JOB STRESS AMONG NURSES IN PUBLIC HOSPITALS IN RATCHABURI PROVINCE, THAILAND

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JOB STRESS AMONG NURSES IN PUBLIC HOSPITALS IN RATCHABURI PROVINCE, TAHILAND

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ABSTRACT

A cross-sectional descriptive study was conducted to study job stress among nurses in public hospitals in Ratchaburi province, Thailand. The aims were to describe the prevalence of job stress, the socio-demographic factors, the work characteristics and the social support, as well as to identify the associations between the independent variables and dependent variable. There were 194 nurses in this study and data were collected from January to February, 2010.

The result showed slightly over a quarter of the respondents (26.2%) were categorized into the high-risk group. Job stress was found to have significant associations with workload, work relationships and social support. More than 70 percent of the respondents thought that their workloads were heavy. It was found that heavy workloads caused high stress to nurses. Over 60 percent of respondents thought their work relationships were good. The nurses who thought that they had good relationships at work had lower job stress. Slightly over half of the respondents (50.8%) thought that social support was good and 49.4 percent thought it was moderate, whereas no one thought their social support was poor. The more support they received, the less their job stress.

With respect to age, the mean of effort/reward ratio for the 36 to 45 age group was highest (0.714), while the under 35 age group had the lowest mean (0.663). Single status nurses had a higher mean of effort/reward ratio (0.701) than married nurses (0.672). Regarding monthly income, the 30,000 to 35,000 bath group had the highest mean of effort/reward ratio (0.702), while the over 35,000 bath group had the lowest mean (0.672). With regard to nurse registration term and working duration at the hospital, the under 10 year group had the highest mean of effort/reward ratio (0.718 and 0.704 respectively)

This study revealed that appropriate workloads, work relationships and social support can reduce job stress. In order to decrease job stress, it is recommended that nurse's workloads, work relationships and social support should be carefully considered and managed with a view to reduce job related stress.

KEY WORDS : JOB STRESS / EFFORT-REWARD IMBALANCE/ NURSE / PUBLIC HOSPITAL / WORKLOAD / WORK RELATIONSHIP / SOCIAL SUPPORT

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LIST OF ABBREVIATIONS

AIHD	:	ASEAN Institute for Health Development
ERI	:	Effort-reward imbalance

CHAPTER I
INTRODUCTION

This chapter describes the background and significance of the problem of stress among nurses working in hospitals in Thailand using a conceptual framework. Research questions and objectives are also described in this chapter.

1.1 Rationale and Justification of the Study

Job stress is the physical condition that poses a threat to the well-being of workers. Prolonged job stress will disrupt work effectiveness, lead to increased sick time, and higher job turnover. In recent years, a number of occupational health studies have focused on the objective ratings of reactions to psychological stress. The majority of the studies have been reports on acute stress reactions to a specific life event and the correlation between these reactions and biological markers. There are also several reports on the biological effects of chronic job stress. However, few studies on this subject matter have been reported on health care workers, and the development of objective parameters or markers to rate job stress reactions has not been greatly successful. Among healthcare workers, nurses are known to have high levels of job stress.

Nursing is a helping profession requiring a high degree of commitment and involvement. Nurses are the backbone of the health system and act as the first line of patient medical care. Therefore, nursing quality is one of the most important factors determining medical service performance. Nursing work is one of the most stressful and challenging vocations because of its need for specialization, complexity, and the requirement to handle emergency situations. In the clinical healthcare environment, some of the recognized categories of job stress which greatly impact nurses' work

experience include dramatic cuts in hospital budgets, rapid changes in medical technology, higher patient acuity, shortened hospital stays, heavy workloads, matters dealing with death and dying, management of the doctor–nurse conflicts, problems with supervisors, and uncertainty concerning treatment and discrimination. There are very many stressors affecting nurses. The sources of these job stresses may affect the wellbeing and job satisfaction of nurses. And the negative influence of job stress on nurses and hospitals is manifested through absence, unhealthiness, staff conflict, depression, staff turnover, and inferior service.

Stress, particularly occupational stress, is of prime interest to employers in view of the known adverse effects on personal performance, productivity, job satisfaction and health. Nursing is generally perceived as a demanding profession. It is both physically and psychologically challenging. Over the past several years, signs of occupational stress appear to be increasing among nurses. This has been attributed to many factors including downsizing, restructuring, and merging role boundaries and responsibilities (1). Nurse stress is defined as the emotional and physical reactions resulting from the interactions between the nurse and her/his work environment where the demands of the job exceed capabilities and resources (2). All professionals can succumb to job stress and nurses are certainly not exceptions. Stress itself is not harmful. Too little stress can leave you listless and apathetic, whereas a small dose of stress can provide an edge and a positive boost to action (3). It is well known that prolonged stress is a precursor of burnout which is considered a major problem for many professions, and nurses are considered to be particularly susceptible. Within the same context, health administrators in institutions that deal with loss and bereavement need to be particularly aware of the factors that can negatively influence the capability of the work force, especially nurses, to work effectively.

A positive work environment is essential for the retention of nurses in acute care settings. Some studies show that the health care work environment is affected by health care consumers, health care providers, and economic conditions such as levels of reimbursement, technology, and regulations. Unhealthy environmental factors are present in varying degrees in the nursing work environment

and precipitate nursing job stress (4). McCauley asserts that there is continuing evidence that unsupportive and unhealthy environments contribute to medical errors and unsafe working conditions (5). By understanding the effect of stress on job performance and the effect of social support on both job stress and job performance, better stress management approaches incorporating social support systems can be established. As a result, the quality of care might be improved when provided by nurses with strong social support. Providing environments with enhanced levels of social support and reduced levels of stress might help to retain staff and thus alleviate the nursing shortage.

Thailand's economy and exports achieved extraordinary growth rates in the 1990s. After a global slowdown, Thailand's exports stagnated and the economy had its poorest performance in more than a decade. The economy had an external account deficit and problems of exchange rate valuation, which forced the Thai government to float its currency and introduce fiscal and monetary discipline. The Thai government has attempted to reduce health care costs by restructuring healthcare services which has resulted in a deterioration in hospital working conditions and more stress for nurses (6).

Public hospitals often do not receive enough funding from the government. Even if they are in dire financial straits, it is not easy for public hospitals to stop their operations because they have practical responsibility for the health of all citizens. Given the Thai financial crisis, funding for public hospitals may be precarious. In Thailand, patients can come to a hospital to see a doctor even if they do not have enough money. Consequently, public hospitals are often crowded, waiting times can be long, and the facilities may not be as good as in private hospitals.

Due to the heavy workload of public hospitals, it is important for hospital administrators to know about nurse stress in order to utilize staff efficiently and retain them. It is also important for nurses to understand what makes them have stress. There are many reports in developed countries that nurses or medical professionals are experiencing high levels of stress. However, although there is increasing concern

about the poor mental and physical health of nurses, there has been little investigation of these issues in Thailand.

This study, therefore, focuses on stress among nurses working in the public hospitals. The purpose of this study is to investigate the prevalence of job-related stress and its relationship with various factors among nurses in public hospitals in Ratchaburi Province.

1.2 Research Questions

1. What is the prevalence of job stress among nurses in public hospitals in Ratchaburi Province?
2. What are the related factors for job stress among nurses in public hospitals in Ratchaburi Province?

