or nursing supervisor. The scoring for the levels of social support were the 25th and 75th percentile such that below the 25th percentile was poor support received, above the 25th percentile and below the 75th percentile as moderate support and nurses who scored above the 75th percentile rendered good support from the concerned persons.

Standardized questionnaire was obtained from the National Institute for Occupational Safety and Health, Cincinnati, Ohio, USA for Job stress which includes domains chosen for study in this research namely; social support, work characteristics, conflict at work and job satisfaction.

The publisher has allowed the use of the standardized questionnaire only for educational and research purposes and as such does not need written permission.

3.4 Data Analysis Procedure and Statistical Method

The Statistical software Minitab 13.1 was used to analyze data collected. Descriptive statistics was employed to display frequency, percentages, mean, standard deviations and spread of the variables under study of nurses at PMGH.

CHAPTER IV

RESULTS

There were 161 participants in this study after the exclusion criteria was applied and also excluded those nurses that had taken Public Servant's recreational paid leave of six (6) weeks at the time of data collection and those that had declined to participate in the survey when approached by the research team.

The subjects filled out self administered questionnaires and the results are discussed below.

4.1 Sociodemographics of nurses

In Table 1, 59% or half of the nurses were in the younger age group, which was less than 40 years old whilst the oldest nurse was 60 years old and past the retirement age of the Public Service General Orders of 55 years.

In terms of Marital status, 71.4% or an approximate three quarters of the studied subjects were married. Majority of the nurses had three to five children (89%) and the highest number of children was eight whilst 15% of nurses had no children.

Eighty eight percent of nurses were on paid positions and earned between K200.00 (US\$ 69) to K799.00 (US\$ 274) while the remaining senior nurses (11.2%) earned between K800.00 (US\$ 274) to K999.00 (US\$ 343) every two weeks.

Residential areas revealed that 38.5% of nurses lived in other places than those suburbs easily accessible by the hospital transport services, only 9.9% lived at the nursing single quarters provided by the hospital.

The Port Moresby General Hospital is located in the capital city of the Southern region of the country but there is near to equal spread of the place of origin of the nurses across the three regions of Southern, Highlands and Momase region. This would imply that the hospital employed equal opportunity policies and thus recruited nurses from other regions.

Table 1 Sociodemographics of Port Moresby General Hospital Nurses

Sociodemographic Characteristics	n = 161	Percentage
Age Group(yrs)		
23-29	24	14.9
30-39	71	44.1
40-49	43	26.7
50-59	21	13.0
60	2	1.2
mean = 39.07	SD = 8.76	max = 60 min = 23
Marital Status		
Married	115	71.4
Divorced, widowed	34	21.1
Single, not married	12	7.5
Number of Children		
0	12	7.5
1- 2	42	26.1
3-5	95	59.0
6-8	12	7.5
mean = 3.11	SD = 1.69	max = 8 min = 0
Gross Fortnight Income (kina)		
200-399	20	12.4
400-599	61	37.9
500- 799	62	38.5
800-999	18	11.2

Table 1 Sociodemographics of Port Moresby General Hospital Nurses (cont.)

Sociodemographic Characteristics	n = 161	Percentage
Residence		
3mile/Korobosea	23	14.3
Boroko/Four Mile	19	11.8
Gerehu	16	9.9
Morata/Waigani	25	15.5
Nursing Quarters	16	9.9
Other	62	38.5
Place of Origin		
Momase Region	39	24.2
Highlands Region	49	30.4
Southern Region	48	29.8
New Guinea Islands	25	15.5

4.2 Job Stress

Job stress was dichotomised into acute and chronic job stress and levels of severity ranged from mild, moderate and severe.

The score for each item were calculated by the multiplication of the score by the frequency in each category and divided by the total number of respondents to get the mean score such that the higher the score, the lower the job stress and vice versa.

Acute stress manifested by psychological complaints was defined as those experienced in the past 7 days revealing that the higher mean scores were reflected in the category where nurses felt as good as others and bothered by things that don't

normally bother the nurse, with mean scores 2.47 (SD 1.02) and 2.31 (SD1.04) respectively. These scores indicated less job stress.

Loss of appetite had a mean score of 1.85 (0.81) and not concentrating was 1.92 (0.86)) and couldn't shake off the blues had a mean score of 2.06 (0.86) where increased job stress led to loss of appetite as the mean score was the lowest of all the other items responded to by the subjects in the study.

Chronic stress which referred to the nurses' subjective health complaints which were mostly of physical origins revealed that nurses experienced less chronic job stress when it came to experiencing sleeping problems out of the seven items with the highest mean score in this category at 2.59 (SD 1.03) and followed by loss of appetite with a mean score of 2.39 (0.96).

Stomach ache problems had the next lower mean score at 2.32 (0.92), clammy damp hands had a mean score of 2.02 (SD 1.10) and also bothered by the heart beat category which had the lowest of the mean scores with a value of 2.00 (1.13) indicated higher chronic job stress.

Also in Table 2 relating to job stress, 83.9% of nurses denied experiencing any job accidents within the past six months whilst 39.75% of nurses never had any sick days within the immediate past month. More than half of them (60.25%) had one to nine days of sick leave and as such, the subjects interviewed had experienced job stress at the time of interview at the Port Moresby General hospital.

Table 2 The Percentage of Nurses by Job Stress

Subjective Health complaints	Percentage				
	rarely or none of times (< 1 day)	sometime (1-2 day)	occasionally (3-4 day)	all of the time (5-7 days)	
Acute stress in past week					
Bothered by things that don't usually bother me	42 (26.0)	42 (26.0)	42 (26.0)	42 (26.0)	
Mean= 2.31 SD= 1.04					
Loss of appetite	59 (36.7)	59 (36.7)	21 (13.0)	7 (4.4)	
Mean= 1.85 SD= 0.81					
Couldn't shake off blues	54 (28.0)	72 (44.7)	34 (21.1)	10 (6.2)	
Mean= 2.06 SD= 0.86					
felt as good as others	26 (16.2)	70 (43.5)	28 (17.4)	37 (23.0)	
Mean= 2.47 SD= 1.02					
not concentrating	57 (35.4)	69 (42.9)	26 (16.15)	9 (5.6)	
Mean= 1.92 SD= 0.86					
Chronic Stress within past month					
	never	occasionally	sometimes	fairly often	very often
clammy damp hands	70 (43.5)	35 (21.7)	44 (27.3)	6 (3.7)	6 (3.7)
Mean= 2.02 SD= 1.10					
dizzy spells	53 (32.9)	29 (18.0)	66 (41.0)	6 (3.7)	7 (4.4)
Mean= 2.29 SD= 1.10					
had stomach ache	39 (24.2)	40 (24.8)	77 (47.8)	2 (1.2)	3 (1.9)
Mean= 2.32 SD= 0.92					
bothered by heartbeat	77 (47.8)	27 (16.8)	43 (26.7)	8 (5.00)	6 (3.7)
Mean= 2.00 SD= 1.13					
illhealth affected work	44 (27.3)	29 (18.0)	72 (44.7)	9 (5.6)	7 (4.4)
Mean= 2.42 SD= 1.08					
loss of appetite	40 (24.8)	31 (19.3)	81 (50.3)	6 (3.7)	3 (1.9)
Mean= 2.39 SD= 0.96					
sleeping problem	35 (21.7)	(20) 12.42	89 (55.3)	10 (6.2)	7 (4.4)
Mean= 2.59 SD= 1.03					

Table 2 The percentage of nurses by job stress (cont.)

Job Stress	n	percentage
Smoking	28	17.0
Not smoking	133	82.6
Job Accidents within the past 6 months		
Yes	26	16.2
No	135	83.9
Sick Leave taken (days) within past 1 month		
0	64	39.75
1-9	97	60.25
Median = 2.00 Q₁ = 0.00 Q₃ = 5.00		

In Table 2 below, most respondents who had acute job stress at varying degrees of severity also experienced chronic job stress as shown by the results where 56.3% of the nurses suffered from acute and chronic stress at moderate levels, whilst on the other hand, 7.3% of respondents had severe acute stress and mild chronic stress at the time of the survey. 7.5% of the nurses on the other hand had mild acute stress and severe chronic stress. This implies that acute stress may be the manifestation of the outcome of chronic stress.

Table 3 Percentage of Acute Job Stress by Chronic Job Stress

Chronic job stress	Acute job stress		
	severe	moderate	mild
mild	3 (7.3)	3 (7.3)	17(41.5)
moderate	15(18.8)	45(56.3)	20(25.0)
severe	19(47.5)	18(45.6)	3(7.5)

4.3 Work Characteristics of nurses

In Table 4, the registered nurses with the PNG Nurses Council comprised the majority with 67.3% whilst most nurses had been serving in the nursing profession for more than five years. The longest service years given to any hospital or health setting by the respondents was 40 years and the average number of years was 17 years.

One fourth of the studied nurses had worked at PMGH for less than 6 years and the minimum number of years was 1 year and the average years of service given to the hospital was 12 years.

Majority of nurses 91.3% were permanent staff of the hospital thus paid against position numbers allocated by the Department of Personnel Management.

At the time of study, only 30% of nurses were working on permanent shifts whilst the remainder worked rotating shifts. However all the subjects of the study had rotated in shifts at one time or another before becoming permanent shift staff. The longest years of doing shift work were 40 years and the shortest was 1 year.

In terms of the rotation pattern followed, most of the nurses (93.8%) did the eight hour shift at the hospital whilst 6.2% did the non permanent twelve hour shift.

In a week, nurses changed shift more often (61.5%), the number of working hours per week for a nurse ranged from 40 hours to 59 hours as the most worked number of hours at 86.3% where the minimum was 8 hours and the maximum was 60 hours per week.

Most of the nurses (83.2%) did overtime every week of not more than 10 hours or less with the median score of 2.00.

More than 90% of the nurses who participated in the survey did not do other hours outside of the hospital especially in the private medical setting as depicted in Table 3 below.

Table 4 Work Characteristics of nurses at the Port Moresby General Hospital

Work Characteristics	N = 161	Percentage
General Job Information		
Current Job Title		
Registered nursing Officer	109	67.3
Practical nurse	52	32.1
Years of Nursing		
3-5	11	6.8
6-10	34	21.1
11-20	66	41.0
21-30	35	21.7
31-40	15	9.3
Mean = 17.04	SD = 9.03	Max = 40
		Min = 3
Nursing Years at PMGH		
1-5	40	24.8
6-10	45	28.0
11-20	47	29.2
21-30	25	15.5
31-40	4	2.5
Mean = 12.21	SD = 8.28	Max = 40
		Min = 1
Job Description		
Permanent Nurse	147	91.3
Nonpermanent Nurse	14	8.7
Work shift Description		
Permanent Shift	48	29.8
Rotating Shift	113	70.2

Table 4 Work Characteristics of nurses at the Port Moresby General Hospital (cont.)

	N = 161	Percentage
Years doing Shift Work		
1- 5	48	29.8
6-10	42	26.1
11-20	45	28.0
21-30	19	11.8
31-40	7	4.4
Mean = 11.64 SD = 8.75 Max = 40 Min = 1		
Rotation Pattern Followed		
8 Hour Shift		
Day to evening to night	77	47.8
Night to evening to day	7	4.4
No set pattern	67	41.6
12 hour Shift		
Day to night	6	3.7
Night to day	4	2.5
Shift changing per week		
Change of shift per week	99	61.5
No change of shift per week	62	38.5
Hours of work per week		
≤ 9	13	8.1
10-19	3	1.9
20-29	1	0.6
30-39	2	1.2
40-49	67	41.6
50-59	72	44.7
60-69	3	1.9
Mean= 45.52 SD= 14.24 Max= 60 Min= 8		

Table 4 Work Characteristics of nurses at the Port Moresby General Hospital (cont.)

	N = 161	Percentage
Hours of overtime per week		
0-10	134	83.2
11-20	19	11.8
21-30	6	3.7
31-40	2	1.2
Median = 2.00 Q₁ = 0.00 Q₃ = 8.00		
Hours in any other job		
0	149	92.6
2-5	4	2.48
6-9	5	3.11
10-12	3	1.86

4.4 Social Support rendered to nurses

The score for each item were calculated by the multiplication of the weight score by the frequency in each category, then summed up and averaged by the total number of respondents (161) to get the mean score such that the higher the score, the greater social support received from either family, colleagues or nursing supervisors.

In Table 5, in the social support category, the mean scores for the family, relatives and friends made work life easier for the nurse was 2.11 (SD1.10) and the easiest support persons to talk to was 2.29 (SD1.17), relied upon when the job got tough was at a mean score of 2.00 (SD1.03) and were always available to listen to the nurses' personal problems with the mean score of 2.22 (SD1.13). These mean scores were the highest in the family category and revealed the nurses increased preference to draw upon their family for social support.

When compared to their colleagues and nursing supervisors it was found that the nursing supervisors were the least persons at work that the nurses turned to for social support and networking while the only higher mean score was where the nurses relied on most (nursing supervisor) when the job got tough at 1.98 (1.00) but the scores were generally still greater than the average.