1.3 Research Objectives

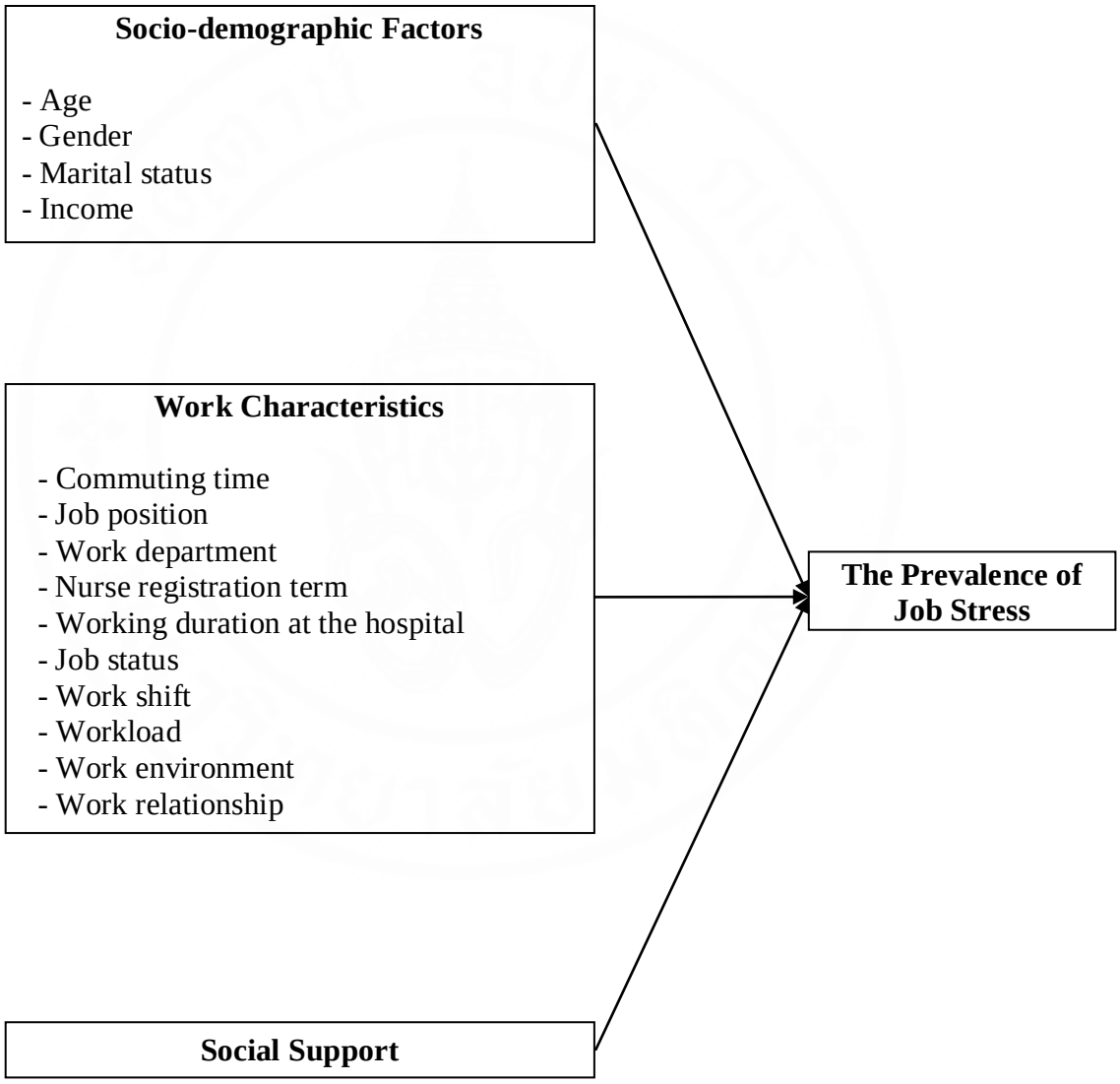
1.3.1 General objective

To identify the prevalence of job stress and its related factors among nurses in public hospitals.

1.3.2 Specific objectives

1. To measure the prevalence of job stress among nurses.
2. To describe the socio-demographic factors of nurses.
3. To describe the work characteristics of nurses.
4. To describe the social support for nurses.
5. To explain job stress in terms of the socio-demographic factors, work characteristics and social support of nurses.

1.4 Conceptual Framework



1.5 Operational Definitions

Marital status refers to marital status of the respondent nurses at the time of interview and whether they were currently single, married, divorced or widowed.

Income referes to the total amount of salary that the respondent nurses earned in one month.

Commuting time refers to the approximate time period to reach the hospital from where the respondent nurses lived.

Job position refers to the position or job designation of the respondent nurses such as chief staff or normal staff.

Nurse registration term refers to the period since the nurse respondent first registered for the nurse licence.

Working duration at the hospital refers to the period in years from the date of starting work as nurses in the relevant hospitals.

Work department refers to the department or place where the nurses work.

Work shift refers to the type of shift which is the time period during which nurses are at work.

Workload refers to how heavy the nurses' working load were. It is the amount of labour.

Work environment refers to the place where the respondent nurses worked. It includes air quality, noise, smell, arrangement of shelves, arrangement of wards, and equipment and facilities of the hospital.

Work relationship refers to the cooperation, teamwork, consultation, friendliness and helping relationship of the respondent nurses with their supervisors and colleagues.

Social support refers to emotional support rendered by family members, colleagues, supervisors and friends to the respondent nurses in this survey. This included making life easier, being approachable by nature, the ability to rely on the support person when the job is tough, and willingness to listen to the nurse respondents' personal problems.

The prevalence of job stress refers to the level of stress experienced by each respondent. It is calculated by dividing the effort score by the reward score. Each resultant score then determines whether a particular respondent is categorised as high stressed or low stressed.

1.6 Limitations of the Study

The independent variables related to the prevalence of job stress might not be complete due to lack of previous reserch. They might have other factors related to it.

CHAPTER II
LITERATURE REVIEW

This chapter reviews the literature concerning the concept of job stress, and the theoretical models using the effort-reward imbalance approach in researching the prevalence of job stress. It is also focuses on the various variables concerning job stress identified in previous studies.

2.1 The Concept of Job Stress

Stress is a biological term for the consequences of the failure of a human or animal to respond appropriately to emotional or physical threats to the organism, whether actual or imagined. It includes a state of alarm and adrenaline production, short-term resistance as a coping mechanism, and exhaustion. Common stress symptoms include irritability, muscular tension, inability to concentrate and a variety of physical reactions, such as headaches and elevated heart rate (7).

The definition of stress relating to the context of nursing practice is expressed in the literature. Cox defines stress as a process rather than a stimulus or a response, and adds that experiences with high demands and constraints which offer low resources and support for solving the problems are most likely to cause stress (8). This explanation of stress identifies its involvement with the experience of nurses working in high stress environments. Nurses are experiencing increasing demands in the workplace but have limited support in their occupation to assist them in decreasing their experiences with stress. Stordeur explained that nurses who experience an imbalance between efforts spent at work and rewards obtained are more likely to experience stress and burnout (9). Nurses experience many demands on the job, and they are constantly coping with time pressures, maintaining their competence in a

rapidly changing field, placing themselves at risk of physical assault, and experiencing ethical dilemmas. they alsooften experience changes in the workplace, and a lack of control over client care (10). There are many more causes of stress in nursing and the demands listed by Rainham are only a minute part of a bigger picture. With all of the stressors experienced in nursing, and the small rewards obtained in return, it is no surprise that nurses are experiencing stress.

2.1.1 Workplace stress

Workplace stress is the harmful physical and emotional response that occurs when there is a poor match between job demands and the capabilities, resources, or needs of the worker.(11) Stress-related disorders encompass a broad array of conditions, including psychological disorders (e.g. depression, anxiety, post-traumatic stress disorder) and other types of emotional strain (e.g. dissatisfaction, fatigue, tension, etc.), maladaptive behaviors (e.g. aggression, substance abuse), and cognitive impairment (e.g. concentration and memory problems). In turn, these conditions may lead to poor work performance or even injury. Job stress is also associated with various biological reactions that may lead ultimately to compromised health, such as cardiovascular disease, or in extreme cases, death (12).

Job stress is having an increasing impact on today's workforce. This suggests that stress intensity from the most frequently recognized sources has increased, and/or additional sources are contributing to the cumulative effects. In this respect it is interesting that some recent studies (13) also identified lack of reward and shift working as major sources of distress, but these did not appear as significant stressors in earlier studies. These sources cannot be considered as 'new', but rather they appear to have increased in relative significance. Interprofessional conflict also appears to have increased in importance for many nurses during the last 10 years or so (14). In contrast, the emotional aspect of caring does not appear as frequently in the recent literature as a source of distress as it did in earlier studies. The emotional costs of providing care are unlikely to have reduced, and so it is possible that the increased significance of sources such as reward have assumed a greater significance for nurses. If this is so, then it would suggest that the problem is becoming one of growing

dissatisfaction with the terms and conditions of employment, rather than nursing in itself.