Table 5 Level of support provided by nursing supervisor, coworkers and family to nurses at Port Moresby General Hospital

Social Support	Support Persons		
	Supervisor	Coworkers	Family
Making work life easier for nurse			
very much	41 (25.5)	45 (28.0)	86 (53.4)
somewhat	49 (30.4)	43 (26.7)	27 (16.8)
a little	45 (28.0)	50 (31.1)	28 (17.4)
not at all	26 (16.2)	23 (14.3)	20 (12.4)
Mean (SD)	1.65 (0.79)	1.68 (0.84)	2.11 (1.10)
Easiest person to talk to			
very much	54 (33.5)	53 (32.9)	91 (56.5)
somewhat	39 (24.2)	48 (29.8)	33 (20.0)
a little	47 (29.2)	45 (28.0)	30 (18.6)
not at all	21 (13.0)	15 (9.3)	7 (4.4)
Mean (SD)	1.78 (0.85)	1.86 (0.98)	2.29 (1.17)
People relied on most when job gets tough			
very much	61 (37.9)	52 (32.3)	77 (47.8)
somewhat	44 (27.3)	44 (27.3)	32 (19.9)
a little	41 (25.5)	54 (33.6)	38 (23.6)
not at all	15 (9.3)	11 (6.8)	14 (8.7)
Mean (SD)	1.98 (1.00)	1.85 (0.90)	2.00 (1.03)
How much they listen to personal problems			
very much	45 (28.0)	33 (20.5)	91 (56.5)
somewhat	36 (22.4)	45 (28.0)	26 (16.2)
a little	55 (34.2)	62 (38.5)	32 (19.9)
not at all	25 (15.5)	21 (13.1)	12 (7.5)
Mean (SD)	1.62 (0.85)	1.56 (0.78)	2.22 (1.13)

4.5 Conflict at work

The score for each item were calculated by the multiplication of the weight score by the frequency in each category and averaged by the total number of respondents to get the mean score such that the higher the score, the less conflict at work and vice versa for the negated stem questions.

Generally there was less conflict at work as perceived by the nurses such that within the group there was good team work, group members were friendly and agreeable, they supported each other's ideas, there was cooperation and harmony and apparently low clashes existed within the subgroups at the mean scores of 3.76 (SD1.21), 3.60 (SD1.33), 3.48 (SD1.16), 3.40 (SD1.19) and 3.31 (1.38) respectively.

Only disagreements on job tasks in group and differed opinions within group members had lower mean scores but they were still higher than the average mean scores at 2.98 (SD1.26) and 2.53 (SD1.17) respectively.

In Table 6, conflict at work between the nurse's group and other groups revealed a general uniformity across the different scenarios of work situations compared to within groups where the mean scores were higher than the average weighted scores for every item.

They had less disputes and disagreements with other groups, respondents did not hold back information from other groups, harmony existed within groups, more mutual assistance displayed, cooperation all round the group and with other groups as well as less personality clashes between groups and other groups and less problems created by other groups for the nurse's group at 3.21 (SD1.39), 3.36 (SD1.32), 3.24 (SD 1.30), 3.01(SD1.27), 3.48 (SD1.25), 3.25 (SD1.38) and 3.47 (SD1.26) respectively.

Table 6 Percentage of the nurses according to the conflict at work domain

Statement	Strongly Disagree	Mod. Disagree	Neither Agree nor disagree	Mod. Agree	Strongly Agree
Cooperation & harmony in group Mean = 3.40 SD = 1.19	12 (7.5)	24 (14.9)	45 (28.0)	47(29.2)	33 (20.5)
Disagree on job tasks in group Mean = 2.98 SD = 1.26	26 (16.1)	28 (17.4)	44(27.3)	43(26.7)	20 (12.42)
Difference of opinion with members of group Mean = 2.53 SD = 1.17	19 (11.8)	25 (15.5)	54 (28.6)	17(33.5)	17 (10.6)
Group support each other's ideas Mean = 3.48 SD = 1.16	11 (6.8)	21 (13.0)	41 (25.5)	55(34.2)	33 (20.5)
Clashes within subgroups in group Mean = 3.31 SD = 1.38	48 (29.8)	24 (14.9)	35 (21.7)	38(23.6)	16 (9.9)
Group members are friendly and agreeable Mean = 3.60 SD = 1.33	17(10.6)	20 (12.4)	26 (16.1)	46(28.6)	52 (32.3)
Teamwork in group Mean = 3.76 SD = 1.21	9 (5.6)	21 (13.0)	23 (14.3)	54(33.5)	54(33.5)
Disputes & disagrees with other groups Mean = 3.21 SD = 1.39	44 (27.3)	23 (14.3)	36 (22.4)	39(24.2)	19 (11.8)
Other groups hold back information for group tasks completion Mean = 3.36 SD = 1.32	42 (26.1)	34 (21.1)	44 (27.3)	22(13.7)	19 (11.8)

Table 6 Percentage of the Nurses according to the conflict at work domain (cont.)

Statement	Strongly Disagree	Mod. Disagree	Neither Agree nor disagree	Mod. Agree	Strongly Agree
Harmony between groups to attain hospital goals Mean= 3.24 SD= 1.30	19 (11.8)	32 (19.9)	32 (19.9)	47(29.2)	31 (19.3)
No mutual assistance between groups Mean= 3.01 SD= 1.27	27 (16.8)	37 (23.0)	42 (26.1)	35(21.7)	20 (12.4)
cooperation between group & other groups Mean=3.48 SD= 1.25	14(8.7)	24(14.9)	32 (19.9)	53(32.9)	38 (23.6)
personality clashes between groups & other groups Mean= 3.25 SD= 1.38	46 (28.6)	24 (14.9)	33 (20.5)	41(25.5)	17 (10.6)
Other groups create problem for group Mean= 3.47 SD= 1.26	44 (27.3)	36 (22.4)	45 (28.0)	23 (14.0)	13 (8.1)

4.6 Job Satisfaction Domain

Those respondents that scored less than the 25th percentile were categorised as having low job satisfaction, more than 25th percentile and less than 75th percentile were assigned to moderate job satisfaction.

Scores more than the 75th percentile when summed were assigned to high job satisfaction as depicted in Table 7, such that low score meant high job dissatisfaction.

The nurses in this domain had a mean score of 2.09 (SD 1) which was the highest in the overall job satisfaction category implying that the job satisfaction of nurses was average, midway between somewhat satisfied to not too satisfied.

The other categories also bordered on average scores implying the nurses' uncertainty surrounding job satisfaction where the categories of now knows situation, wants to take the same job, if free to take job, what choice would be made and if a friend was interested in a nursing job, what advice would the nurse give had mean scores at 1.73 , 1.69 and 1.73 respectively.

Table 7 Percentage of the nurses by the Job Satisfaction Domain

Statement	Job satisfaction			
	No hesitation to take same job	Have second thoughts	Definitely not take job	
Now knows situation, can take same job? mean= 1.73 SD= 0.71	67 (41.6)	70 (43.5)	24 (14.9)	
	Take the same job	Take different job	Not want to work	
If free to take job, what choice to make? mean= 1.69 SD= 0.61	63 (39.0)	85 (52.8)	13 (8.0)	
	Strongly recommend it	Doubt recommending	Advise against it	
If a friend interested in nursing job, what advice to give? mean= 1.73 SD= 0.76	74 (45.96)	56 (34.78)	31 (19.25)	
	very satisfied	somewhat satisfied	not too satisfied	not at all satisfied
Overall, satisfied with the job? mean = 2.09 SD= 1.00	59 (36.6)	43 (26.7)	45 (28.0)	14 (8.7)

4.7 Percentage of nurses by Domain and Job stress

In Table 8 below, the current job title revealed that the practical and registered nurses suffered more from moderate levels of acute job stress and slightly more than 50% also experienced moderate acute job stress for having worked at the PMGH between six to twenty years.

As for job description, 50.3% or most of the permanent nurses expressed moderate levels of acute job stress as compared to the minority of temporary nurses at the time of interview. Nurses who changed shift as well as those who did not experienced moderate levels of acute job stress and also rotating shifts had moderate levels of acute job stress. Nurses having to work more than thirty one hours per week with a maximum of sixty hours resulted in moderate levels of acute job stress.

Overtime hours per week of between one to ten hours had nurses experiencing moderate levels of job stress as well and there was moderate levels of social support offered for the majority of nurses who fell between mild to moderate levels of acute job stress.

As for the conflict at work domain, nurses who had moderate levels of conflict at work also had moderate levels of acute job stress and lastly for job satisfaction domain, most nurses who expressed moderate levels of job satisfaction were experiencing moderate levels of acute job stress.

Table 8 Percentage of nurses by each domain and job stress

Statement	Acute Job stress		
	mild	moderate	severe
Current job title			
Registered nurse	28 (25.7)	57 (52.3)	24 (22.0)
Practical nurse	12 (23.1)	27 (51.9)	13 (25.0)
Nurse years(PMGH)			
1-5	10 (25.0)	19 (47.5)	11 (27.5)
6-10	10 (22.2)	26 (57.8)	9 (20.0)
11-20	11 (23.4)	26 (55.3)	10 (21.3)
21-30	7 (28.0)	12 (48.0)	6 (24.0)
31-40	2 (50.0)	1 (25.0)	1 (25.0)
Job Description			
Permanent nurse	37 (25.2)	74 (50.3)	36 (24.5)
Temporary nurse	3 (21.4)	10 (71.4)	1 (7.1)
Work shift Description			
Permanent	10 (20.8)	31 (64.6)	7 (14.6)
Rotating	30 (26.6)	53 (46.9)	30 (26.6)
Change of Shift per week			
No change	17 (27.4)	33 (53.2)	12 (19.4)
Change	23(23.2)	51 (51.5)	25 (25.3)
Hours of work per week			
8-30	7 (41.2)	6 (35.3)	4 (23.5)
31-60	33 (22.9)	78 (54.2)	33 (22.9)
Overtime hours per week			
0	20 (27.8)	38 (52.8)	14 (19.4)
1-10	12 (19.4)	35 (56.5)	15 (24.2)
11-20	7 (36.8)	8 (42.1)	4 (21.5)
21-32	1 (12.5)	3 (37.5)	4 (50.0)

Table 8 Percentage of nurses by each domain and job stress (cont.)

Statement	Acute Job stress		
	mild	moderate	severe
Social Support			
Good	14 (30.4)	24 (52.2)	8 (17.4)
Moderate	20 (25.6)	44 (56.4)	14 (18.0)
Poor	6 (16.2)	16 (43.2)	15 (40.5)
Conflict at work			
High	4 (9.8)	26 (63.4)	11 (26.8)
Moderate	24 (27.9)	41 (47.7)	21 (24.4)
Low	12 (35.3)	17 (50.0)	5 (14.7)
Job satisfaction			
High	22 (53.4)	18 (42.9)	2 (4.8)
Moderate	15 (17.1)	54 (61.4)	19 (21.6)
Low	3 (9.7)	12 (38.7)	16 (51.6)

In Table 9 below, the job description category, half of the permanent and nonpermanent nurses suffered from moderate chronic job stress, for the work shift description, permanent and rotating shift nurses also experienced moderate levels of chronic job stress.

Work shift description revealed that both permanent and rotating staff nurses suffered from moderate acute and chronic job stress.

In the rotation pattern category where the nurses did the eight hour shift more than half of them suffered from moderate levels of chronic job stress. With regards to change of shift per week, nurses who changed shift suffered from moderate chronic job stress and having worked at least 31 to 60 hours per week exposed them as well to moderate chronic job stress.

As for overtime hours per week, nurses who did 1 to 10 hours suffered from moderate chronic job stress.

For social support there was moderate levels of social support offered for the majority of nurses who fell between mild to severe levels of chronic job stress.

As for the conflict at work domain, nurses who had moderate levels of conflict at work also had moderate levels of chronic job stress and lastly for job satisfaction domain, most nurses who expressed moderate levels of job satisfaction were experiencing moderate levels of chronic job stress in parallel to that.