It is well documented that nursing is a stressful occupation (15). With the prevalence of the nursing shortage, health care cutbacks, increasing patient demands and complexity of care, nurses may be experiencing increased incidences of stress in the workplace. Nurses are at high risk of experiencing physical and mental illness due to the increased stress and lack of support and control they have in their profession (16). Stress affects the health of individuals by placing huge demands resulting in emotional, physical, and behavioural responses (17).

2.2 Causes of Workplace Stress

Job stress results from the interaction of the worker and the conditions of work. Views differ on the importance of worker characteristics versus working conditions as the primary cause of job stress. The differing viewpoints suggest different ways to prevent stress at work. According to one school of thought, differences in individual characteristics such as personality and coping skills are very important in predicting whether certain job conditions will result in stress. In other words, what is stressful for one person may not be a problem for someone else. This viewpoint underlies prevention strategies that focus on workers and ways to help them cope with demanding job conditions (18).

In order to obtain a perspective on the stress experienced in nursing, we must first examine the root causes of stress in the profession. From the literature reviewed, it is apparent that there are many causes of stress in nursing practice. Rainham describes some specific stressors experienced in the nursing profession. These include the demands of the actual occupation, job security and stability, the people at work, safety issues, self esteem, lack of support, and problems which occur outside of work (10). External factors such as work environment and problems away from work such as family, relationships, and society may causing stress in nurses.

Internal factors may include the nurse and factors such as conflict, decisions, and ethical dilemmas that he or she may have to deal with.

External Factors : Most of the literature reviewed regarding the causes of nursing stress in the workplace was consistent and mostly related to work environment factors. Reininghaus et al. revealed in their study that nurses considered stress causing factors in the workplace were compatible with existing stress literature.; Factors causing stress in nursing practice included workload, organizational support, patients and their families, role confidence and competence, and home/work conflicts (19). Not only does the nurse have to experience stress in the workplace, the nurse also has other sources of stress that may be found in problems away from work. The nurse may experience stress from all aspects of his/her life; stressors that may be present in their families, society, friends, and the workplace are additional to those already causing stress in the nurse. Commuting to work may also lead to high stress.

Internal Factors : Internal factors causing stress may include factors such as internal conflict, decision-making, and ethical dilemmas that the nurse may be experiencing. Cole identified many internal sources of stress such as providing care to dying patients, fear of making mistakes, high workload and task overload, interpersonal conflict, and patient care issues. Many nurses experience conflict from within regarding their patients and the ethical dilemmas that may arise with patient care (20).

2.3 Long-term Effects of Stress

Long-term exposure to stressors can also have other negative effects. For example, Cropanzano found that long-term exposure to high levels of stress can lead to emotional exhaustion, which has been shown to degrade organizational commitment and increase turnover intentions (21). According to Seymour and Black, chronic stress can also lead to physical problems, including cardiovascular disease, muscle pain, stomach and intestinal problems, decreased fertility, and reduced immune

system strength. Long-term stress can also lead to feelings of anger, anxiety, fatigue, depression, and sleep problems (22).

Heslop et al studied the associations between job satisfaction self perceived stress, cardiovascular risk factors and mortality comparing men and women, and found no significant difference in mortality from cardiovascular disease according to job satisfaction after adjustment for age, occupational class, and cardiovascular risk factor (23).

2.4 Characteristics of the Work

2.4.1 Workload

Hillhouse and Adler suggest that it is the actual characteristics of the work environment, and workload, rather than any differences in practice requirements, that are important in evaluating sources of stress for nurses (24). However, a small number of studies suggest that, whilst overall reported stress levels may be similar, their ranking may vary according to practice area. Foxall et al. found that nurses working in intensive care ranked coping with ‘death and dying’ more highly as a source of distress than those working in medical–surgical care (25), who ranked workload and staffing issues higher. Tyler and Ellison found that theatre nurses ranked emotional aspects lower than did those working in a liver unit, or in haematology or oncology (26). More such comparative studies are required, but from these few it appears to be important that employing organizations such as hospitals should consider that nurses’ needs could differ between practice areas.

The most obvious means of reducing the workload of practitioners is to ensure that staffing levels are adequate, including administrative staff who could reduce the paperwork burden on nurses. Recent funding increases introduced by the Government promise improvements in staff recruitment, and the Department of Health has noted that there has been ‘excellent progress’ in both recruitment and retention of nurses during the past 2 years, even exceeding their own forecasts. The document also

looks forward to the 'largest substantial increase in funding of any 5-year period in its history' (27).

2.4.2 Income and shift working

Pay and shift work schedules seem to be becoming more prominent as major sources of distress for nurses, to the extent that they are displacing other sources in importance. Lack of reward is an increasing source of frustration and contributes to role disengagement, a component of burnout (28). There remains a disparity of pay for newly qualified nurses when compared with that for police officers and teachers, two professional groups traditionally compared with nurses (29), and nurses are especially aggrieved by governmental failure to address the issue of salaries.

2.4.3 Work Hours

The number of hours that a nurse spends at the hospital and a meta analysis of research obtained a small but statistically significant correlation between the number of hours worked and physiological and psychological health symptoms (30).

2.4.4 Exposure to risk and hazards

Nurses face the physical danger of 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 (31).

2.5 Social Support

Social support is defined as assistance and protection provided to others, especially individuals. Social support can take the form of reassuring words, empathy, gestures like holding hands, facial expressions, a 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. Lack of social support from colleagues and poor interpersonal relationships causes considerable stress (32).

Assistance acts as a form of protection from life's stress. The basis of social support, considered fundamental to this concept, involves the exchange of resources between two individuals, and advocacy for the affected individual. Social support mechanisms in stress have three main types of effect : main, moderating, and mediating effects. Main effects involve a direct relationship between social support and well being. Moderating effects involve the presence of an antecedent affecting the relationship of other variables such as a stressor which is an independent variable and a a dependent variable outcome such as job stress level. The mediating effect of social support is such that when it influences stress, the variations significantly affect the variations of outcome as well (33).

2.6 Models of Job stress

2.6.1 Effort-reward imbalance model

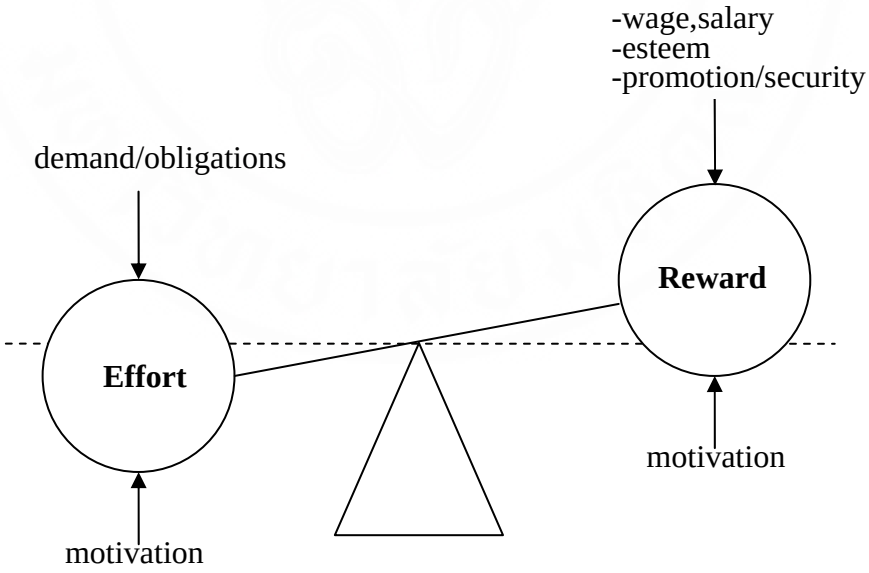
The effort-reward imbalance model was introduced by Siegrit et al. in 1996 (34). Research about effort-reward imbalance and health is part of a larger scientific program that aims at understanding the contribution of social and psychological factors relating to human health and disease. More specifically, protective and damaging effects on health produced by individuals' behaviors, cognitions and emotions through core social roles in adult life (work role, civic roles, family roles etc.) are analyzed using a specific theoretical and methodological approach.

The model of effort-reward imbalance (ERI) claims that failed reciprocity in terms of high efforts spent and low rewards received in turn is likely to elicit recurrent negative emotions and sustained stress responses in exposed people. Conversely, positive emotions evoked by appropriate social rewards promote well-being, health and survival. A major specification of this theoretical perspective concerns the work role, and in particular its contractual basis. So far, a majority of research evidence concerns ERI at work. More recently, this perspective has been applied to additional social roles in adult life.

According to the model, effort at work is spent as part of a social contract that reciprocates effort by adequate reward. Rewards are distributed by three transmitter systems: money, esteem, and career opportunities including job security. Each one of these components of work-related rewards was shown to matter for health.

The model of ERI at work claims that an imbalance between (high) effort and (low) reward is maintained under the following conditions: 1. Work contracts are poorly defined or employees have little choice of alternative workplaces (e.g. due to low level of skill, lack of mobility, precarious labor market); 2. employees may accept this imbalance for strategic reasons (this strategy is mainly chosen to improve future work prospects by anticipatory investments) (35).

The effort- reward imbalance model at work



The theoretical model of ERI is used to define chronic work stress. This model maintains that lack of reciprocity between efforts spent and rewards received (i.e. ‘high cost/ low gain’ conditions) in a core social role, the work role, defines a state of emotional distress which is related to adverse health outcomes (36). The ERI Questionnaire consists of 17 two-stage Likert scale items and covers the two major components of Siegrist’s model: extrinsic effort and reward. Extrinsic effort is

measured by six items, which are summed to create an index ranging from 6 to 30 with a high score reflecting high effort. Reward is measured by 11 items and is designed to tap three dimensions of reward: monetary gratification, status control and esteem reward. Items are summed up to create scale scores ranging from 11 to 55. The instrument is well investigated (37). The authors reviewed 45 studies on the Effort–Reward Imbalance Model and found considerable empirical support for the hypothesis that high effort in combination with low reward increases the risk of poor health. Siegrist et al. investigated psychometric properties of the ERI at work model by comparing data from five European countries (38). Internal consistency of the scales was satisfactory in all samples, and the factorial structure of the scales was consistently confirmed. Poor health was observed in employees scoring high on the ERI scales. Tsutsumi and colleagues reported alpha coefficients of 0.85–0.84 for effort and reward respectively (39). Arpontip et al. showed in the study that Thai version of Effort-Reward Imbalance questionnaires was an adequately reliable and validated instrument (40).

2.7 Related Studies

2.7.1 The physiological and psychological stress

Mino, Tsuda, Babazono and Aoyama evaluated the relationship between job stress and mental health at work in the employees of an electricity company in Japan and found that subjective job stress was significantly associated with the state of mental health. In particular, the items of “two much trouble at work”, “two much responsibility”, “are not allowed to make mistake”, “poor relationship with superiors”, and “cannot keep up with technology” were significantly related to mental health (41).

Selye first researched stress 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 change in metabolism, organ functions and in the immune system. Researchers today

recognize these pioneer findings and acknowledge the different links between the brain and mental and physical as well as behavioural changes (42).

Shimazu et al. referred to the effects of a stress management program for teachers on their stress responses, social support, and coping, and reported that a program that focuses on a particular group, those with high stress responses or high job control, might be effective in enhancing coping skills, increasing social support, and reducing stress responses (43).

Deschamps et al. referred the occupational stress of police in France and found that police officers with high stress levels belonged to the following types of groups: no leisure-time activities, no hobbies, and age over 30. They considered that stress at work was an ill health provoking factor. This population was adversely affected by lack of available manpower and long work hours. (44)

2.7.2 Studies about interventions of stress management

Klink, Blonk, Schene and Dijk determined the effectiveness of occupational stress reducing interventions and the populations for which such interventions are most beneficial by quantitative meta-analysis of four distinct intervention types: cognitive-behavioral interventions, relaxation techniques, multimodal programs, and organization-focused interventions. Their research revealed that a small but significant overall effect was found. A moderate effect was found for cognitive-behavioral interventions and multimodal interventions, and a small effect was found for relaxation techniques. the effect was most pronounced on the following outcome categories: complaints, psychological resources and responses, and perceived quality of work life. The study concluded that stress management interventions are effective and cognitive-behavioral interventions are more effective than the other intervention types (45).

Krisanaprakornkit, T., maneekanond, S. and Rongbudsri, S. studied the effectiveness of the Consciousness Transformation Program for Stress Management

and concluded that the program could be a useful adjunctive treatment for psychiatric patients and improve symptoms profile in normal subjects (46).

There is a strong correlation between management style and nurses job satisfaction. The important factors in supervision are decision making, friendliness, praising good performance, leading and motivating staff, ensuring an adequate working environment, and listening to sub ordinates opinion (47).

Although stress cannot be avoided, it can be dealt with efficiently, and individuals can adjust and live with it; individuals do not need to let it overwhelm them and affect their quality of life. New South Wales Nurses' Association in Australia, for example, has succinctly summarised how nurses can manage occupational stress :

1. Keep things in perspective, prioritise 2. Share your worries with family and friends 3. Increased knowledge helps to alleviate fears – clear up any misconceptions and give yourself the tools and resources to cope. 4. Don't be too hard on yourself 5. Worry does not solve anything, try to confront your problems and make plans to solve them. 6. Set realistic goals 7. Exercise regularly and eat healthily 8. Practice relaxation techniques 9. Have fun with your family and friends, think positive and enjoy new experiences 10. Remember: it is normal to have setbacks – they can be overcome (48).

CHAPTER III
RESEARCH METHODOLOGY

This study was a cross-sectional descriptive study. A study group was selected from as respondent in the research. The nurses in public hospitals were selected as the population of the research. The study objective was to identify the prevalence of job stress and its related factors by utilizing the framework of effort-reward imbalance.

3.1 Study Design

This research was designed as a cross-sectional descriptive study on job stress among nurses working in public hospitals in Ratchaburi Province. The main research tool was a structured questionnaire, comprising 4 parts: socio-demographic factors, work characteristics, social support and effort-reward imbalance.

3.2 Target Population

Population based study of registered Thai nurses employed at public hospitals in Ratchaburi Province. They were willing to participate in this study and agreed on the consent form.

3.3 Sampling Technique and Sample Size

There were three large district hospitals in Ratchaburi province: Damnoensaduak Hospital, Ban Pong Hospital, and Photharam Hospital. Random sampling was used to select a district hospital, namely Damnoensaduak Hospital.

Total number of eligible staff was 198 in Damnoensaduak Hospital. One hundred and ninety-four agreed to participate in the study. This made the sample size of 194.

3.4 Research Instrument

The questionnaires consisted of four parts such as the socio-demographic factors, work characteristics, social support and effort-reward imbalance.

3.4.1 Socio-demographic factors

Age, gender marital, and income,

3.4.2 Work characteristics

This part consisted of 29 questions such as General job information, workload, work environment, work relationship. These questions except for general job information questions were used as applied scaling method, scores were given respectively as follows:

Workload:

- Never =1 score
- A little =2 score
- Some =3 score
- A lot =4 score

The maximum was 20 and the minimum score was 5. Based on Best's Rating Criteria, the total score of work load was classified into three levels as follows :

Heavy work load	15.2 to 20.0 scores
Moderate work load	10.1 to 15.1 scores
Light work load	5.0 to 10.0 scores

Work Environment:

- Strongly Disagree =1 score
- Disagree =2 score
- Not sure =3 score
- Agree =4 score
- Strongly Agree =5 score

The maximum score was 25 and the minimum score was 5. Based on Best's Rating Criteria, the total score of work environment was classified into three levels as follows :

Good Environment	18.4 to 25 scores
Moderate	11.7 to 18.3 scores
Poor Environment	5.0 to 11.6 scores

Work Relationship:

- Strongly Disagree =1 score
- Disagree =2 score
- Not sure =3 score
- Agree =4 score
- Strongly Agree =5 score

The maximum score was 25 and the minimum score was 5 for the 5 items. Based on Best's Rating Criteria, the total score of work relationship was classified into three levels as follows :

Good Relationship	18.4 to 25 scores
Moderate	11.7 to 18.3 scores
Poor Relationship	5.0 to 11.6 scores

3.4.3 Social support

This part consist of 8 questions such as support from supervisor, colleges, family, friends. Using as applied scaling method, scores were given respectively as follows:

- Very much	=4 score
- Somewhat	=3 score
- A little	=2 score
- Not at all	=1 score

The maximum score was 32 and the minimum score is 8. Based on Best's Rating Criteria, the total score of social support was classified into three levels respectively as follows:

Good support	26 to 32 scores
Moderate support	17 to 25 scores
Poor support	8 to 16scores

3.4.4 Effort and reward imbalance (ERI) questionnaire

The ERI model has been operationalized as a standardized self-report measure containing 17 Likert-scaled items in its established short version. These items defined two unidimensional scales: 'effort' (6 items), 'reward' (11 items) with each item rated on a 5 point (effort, reward) Likert scale respectively. Examples of items are 'I have constant time pressure due to a heavy work load' (effort); 'My job promotion prospects are poor' (reward).