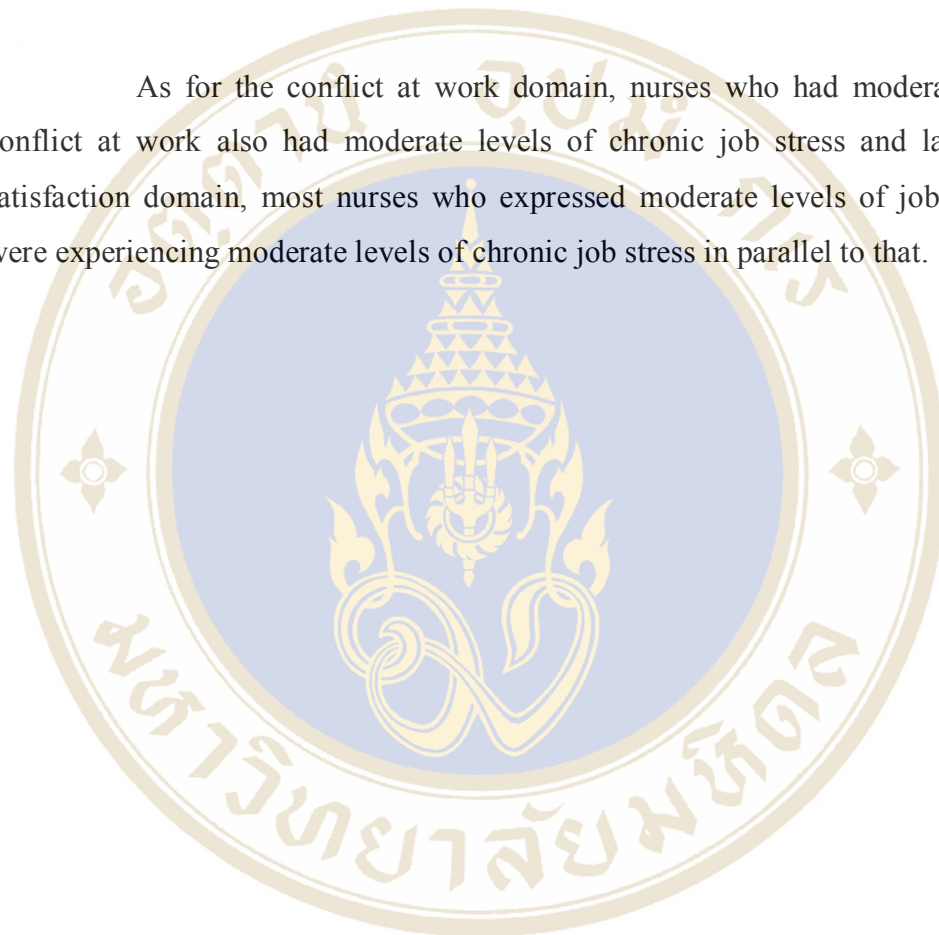


Table 9 Percentage of nurses by each domain and chronic job stress

Statement	Chronic Job stress		
	mild	moderate	severe
Current Job title	29 (26.6)	53 (48.6)	27 (24.8)
Registered nurse	12 (23.1)	27 (51.9)	13 (25.0)
Practical nurse			
Nurse years (PMGH)			
1-5	10 (25.0)	21 (52.5)	9 (22.5)
6-10	8 (17.8)	24 (53.3)	13 (28.9)
11-20	12 (25.5)	22 (46.81)	13 (27.7)
21-30	9 (36.0)	12 (48.0)	4 (16.0)
31-40	2 (50.0)	1 (25.0)	1 (25.0)
Job description			
Permanent nurse	37 (25.1)	73 (49.7)	37 (25.2)
Nonpermanent nurse	4 (28.6)	7 (50.0)	3 (21.4)
Work Shift Description			
Permanent	13 (27.1)	27 (56.3)	8 (16.7)
Rotating	28 (24.8)	53 (46.9)	32 (28.3)
Changing of Shift per week			
No change	21 (33.9)	33 (53.2)	8 (12.9)
Change	20 (20.2)	47(47.5)	32 (32.3)
Hours of work per week			
8-30	4 (23.5)	10 (58.8)	3 (17.7)
31-60	37 (25.7)	70 (48.6)	37 (25.7)
Social Support			
Good	14 (30.4)	24 (52.2)	8 (17.4)
Moderate	20 (25.6)	44 (56.4)	14 (18.0)
Poor	6 (16.2)	16 (43.2)	15 (40.5)

Table 9 Percentage of nurses by each domain and chronic job stress (cont.)

Statement	Chronic Job stress		
	mild	moderate	severe
Conflict at work			
High	4 (9.8)	26 (63.4)	11 (26.8)
Moderate	24 (27.9)	41 (47.7)	21 (24.4)
Low	12 (35.3)	17 (50.0)	5 (14.7)
Job satisfaction			
High	16 (38.1)	22 (52.4)	4 (9.5)
Moderate	20 (22.7)	44 (50.0)	24 (27.3)
Low	5 (16.1)	14 (45.2)	12 (38.7)

CHAPTER V

DISCUSSION

The present study was to describe the pattern of the level of job stress as acute and or chronic and the severity as mild, moderate and severe as well as describe work characteristics, social support from family, nursing supervisor and colleagues, conflict at work and job satisfaction. The study also attempted to describe if there were any antecedents contributing to job stress among the 161 respondents surveyed at the

5.1 Job Stress among nurses

The study of acute and chronic job stress among nurses revealed that majority of nurses experienced moderate levels of job stress in Papua New Guinea and that acute job stress was a manifestation of the outcome of chronic job stress in the population based study. Since the general health questionnaire was used as a proxy to measure job stress and that there was no arbitrary cut off point suggested by the NIOSH, this study attempted to describe the different levels of severity of job stress at an acute or chronic level using the first and third quartile range to deduce the results in this study.

The nurses that comprised of registered nursing officers and practical nurses experienced physiological and physical symptoms of job stress and this is consistent with prior international studies linking job stress to people oriented professions such as health. From the results it can be seen that social support seemed to be uniform among the nurses where despite the level of moderate to good support given, nurses ended up with job stress. Since majority of the nurses received most support from the family this may explain why that support did not extend to the work environment.

In view of job accidents within the past month, this was found to be favourable with fewer nurses prone to job accidents within the past six months at the time of interview.

The presence of acute and chronic job stress as measured in the general health section is consistent with other research done on nurses that reveal increased physical and psychological manifestations^{56,57}. It is interesting to note that PNG nurse had experienced acute stress and chronic job stress with recurrent episodes as seen by the number of respondents who had acute job stress and chronic job stress. Is there a strong possibility that these subjects are experiencing end stage burnout? Since this study did not address burn out it is difficult to gauge the level and chronicity.

Work characteristics reveal that some nurses in the physically active age group of 30 to 39 years experienced stress from shift changes, nurses who were permanent experienced more stress than their non permanent counterparts and this would be attributed to taking on more responsibilities for their respective sections as seen in the conflict at work category.

In the conceptualization of coping pattern, social support is used as part of emotion management. The belief that there are people such as family members, colleagues and nursing supervisors who are available and care about an individual so as to go out of their way to help if help were needed is the key factor in the efficacy of social support and in promoting physical and psychological health.