The effort consisted 6 items of which the content varies from physical load, time pressure, interruptions, responsibility, overtime, increasing demands. When the stressful situations referred in the items do not exist, the score is 1. When the stressful situations exist but not at all distressed by those situations, they were scored 2, somewhat distressed situations got scored 3, distressed situations get scored 4, and very distressed situations got scored 5. Total score varied from 6 to 30. The higher score means the higher extrinsic effort experienced.

The questions for reward consisted of 11 items, and were measured as a composite measure. It had respect from supervisor, respect from colleagues, adequate support, unfairly treatment, adequate respect and prestige, promotion insecurity, proper position, adequate work, adequate income, undesirable change and job insecurity. When the stressful situations do not exist, the score was 5. When the stressful situations exist but not at all distressed by those situations, they were scored 4, somewhat distressed situations got scored 3, distressed scored 2, and very distressed got scored 1. Total score varied from 11 to 55. The lower score means the lower extrinsic reward.

Effort/ reward ratio was used to measure the level of imbalanced situation between effort and reward at work. Effort/ reward ratio was calculated by putting the effort score in the numerator and the reward score in the denominator, whereas the former score was multiplied by 11 and the latter score was multiplied by 6 for correction to adjust for the unequal number of items. This was to make the total scores of two dimensions equal. Effort/ reward ratio was grouped into 2 groups by using number of top quartile (Q_3), which was high risk group (ratio>Q_3), low risk group (ratio<Q_3).

$$\text{Effort/ Reward ratio} = \frac{\text{Score of Effort} \quad \text{x } 11}{\text{Score of Reward} \ \text{x } 6}$$

The mean of effort/ reward ratio was used to compare with that of other previous studies in order to identity whether the average of stress level in this study was high or low. It was calculated as follows: effort/reward ratio of each respondent was all added, and then it was divided by the total number of nurses.

3.5 Ethical Approval

The researcher submitted to Mahidol University Institutional Review Board in order to get ethical approval for this study. Then, the approval (No. MU-IRB 2009/316.0812) was given to the researcher on 8th December, 2009. Then this study was conducted after this approval.

3.6 Data Collection Process

Following the approval of ethic committee, the data collection started with following 5 steps ;

1) The formal letter from AIHD was sent to the director of Damnoensaduak Hospital in Ratchaburi Province according to the sample technique for asking the permission to collect data in the hospital, and from registered nurses.

2) After getting the permission to collect data from the director of Damnoensaduak Hospital, advisor acting as coordinator contacted to the coordinator in Damnoensaduak Hospital, and explained purposes and process of this study, and the protection of human rights to the coordinator of Damnoensaduak Hospital.

3) The hospital coordinator explained purposes and process of this study and the protection of human rights to all registered nurses.

4) When registered nurses were willing to participate in the study, the coordinator distributed the participation information sheet, consent form, and

questionnaire to them. Registered nurses signed his/her name in consent form, participation information sheet and then gave the answer in questionnaire.

5) The boxes were put at each department in the hospital. The nurses were asked to return the participation information sheet, consent form, and questionnaire to researcher in the separated boxes.

3.7 Reliability Test of Questionnaires

The questionnaire was translated into Thai from English. The linguistic equivalence of the questionnaires was checked by experts with independent backtlanslation. Cronbach α coefficient was used to test reliability of the job stress which revealed the the Cronbach's α of the work environment was 0.831, work relationship was 0.812, social support was 0.720 and ERI questionnaire was 0.847 respectively.

3.8 Statistical Analysis

The statistical software Minitab 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. Chi-square test was used to determine association between independent variables and dependent variables, and T-test and one-way ANOVA test were used to compare mean of Effort/reward ratio among each independent variables.

CHAPTER IV
RESEARCH RESULTS

This chapter describes the results which were obtained from this study. This research was conducted to evaluate the stress situation of nurses in public hospitals in Ratchaburi Province, Thailand. Data was collected thorough self-administered questionnaire from 194 nurses in Damnoensaduak Hospital. The aims of this research were to describe the socio-demographic factors, work characteristics, social support and the prevalence of job stress It also aimed to identity the association between the independent variables and the prevalence of job stress.

The results of the data analysis are presented in three parts: the first part comprising descriptive statistics is shown in the tables of frequency and percentage distributions of all variables. The second, using chi-square test identifies association between the independent variables and dependent variables. The third, using Student' t-test and one-way ANOVA shows differences between the groups and the association between the various independent variables with job stress.

4.1 Socio-demographic Characteristics of Nurses

Table 4.1 shows the socio-demographic characteristics of nurses. One hundred ninety four questionnaires were completed and submitted for analysis.

With regard to age, the median was 40.0 years old. Minimum and maximum ages were 29 and 59 years old, respectively. The largest age group (42.7 %) was 36 to 45 years.

Regarding gender, almost all of the respondents (97.4%) were female. The rest (2.6%) were male.

With respect to martial status, 60.3 percent were married and nearly one-third (30 %) were single.

The median monthly income of the respondents was 26,920 baht. The respondents were divided into 5 groups. Minimum and maximum incomes were 10,000 and 50,000 baht, respectively. The largest group (26.7 %) earned 30,000 to 34,999 bath; 21.5 percent was 25,000 to 29,999 bath; and only 13.1 percent less than 19,999 bath.

With regard to commuting time, slightly over one-half of the respondents (55.1%) commuted to work within 30 minutes and 38.6 percent within 30 to 60 minutes. The median commuting time was 20 minutes and QD was 10 minutes. The minimum time was 1 minute and the maximum was 80 minutes.

Regarding job position, the vast majority of the respondents (85.0%) worked as normal staff and 11.3 percent worked as a chief.

In relation to work departments, nearly two-thirds of the respondents (58.8%) worked in the inpatient section: 6.7 percent worked only in the outpatient section.

The respondents were categorized into four groups according to year of getting a nurse licence. The largest group (46.0%) had been registered for 11 to 20 years as a nurse: 36.2 percent for 21 to 30 years; 10.5 percent for 10 years or less; and 7.3 percent for 31 years or more. The median of period was 18.0 years and QD was 6.0 years. The minimum and maximum were 3.0 and 39 years, respectively.

Regarding working duration of the respondents, the largest group (43.0%) had worked from 11 to 20 years; 29.5 percent for 21 to 30 years; and 5.3 percent for

more than 30 years. The mean was 16.9 years and SD was 8.0 years. The minimum was 1 year and the maximum was 39 years.

With respect to job status, nearly all of the respondents (98.9%) were working full-time.

With regard to work shifts, the largest group (64.2%) worked rotating 8 or 12 hour shifts, while 22.3 percent worked day shifts.

Table 4.1 Percentage of Respondents by Socio-demographic Characteristics

Socio-demographic characteristics	Number	Percentage
Age Group	194	100.00
≤35	61	31.4
36 – 45	83	42.7
46≤	50	25.9
Median 40.0 , QD 6.0 , Min 29 , Max 59		
Gender	194	
Female	189	97.4
Male	5	2.6
Marital Status	193*	
Single	66	34.1
Married	117	60.3
Others	10	5.6
Monthly Income (Bath)	191*	
≤19,999	25	13.1
20,000 – 24,999	39	20.4
25,000 – 29,999	41	21.5
30,000 – 34,999	51	26.7
35,000≤	35	18.3
Median26,920 , QD 5,000 , Min 10,000 , Max 50,000		
Commuting time	194	
<30	107	55.1
30 – 60	75	38.6
60<	12	6.3
Median 20.0 , QD 10.0 , Min 1 , Max 80		
Job Position	194	
Staff	165	85.0
Chief	22	11.3
Other	7	3.7

Table 4.1 Percentage of Respondents by Socio-demographic Characteristics (cont.)

Socio-demographic characteristics	Number	Percentage
Work Department	194	
Outpatient	13	6.7
Inpatient	114	58.8
Others	67	34.5
Nurse Registration Term (year)	191*	
≤10	32	10.5
11 − 20	83	46.0
21 − 30	66	36.2
31≤	10	7.3
Median 18.0 , QD 6.0 , Min 3 , Max 39		
Working Duration at the hospital (year)	193*	
≤10	43	22.2
11 − 20	83	43.0
21 − 30	57	29.5
31≤	10	5.3
Mean 16.9, SD8.0 , Min 1 , Max 39		
Job Status	193*	
Fulltime	191	98.9
Other	2	1.1
Work Shift	193*	
Rotating 8 hours or 12hours shift	124	64.2
Day Shift	43	22.3
Others	26	13.5

*missing data: the respondents had their right to skip some questions.

4.2 Workload

The percentage distribution of the respondents by each question about workload is presented in Table 4.2. Slightly over one-half of the respondents (53.6%) thought their own workload was some, whereas 45.9 percent checked a lot. As for other's expectation, nearly three-fifth of them (59.1%) thought the quantity of workload was a lot. 59.2 percent of the respondents answered some amount of overtime was some. 20.6 percent of the nurses checked a little. More than two-thirds of respondents (64.7%) thought they needed some more time for their tasks, whereas 32.6 percent nurses felt their work needed much more time. Slightly over three-fifths percent (60.1%) of the respondents thought their job had some difficulties and 38.4 percent thought they had a lot of difficulties.

Table 4.2 Percentage of Workload of Respondents by a Four-Items Index Analysis

Questions about workload (N=194)	Never (%)	A little (%)	Some (%)	A lot (%)
How much workload?	0	0.5	53.6	45.9
What workload do others expect?	0.5	0	40.4	59.1
How much overtime?	5.1	20.6	59.2	15.1
How much time need for your work?	0	2.6	64.7	32.6
How much difficulties?	1.0	0.5	60.1	38.4

Table 4.3 shows the frequency and the percentage distribution of level of workload by categories. The total score of the 5 questions was rated by Best'Rating Criteria as low workload, moderate or heavy workload. The result shows that majority of the respondents (72.2%) thought their workloads were heavy and 27.8 percent thought that they had moderate workloads. No one thought that they had a low workload.

Table 4.3 Percentage of Respondents by Level of Workload

Level of workload	Frequency (n=194)	%
Low	0	0
Moderate	54	27.8
Heavy	140	72.2

Score: Low=5-10, Moderate=10.1-15.1, Heavy=15.2-20

4.3 Work environment

The percentage distribution of the respondents by each question about work environment is presented in Table 4.4. Regarding hygienic status, 62.3 percent thought the hygienic status was good, while 51.3 percent agreed the air conditioning was good. However, 21.1 percent and 38.6 percent of respondents thought that comfortable relaxation space was not enough.

Table 4.4 Percentage of Perception about Work Environment by a Five-Items Index Analysis

Statements about Work Environment (N=193)	Strongly Disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly Agree (%)
Adequate space	12.8	35.5	12.8	36.0	2.9
Good hygienic status	1.5	15.5	18.0	62.3	2.7
Good air conditioning	3.6	20.6	20.6	51.3	3.9
Good illumination	9.8	36.0	22.6	28.8	2.8
Comfortable relaxation space	21.1	38.6	20.6	19.0	0.7

Table 4.5 indicates the frequency and the percentage distribution of level of work environment by categories. The total score of 5 questions was used by Best'Rating Criteria to identify the work environment as "good", "moderate" or "poor". Most of the respondents regarded the work environment as "moderate", while 17.5 percent thought the environment was "good" and 17.0 percent selected "poor" respectively.

Table 4.5 Percentage of Respondents by Level of Work Environment

Level of Environment	Frequency (n=193)	%
Good Environment	33	17.0
Moderate	127	65.5
Poor Environment	34	17.5

Score: Poor Environment=5.-11.6, Moderate=11.7-18.3, Good Environment=18.4-25,

4.4 Work relationship

The percentage distribution of the respondents by each question about work relationship is presented in Table 4.6. According to the question about friendliness, 71.6 percent of respondents agreed there was good friendliness at work. With respect to colleagues, 66.5 percent agreed their colleagues were supportive. Regarding a question about isolated person, 62.9 percent thought there was no isolated person at their work palace, while 2.1 percent strongly disagreed with this question.

Table 4.6 Percentage of Perception about Work Relationship by a Five-Items Index Analysis

Statements about Work Relationship (N=194)	Strongly Disagree (%)	Disagree (%)	Not sure (%)	Agree (%)	Strongly Agree (%)
There is friendliness	0	3.2	17.5	71.6	7.7
The members are supportive	0	2.1	27.8	66.5	3.6
No isolated person	2.1	3.6	12.9	62.9	18.5
No behavior arrogantly person	1.6	10.8	23.2	54.1	10.3
No dissension	0.5	12.9	27.3	50.0	9.3

Table 4.7 shows the frequency and the percentage distribution of level of work relationship by categories. The total score of 5 questions was rated by Best'Rating Criteria as "good relationship", "moderate" and "poor relationship". The percentage of good relationship was 60.8 percent, while 38.1 percent of the respondents were categorized into moderate and only a few (1.1%) were poor.

Table 4.7 Percentage of Respondents by Level of Work Relationship

Level of Work Relationship	Frequency (n=194)	%
Good Relationship	118	60.8
Moderate	74	38.1
Poor Relationship	2	1.1

Score: Poor Relationship =5.-11.6, Moderate=11.7-18.3, Good Relationship =18.4-25

4.5 Social Support

The percentage distribution of the respondents by each question about social support is presented in Table 4.8. According to the questions who you rely on,

nurses who somewhat relied on their supervisors were 73.1 percent and those who somewhat relied on their colleagues were 68.6 percent. 64.4 percent relied on their family member very much.

Table 4.8 Percentage of Social Support of Respondents by a Four-Items Index Analysis

Items of Social Support (n=194)	Not at all	A little	Somewhat	Very much
	(%)	(%)	(%)	(%)
Rely on your supervisor	2.1	15.0	73.1	9.8
Rely on your colleges	0	7.7	68.6	23.7
Rely on your family	0.5	2.6	32.5	64.4
Rely on your friends	0	3.1	68.0	28.9
Supervisor is willing to listen	2.1	27.9	59.0	11.0
Colleges are willing to listen	1.6	5.7	80.4	12.3
Family is willing to listen	0.5	0.5	33.0	66.0
Friends are willing to listen	0	2.1	68.6	29.3

Table 4.9 shows the frequency and the percentage distribution of level of social support by categories. The total score of 8 questions was rated by Best'Rating Criteria to categorise social support as "good", "moderate" or "bad". Slightly over one-half (50.6) percent of the respondents thought that social support was "good", whereas 49.4 percent thought it was "moderate". No one thought their social support was poor.

Table 4.9 Percentage of Respondents by Levels of Social Support

Level of social support	Frequency (n=194)	%
Good Support	98	50.6
Moderate	96	49.4
Poor Support	0	0

Score: Poor Support=8-16, Moderate=17-25, Good support =26-32

4.6 Measurement of Job Stress

4.6.1 The Prevalence of Job stress

Level of job stress was grouped into two groups by using effort/reward ratio of top quartile (Q3) at a cut-off point. In this study, Q3 was 0.83. When the effort/reward ratio was equal to or more than Q3, the stress level was categorized as high-risk. When the effort/reward ratio was less than Q3, the level were considered as low-risk. Table 4.10 shows the prevalence of job stress.