Bowlby popular in childhood psychiatry had his works in the form of the attachment theory (1988) that being loved and valued is central in the concept of social support and is profoundly influenced by childhood affective bonding exists beyond simple care giving and emphasises acceptance, affirmation of self worth and acceptance and its significance to an adult's perceived sense of social support. Low social support has been associated with excessive worry, self preoccupation and relative difficulty with focusing attention on a particular task⁵⁸.

Several Studies have also confirmed that high physical demands such as overtime, shift work and changes and where physical work exceeds the number of hours for the shift can produce job stress and are also related to heart disease⁵⁹. Bullying management style by superiors is also detrimental to worker's health⁶⁰. Other studies found that poor relationships between the superior and subordinates contributed to the level of stress.

Repetti found that the workers experienced more negative moods on days when they had distressing interactions with their superiors and coworkers⁶¹. In this study, nurses developed a tendency to lean more towards family members for emotional and instrumental support as compared to supervisors and colleagues at work.

In the subjective health complaints used interchangeably with general health information in this study, behavioural issues as a result of job stress such as smoking was not found in the majority of nurses. Another area to note was that nurses struggled with self esteem as part of acute stress whilst sleeping problems was higher among chronic job stress respondents as well. Disturbed sleep patterns are becoming an area of fervent research where researchers have found significant associations between shift work, sleep patterns and mental health.

Holt in 1993 found that shift work as seen in this study can lead to a variety of physical complaints including sleep and gastrointestinal problems and can also interfere with family life as revealed by the significant association between married women having severe job stress compared to single women⁶².

Olaleye in 2002 found in her study among nurses working in Government hospitals that there were increased levels of job stress affecting their health and coping ability⁶³.

Job stress has been found to be negatively related to job satisfaction in nursing, Achalu in 1995 found that nurses who experienced high levels of stress were less satisfied with their career, had higher absenteeism rate and significantly less career commitment⁶⁴.

As seen in this study, the overall job satisfaction of the subjects of study was somewhat satisfying and not very satisfied despite been able to take the same job, recommend a nursing career to their friends and choosing the same job again.

Wong et al discovered that a third of Chinese nurses experienced high levels of job stress due work characteristics like shift work, over time, inadequate staffing, job dissatisfaction and frustration of all kinds, this adversely affected their physical and mental health. Nurses who experience job stress cannot give optimal care to the patients leading to slow recovery due to acting under duress⁶⁵.

Comparison with other countries describe the same pattern of distribution with regards to Job stress, work characteristics, and social support though cultural issues may need to be considered when discussing the findings.

Locally, Papua New Guinea is a Melanesian society with multicultural diversities of approximately 1000 studied and documented cultures and with 880 languages, where the family and its extended members form an intricate part of the networking and support system as compared to western societies. The advantages of living and working in this unique cultural setting where social anthropologists have over the years concluded that Papua New Guinea was a land of 'happy people' highlights social networking as a very important part of an average Papua New Guinean's life.

This could be one of the possible reasons why social support as found in this study revealed family members as the most important support person as perceived by the nurse.

CHAPTER VI

CONCLUSION AND RECOMMENDATION

6.1 Conclusion

This study was a cross sectional descriptive study that was conducted during January 2009 to May 2009 and was aimed at describing the distribution of job stress, work characteristics and social support among Papua New Guinean nurses.

Self reported questionnaires were distributed and collected by fourth year medical students, sociodemographic which is a universal variable was also included in the questionnaire. The data was collected from one hundred and sixty one nurses of the 315 actively employed nurses and descriptive statistics was used to describe the data.

In line with the objectives, findings from the study showed that most nurses suffered from both acute and chronic job stress at moderate levels respectively, social support was at moderate levels and offered mostly by the family is consistent with past research and considered important to mitigate the impact of acute job stress that leads to eventual chronic job stress.

It can be concluded that half of the nurses or 56.3% experienced moderate levels of acute and chronic job stress. Work characteristics revealed that the mean number of years worked was 17 years and ranged from a minimum of one to forty years and 91.3% were permanent staff on government payroll and 93.8% worked the eight hour shift. Nurses in a normal working week worked at the most 40 to 59 hours and 83.2% of nurses clocked up overtime hours not exceeding 10 hours. In the social

support category, moderate support was given to the nurses from mostly family members as compared to colleagues and nursing supervisors.

As for the conflict at work category, moderate levels of conflict existed between groups and within groups as perceived by the nurses and lastly, job satisfaction bordered on somewhat satisfied to not so satisfied.

Overall job satisfaction bordered upon uncertainty for most of the respondents.

NIOSH where the questionnaire used in this study was derived from have done extensive literature reviews to choose important dimensions known to contribute to job stress and as such this was also consistent with results gathered in the various domains such as how shift work, shift pattern, overtime performed, the number of nursing years and the change of shifts stress upon the pattern and direction of job stress at varying levels and severity.

Work characteristics are an important independent variable whose results highlighted its importance in the progression of moderate levels of acute and chronic job stress.

6.2 Recommendations

To ensure that efficient nursing care is given to the patients, the Health Department and the National Government should collaborate with the hospital boards to help reduce the sources of job stress in the nurses.

This was seen in the work characteristics results as well as to improve relations and support from the nursing supervisor so as to improve job satisfaction as most social support came from the family. It was revealed that this was not seen to be beneficial in the work environment with nurses still experiencing moderate levels of job stress despite moderate support offered by family in the home environment.

Literature review has consistently pointed out that the most effective way to deal with stress is to tackle the problem at several levels and as such it would be beneficial to study work characteristics, job satisfaction, conflict at work and social support as a modifier to address job stress in different scenarios.

Since job stress is evident in this population studied, suggestions would include the introduction of stress intervention programmes in nursing colleges before commencement of clinical nursing, where nurses should be trained with regards to their general health well being, introduce strategies aimed at recognising the signs of impending stress and act in a timely fashion to prevent eventual burn out.

Highlight the importance of developing empathy for the sick and dying instead of sympathy prevents emotional exhaustion that contributes to psychological ill health since the hospital and health community workers work in a very complex and demanding environment with regards to patient care.

In-service training and workshops targeted at middle management should be employed to help nursing supervisors deal effectively with their subordinates as their support lacked greatly in this study. Nurses should also receive regular up

skilling and be sent to attend courses that deal with stress management, interpersonal relationships and crisis interventions.

It is hoped that when nurses are given adequate support by their employers or when their needs are fully met then there is less tension, increased job satisfaction and less job stress so that patients will receive optimal health care from the nurses.