In this study, slightly over a quarter of the respondents (26.2%) were categorized into the high-risk group, while 73.8 percent were categorised as low-risk.

Table 4.10 The Prevalence of Job Stress by Categories

Level of job stress	N	%
High	51	26.2
Low	143	73.8

4.6.2 Mean of Effort/reward Ratio

The mean effort/reward ratio was used to identify the level of job stress at work: the higher the mean, the higher the stress level. Table 4.11 shows that the mean of effort/reward ratio of total nurses was 0.69 and SD was 0.27.

Table 4.11 Mean of Effort/reward Ratio of Respondents

Variables	N	Mean	SD
Mean of effort/reward ratio	194	0.69	0.27

4.7 Association between the independent variables and the dependent variables

In this part, chi-square test was used to identify the association between the independent variables and job stress level.

4.7.1 Association between age and stress level

Table 4.12 shows the association between age and stress level. No significant association identified between age and stress level was found.

Table 4.12 Association between Age and Stress Level

Age	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=143	%		
≤35	13	21.31	48	78.69	1.151	0.562
36 – 45	24	28.92	59	71.08		
46≤	14	28.00	36	72.00		

4.7.2 Association between gender and stress level

Table 4.13 shows the association between gender and stress kevel. No significant association identified between gender and stress level was found.

Table 13 Association between Gender and Stress Level

Gender	High Stress		Low Stress		*Fisher Exact test*	p-value
	n=51	%	n=143	%		
Female	49	25.93	140	74.07	0.885	0.480
Male	2	40.00	3	60.00		

4.7.3 Association between marital status and stress level

Table 4.14 presents the association between marital status and stress level. It showed that there was no statistically significant association between marital status and stress level.

Table 4.14 Association between Marital Status and Stress Level

Marital status	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=142	%		
Single	14	21.21	52	78.79	1.406	0.495
Married	34	29.06	83	70.94		
Others	3	30.00	7	70.00		

4.7.4 Association between income and stress level

Table 4.15 presents the association between income and stress level. It showed that there was no statistically significant association between income and stress level.

Table 4.15 Association between Income and Stress Level

Income (Bath)	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=140	%		
≤19,999	7	28.00	18	72.00	1.229	0.873
20,000 – 24,999	10	25.64	29	74.36		
25,000 – 9,999	9	21.43	32	78.57		
30,000 – 34,999	16	31.37	35	68.63		
35,000≤	9	25.71	26	74.29		

4.7.5 Association between commuting time and stress level

Table 4.16 presents the association between commuting time and stress level. It showed that there was no statistically significant association between commuting time and stress level.

Table 4.16 Association between Commuting Time and Stress Level

Commuting time (minutes)	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=143	%		
<30	28	26.17	79	73.83	0.002	0.9663
(30 – 60) +(60<)	23	26.43	64	73.57		

4.7.6 Association between job position and stress level

Table 4.17 shows the association between job position and stress level. It revealed that there was no significant association between job position and stress level.

Table 4.17 Association between Job Position and Stress Level

Job position	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=142	%		
Staff	44	26.67	121	73.33	2.856	0.240
Chief	7	31.82	15	68.18		
Others	0	0	7	100		

4.7.7 Association between Work department and stress level

Table 4.18 shows the association between work department and stress level. It showed that there was no significant association between these groups.

Table 4.18 Association between Work Department and Stress Level

Work department	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=143	%		
Outpatient	7	53.85	6	46.15	5.471	0.065
Inpatient	28	24.56	86	75.44		
Others	16	23.88	51	76.12		

4.7.8 Association between nurse registration term and stress level

Table 4.19 shows the association between nurse registration term and stress level. It revealed that there was no significant association between nurse registration term and stress level.

Table 4.19 Association between Nurse Registration Term and Stress Level

nurse registration term (year)	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=140	%		
≤10	9	28.13	23	71.88	1.979	0.577
11 – 20	21	25.30	62	74.70		
21 – 30	20	30.30	46	69.70		
31≤	1	10.00	9	90.00		

4.7.9 Association between working duration and stress level

Table 4.20 shows the association between working duration and stress level. It revealed that there was no significant association between working duration and stress level.

Table 4.20 Association between Working Duration and Stress Level

working duration (year)	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=140	%		
≤10	12	27.91	31	72.09	2.446	0.485
11 – 20	20	24.10	63	75.90		
21 – 30	18	31.58	39	68.42		
31≤	1	10.00	9	90.00		

4.7.10 Association between job status and stress level

Table 4.21 shows the association between job status and stress level. It indicated that there was no statistically significant association between job status and stress level.

Table 4.21 Association between Job Status and Stress Level

Work shift	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=142	%		
Fulltime	49	25.65	142	74.35	5.627	1.235
Other	2	100	0	0		

4.7.10 Association between work shift and stress level

Table 4.22 shows the association between work shift and stress level. It indicated that there was no statistically significant association between work shift and stress level.

Table 4.22 Association between Work Shift and Stress Level

Work shift	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=142	%		
Rotating 8 or 12 hours	26	20.97	98	79.03	5.369	0.068
Day shift	16	37.21	27	62.79		
Others	9	34.62	17	65.38		

4.7.11 Association between workload and stress level

Table 4.23 displays the association between workload and stress level. It revealed that there was a significant association identified between workload and stress level ($p<0.01$).

Table 4.23 Association between Workload and Stress Level

Workload	High Stress		Low Stress		χ^2	p-value
	(n=51)	%	n=143	%		
Heavy	44	31.43	96	68.57	6.857	0.009*
Moderate	7	12.96	47	87.04		

*Significant association ($p<0.01$)

4.7.12 Association between work environment and stress level

Table 4.24 shows the association between work environment and stress level. It indicated that there was no statistically significant association between work environment and stress level.

Table 4.24 Association between Work Environment and Stress Level

Work environment	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=143	%		
Good	7	21.21	26	78.79	1.090	0.580
Moderate	33	25.98	94	74.02		
Poor	11	32.35	23	67.65		

4.7.13 Association between work relationship and stress level

Table 4.25 shows the association between work relationship and stress level. It revealed that there was a significant association between work environment and stress level ($p<0.05$).

Table 4.25 Association between Work Relationship and Stress Level

Work relationship	High Stress		Low Stress		χ^2	p-value
	n=51	%	n=143	%		
Good	23	19.49	95	80.51	7.180	0.007*
Moderate+Poor	28	36.84	48	63.16		

*Significant association ($p<0.01$)

4.7.14 Association between social support and stress level

Table 4.26 displays the association between social support and stress level. It indicated there was significant association between social support and stress level.

Table 4.26 Association between Social Support and Stress Level

Social support	High Stress		Low Stress		χ^2	p-value
	N (n=51)	%	N (n=143)	%		
Good	17	17.35	81	82.65	8.171	0.004*
Moderate	34	35.42	62	64.58		

*Significant association ($p<0.01$)

4.8 The Comparisons of Job stress among Each Factors

Student' t-test and one-way ANOVA were used to compare mean of effort/reward ratio. P-value less than 0.05 was considered as significant.

4.8.1 Age

Table 4.27 shows the comparison of mean of effort/reward between age groups. It revealed that there was no significant difference between age group. Although there was no statistically significant difference, the mean of effort/reward ratio for the 36 to 45 age group was highest (0.714). The under 35 age group had the lowest mean (0.663).

Table 4.27 Comparison of Mean Effort/reward Ratios between Age Group

Age Group	n	Mean	SD	F [a]	p-value
≤35	61	0.663	0.331	0.82	0.443
36 – 45	83	0.714	0.239		
46≤	50	0.664	0.241		

a:Test of Homogeneity of variances : Levene statistic = 1.841, p-value = 0.162

4.8.2 Gender

Table 4.28 shows the comparison of mean effort/reward between genders. There was no significant difference between gender group. Although there was no statistically significant difference, it was found that female had lower mean.