It would also prove interesting to note the departments that the nurses worked in to help identify most stressed out areas and deal with each section effectively and separately as mentioned. As is common in many developing countries, funding is limited and diverted to 'essential and much needed services', therefore identified programs need skilled experts to tailor these programs to suit the budget cost effectively.

The independent variables used in this study remain useful and identified by researchers as antecedents to job stress and must be considered in preferably a longitudinal study at some stage to assess the impact of job stress in all of the nineteen provincial hospitals in Papua New Guinea.

Job stress must be taken as seriously as smoking within the hospital and dealt with in a timely and cost efficient manner to prevent high turnover, compensation claims, and frequent sick leave and biopsychosocial repercussions on an employee.

This study emphasizes the need to accept Mental Health as an important discipline that should be integrated into each organization's Health and Safety Policy for nurses, police personnel, teachers, social workers and other people oriented professions in Papua New Guinea.

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APPENDIX A

QUESTIONNAIRES

Questionnaire Part 1: Back Ground Information

We want to know about your work environment and how you relate to it from day to day. Your answers are needed and PLEASE DO NOT PUT YOUR NAME ON ANY OF THE FORMS PROVIDED. The answers you provide are CONFIDENTIAL and all information provided by you will be combined for statistical purposes for the research.

Thank you for your time, cooperation and support

1. How old were you on your last birthday?
YEARS
2. What is your marital status?
1 = Married 2 = Single, never married 3 = Single, divorced
4 = Single, widowed
3. How many children do you have living at home? {Please skip to Question 4 if you do not have any children....}
4. What is the level of Gross Income you earn every fortnight?
1 = K200 – K399 2 = K400 – K599
3 = K600 – K799 4 = K800 – K999
5. Residence (please write suburb)
6. Your place of Origin
1 = Momase Region 2 = Highlands Region
3 = Southern Region 4 = New Guinea Islands

Questionnaire Part 2: General Job Information

Dear participant, this is General Job information questionnaire that is supposed to help us understand your work times and status of employment. If you need assistance relating to the questions, please do not hesitate to inform us, thank you

7. What is your current job title?
 1 = Registered nursing Officer 2 = Registered Nursing Aid
 3 = Other
8. How long have you worked on this job as a nurse?
 YEARS MONTHS
9. How long have you worked in Port Moresby General Hospital?
 YEARS MONTHS
10. Select the most appropriate description of your job situation?
 1= full time permanent employee 2= full time temporary employee
 3= part time permanent employee 4= Casual 5= other
11. Select the description that comes closest to your WORK SHIFT?
 1= Rotating eight (8) hour shift 2= Rotating twelve (12) hour shift
 3= Permanent Day shift 4= Permanent evening shift
 5= Permanent night shift 6= other
12. How long have you worked the shift that you indicated above?
 YEARS MONTHS
13. IF you work on a rotating shift, what ROTATION PATTERN do you follow?
 EIGHT HOUR SHIFT TWELVE HOUR SHIFT
 1= day to evening to night 4= day to night
 2= night to evening to day 5= night to day
 3= no set pattern 6= no set pattern

21. The members of my group are supportive of each other's ideas.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
22. There are clashes between subgroups within my group.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
23. There is friendliness & agreement among the members of my group.
- 1= strongly disagree 2= moderately disagree
3= neither agree nor disagree 4= moderately agree 5= strongly agree
24. Everybody works together as a team in my group, and there is a feeling of 'we'
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
25. There are disputes and disagreements between my group and other groups.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
26. Other groups hold back information that is necessary for completion of our group tasks.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree

27. The relationship between my group and other groups is harmonious in attaining the overall organizational goals.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
28. There is lack of mutual assistance between my groups and other groups.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
29. There is cooperation between my group and other groups.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
30. There are personality clashes between my group and other groups.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree
31. Other groups create problems for my group.
- 1= strongly disagree 2= moderately disagree 3= neither agree nor disagree
4= moderately agree 5= strongly agree

Questionnaire Part 4: Job Satisfaction

In this next set of Questionnaire, we would like you to think about the type of work you do in your job, please do not hesitate to ask for assistance if you remain unclear about some terms used, thank you

32. Knowing what you know now, if you had to decide all over again whether to take the type of job you now have, what would you decide?
- I would.....
- [1] = decide without hesitation to take the same job
[2] = have some second thoughts
[3]= decide definitely NOT to take this kind of job

33. If you were free right now to go into any type of job you wanted, what would your choice be?
- I would.....
- [1]= take the same job [2] = take a different job
- [3] = Not want to work
34. If a friend of yours told you that he/she was interested in working in a job like yours, what would you
- Tell him/her? I would.....
- [1]= strongly recommend it
- [2] = have doubts about recommending it
- [3] = advise against it
35. All in all, how satisfied would you be with your job?
- [1] = very satisfied [2] = somewhat satisfied
- [3] = not too satisfied [4] = not at all satisfied

Questionnaire Part 5: General Health Information

Thank you for proceeding this far, this next set of questions asks about general health information and other health information that do not necessarily relate to severe physical illness but are things that people experience in their day to day lives.

36. On an average day, how many of each of the following do you smoke?
- 1 = cigarettes 2= cigars 3= pipefuls of tobacco
- 4= never smoke
37. During the past 6 months, have you had any on the job accidents?
- [1] = yes [2] = no

38. During the past month, about how many days of sick leave did you take?
(Please write number in the box, and 0 if no sick days were taken, thank you)
- []

**QUESTIONS RELATING TO ACUTE JOB STRESS ARE BELOW;
During The Past Week, How Often Did You Experience The Following?**

39. I was bothered by things that don't usually bother me.
[0] = rarely or none of the time (less than 1 day)
[1] = some of the time (1 to 2 days) []
[2] = occasionally or a moderate amount of time (3 to 4 days)
[3] = most or all of the time (5 to 7 days)
40. I did not feel like eating, my appetite was poor.
[0] = rarely or none of the time (less than 1 day)
[1] = some of the time (1 to 2 days) []
[2] = occasionally or a moderate amount of time (3 to 4 days)
[3] = most or all of the time (5 to 7 days)
41. I felt that I could not shake off the blues or feeling down even with help from my family and friends.
[0] = rarely or none of the time (less than 1 day)
[1] = some of the time (1 to 2 days) []
[2] = occasionally or a moderate amount of time (3 to 4 days)
[3] = most or all of the time (5 to 7 days)
42. I felt that I was just as good as other people.
[0] = rarely or none of the time (less than 1 day)
[1] = some of the time (1 to 2 days) []
[2] = occasionally or a moderate amount of time (3 to 4 days)
[3] = most or all of the time (5 to 7 days)

43. I had trouble keeping my mind on what I was doing?
 [0] = rarely or none of the time(less than 1 day)
 [1] = some of the time (1 to 2 days)
 [2] = occasionally or a moderate amount of time (3 to 4 days)
 [3] = most or all of the time (5 to 7 days)

**QUESTIONS RELATING TO CHRONIC JOB STRESS ARE BELOW;
 How Often Have You Experienced Any Of The Following During The Past
 Month?**

44. Your hands sweated so that you felt damp and clammy
 [1] = never [2] = occasionally
 [3] = sometimes [4] = fairly often [5] = very often
45. You had spells of dizziness
 [1] = never [2] = occasionally [3] = sometimes
 [4] = fairly often [5] = very often
46. You were bothered by having an upset stomach or stomach ache
 [1] = never [2] = occasionally [3] = sometimes
 [4] = fairly often [5] = very often
47. You were bothered by your heart beating
 [1] = never [2] = occasionally
 [3] = sometimes [4] = fairly often [5] = very often
48. Your health was not good which affected your work.
 [1] = never [2] = occasionally
 [3] = sometimes [4] = fairly often [5] = very often
49. You had a loss of appetite
 [1] = never [2] = occasionally
 [3] = sometimes [4] = fairly often [5] = very often

50. You had trouble sleeping at night.

[1] = never

[2] = occasionally

[3] = sometimes

[4] = fairly often

[5] = very often

Questionnaire Part 6: Social Support

This set of questions relate to how much each of these people go out of their way to do things to **make your work life easier for you?**

51. Your immediate nursing supervisor (boss)

[1] = very much

[2] = somewhat

[3] = a little

[4] = not at all

[5] = don't have any such person

52. Other people at work

[1] = very much

[2] = somewhat

[3] = a little

[4] = not at all

[5] = don't have any such person

53. Your spouse, friends and relatives

[1] = very much

[2] = somewhat

[3] = a little

[4] = not at all

[5] = don't have any such person

How easy is it to talk to each of the following people?

54. Your immediate nursing supervisor (boss).

[1] = very much

[2] = somewhat

[3] = a little

[4] = not at all

[5] = don't have any such person

55. Other people at work.

[1] = very much

[2] = somewhat

[3] = a little

[4] = not at all

[5] = don't have any such person

56. Your spouse, friends and relatives

[1] = very much

[2] = somewhat

[3] = a little

[4] = not at all

[5] = don't have any such person

How Much Can Each Of These People Be Relied On When Things Get Tough At Work?

57. Your immediate nursing supervisor (boss).
 [1] = very much [2] = somewhat [3] = a little
 [4] = not at all [5] = don't have any such person

58. Other people at work.
 [1] = very much [2] = somewhat [3] = a little
 [4] = not at all [5] = don't have any such person

59. Your spouse, friends and relatives
 [1] = very much [2] = somewhat [3] = a little
 [4] = not at all [5] = don't have any such person

How Much Can each of the following willing to listen to your personal problems?

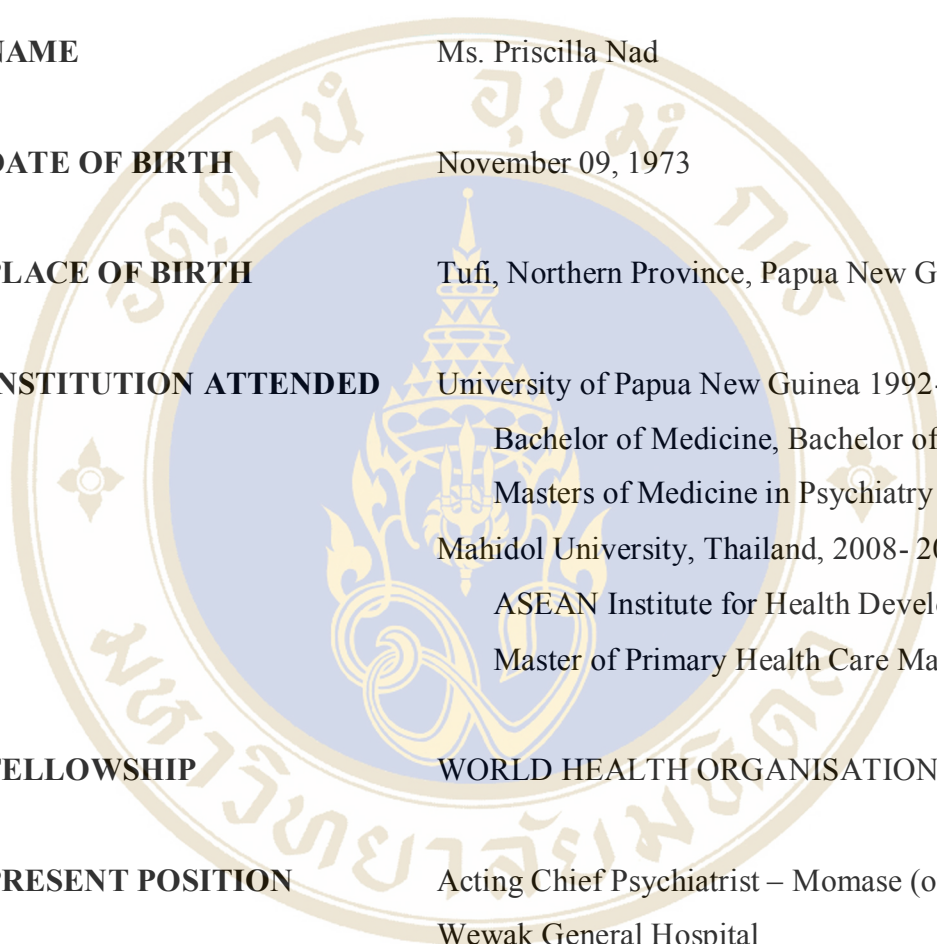
60. Your immediate nursing supervisor (boss).
 [1] = very much [2] = somewhat [3] = a little
 [4] = not at all [5] = don't have any such person

61. Other people at work.
 [1] = very much [2] = somewhat [3] = a little
 [4] = not at all [5] = don't have any such person

62. Your spouse, friends and relatives
 [1] = very much [2] = somewhat [3] = a little
 [4] = not at all [5] = don't have any such person

THANKYOU VERY MUCH

BIOGRAPHY



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INSTITUTION ATTENDED	University of Papua New Guinea 1992-2006 Bachelor of Medicine, Bachelor of Surgery Masters of Medicine in Psychiatry Mahidol University, Thailand, 2008- 2009 ASEAN Institute for Health Development Master of Primary Health Care Management
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