Table 4.28 Comparison of Mean Effort/reward Ratios between Genders Groups

Gender	n	Mean	SD	Z [a]	p-value
Female	189	0.684	0.269	-0.367	0.713
Male	5	0.756	0.401		

a: using by Mann-Whitney

4.8.3 Marital Status

Table 4.29 shows the comparison mean of effort/reward between marital status groups. Although it revealed that there was no significant difference it was found that single nurses had higher mean of effort/reward ratios (0.701) than married nurses (0.672).

Table 4.29 Comparison of Mean Effort/reward Ratios between Marital Status Groups

Marital status	n	Mean	SD	F	p-value
Single	66	0.701	0.320	0.70	0.50
Married	117	0.672	0.240		
Others	10	0.767	0.270		

4.8.4 Income

Table 4.30 shows the comparison mean effort/reward between income groups. It reveals that there was no significant difference between income groups. Even though there was no statistically significant difference, it shows that the 30,000 to 35,000 bath groups had the highest mean (0.702). The over 35,000 bath group had the lowest mean.

Table 4.30 Comparison of Mean Effort/reward Ratios between Income Groups

Monthly Income	n	Mean	SD	F [a]	p-value
≤19,999	25	0.696	0.417	0.09	0.985
20,000 – 24,999	39	0.685	0.270		
25,000 – 9,999	41	0.675	0.252		
30,000 – 34,999	51	0.702	0.234		
35,000≤	35	0.672	0.239		

a: Test of Homogeneity of variances : Levene statistic = 1.064, p-value = 0.367

4.8.5 Commuting Time

Table 4.31 shows the comparison of mean effort/reward between commuting time groups. It reveals that there was no significant difference between these groups. Nevertheless, even there was no statistically significant difference, it was found that the over 60 minute group had the highest mean (0.778), and the under 30 minutes group had the lowest score (0.670).

Table 4.31 Comparison of Mean Effort/reward Ratios between Commuting Time Groups

Commute time	n	Mean	SD	F [a]	p-value
<30	107	0.670	0.231	0.88	0.416
30 – 60	75	0.692	0.317		
60<	12	0.778	0.296		

a: Test of Homogeneity of variances : Levene statistic = 0.718, p-value = 0.489

4.8.6 Job position

Table 4.32 shows the comparison of mean effort/reward ratios between job position groups. It reveals that there was no significant difference between job position groups. On the other hand, even though there was no statistically significant difference, the chief groups had the highest mean (0.710).

Table 4.32 Comparison of Mean Effort/reward Ratios between Job Position Groups

Job position	n	Mean	SD	F	p-value
Staff	165	0.689	0.275	1.41	0.247
Chief	22	0.710	0.253		
Other	7	0.520	0.218		

4.8.7 Work department

Table 4.33 shows the comparison of mean effort/reward ratios. It reveals that there was no significant difference between job department groups. Even though there was no statistically significant difference, it was found that nurses working in the outpatient section had the highest mean (0.767).

Table 4.33 Comparison of Mean Effort/reward Ratios between Work Department Groups

Work Department	n	Mean	SD	F	p-value
Outpatient	13	0.767	0.309	0.64	0.631
Inpatient	114	0.681	0.287		
Others	67	0.676	0.236		

4.8.8 Nurse registration term

Table 4.34 shows the comparison of mean effort/reward ratios between registration term groups. It reveals that there was no significant difference between these groups. Even though there was no statistically significant difference, it was found that the under 10 year group had the highest mean (0.718), and the over 31 year group had the lowest mean (0.547).

Table 4.34 Comparison of Mean Effort/reward Ratios between Nurse Registration Term groups

Period getting a nurse licence (year)	n	Mean	SD	F [a]	p-value
≤10	32	0.718	0.395	1.02	0.385
11 − 20	83	0.691	0.242		
21 − 30	66	0.686	0.244		
31≤	10	0.547	0.220		

a: Test of Homogeneity of variances : Levene statistic = 2.073, p-value = 0.105

4.8.9 Working duration in the hospital

Table 4.35 shows the comparison of mean effort/reward ratios working duration groups in the hospital. It reveals that there was no significant difference between these groups. On the other hand, even though there was no statistically significant difference, it was found that the under 10 year group had the highest mean (0.704) and the over 31 year group had the lowest mean (0.503).

Table 4.35 Comparison of Mean of Effort/reward Ratios between Working Duration in the Hospital

Working duration in the hospital (year)	n	Mean	SD	F	p-value
≤10	43	0.704	0.362	1.23	0.30
11 − 20	83	0.681	0.240		
21 − 30	57	0.702	0.243		
31≤	10	0.530	0.208		

4.8.10 Job Status

Table 4.36 shows the comparison of mean effort/reward ratios between job status groups. It reveals that there was no significant difference. Even though there was no statistically significant difference, it was found that fulltime nurses had a lower mean (0.684).

Table 4.36 Comparison of Mean Effort/reward Ratios between Job Status Groups

Job status	n	Mean	SD	t-value	p-value
Fulltime	191	0.684	0.272	-4.96	0.127
Other	2	0.939	0.067		

4.8.11 Working Shift

Table 4.37 shows the comparison of mean effort/reward ratios between working shift groups. It reveals that there was no significant difference between the different groups. Even there was no statistically significant difference, it was found that nurses working day shift had the highest mean (0.736), while rotating 8-12 hours shift had the lowest mean (0.663).

Table 37 Comparison of Mean Effort/reward Ratios between Working Shift Groups

Work shift	n	Mean	SD	F	p-value
Rotating 8,12 hours shift	124	0.663	0.284	1.27	0.284
Day Shift	43	0.736	0.245		
Others	26	0.715	0.250		

4.8.12 Workload

Table 4.38 shows the comparison of mean of effort/reward ratios between workload groups. There was a significant difference. Those who thought their workloads were heavy had a higher mean (0.734) than the moderate workload group (0.559).

Table 4.38 Comparison of Mean of Effort/reward Ratios between Workload Groups

Workload	n	Mean	SD	t-value	p-value
Moderate	54	0.559	0.226	4.32	<0.001*
Heavy	140	0.734	0.247		

* Significant association (p-value <0.001)

4.8.13 Work Environment

Table 4.39 shows the comparison of mean effort/reward ratios between work environment groups. It reveals that there was no significant difference between this group. On the other hand, even there was no statistically significant difference, it was found that those who thought their work environment was poor had the highest mean effort/reward ratio (0.707).

Table 4.39 Comparison of Mean of Effort/reward Ratio between Work Environment Groups

Work environment	n	Mean	SD	F	p-value
Good environment	33	0.614	0.222	1.39	0.252
Moderate	127	0.6881	0.287		
Poor environment	34	0.707	0.250		

4.8.14 Work Relationship

Table 4.40 shows the comparison of mean effort/reward ratios between work relationship groups. It reveals that there was a significant difference. The good relationship group had a lower mean (0.640).

Table 4.40 Comparison of Mean Effort/reward Ratios between Work Relationship Groups

Work relationship	n	Mean	SD	t-value	p-value
Good	118	0.640	0.239	-2.83	0.004*
Moderate+Poor	76 (74+2)	0.757	0.304		

* Significant association (p-value <0.01)

4.8.15 Social support

Table 4.41 shows the comparison of mean effort/reward ratios between social support. There was a significant difference. The good support group had a lower mean (0.640) than that of the moderate group (0.757).

Table 4.41 Comparison of Mean of Effort/reward Ratios between Social Support Groups

Social support	n	Mean	SD	t-value	p-value
Good support	98	0.629	0.28	-2.98	0.003*
Moderate	96	0.743	0.312		

* Significant association (p-value <0.01)

CHAPTER V
DISCUSSION

The present study was intended to indentify influencing factors of job stress among nurses in public hospitals in Ratchaburi province, Thailand. This cross sectional descriptive study was conducted from January, 2010, to March, 2010. Data was collected thorough self-administered questionnaire from 194 nurses. The aim of this research was to describe the job stress, socio-demographics, work characteristics and social support of nurses and to identify the associations between the independent variables and the prevalence of job stress.

5.1 Job stress among nurses

5.1.1 Effort-reward ratio

Effort-reward ratio was used to identity the prevalence of job stress. The effort-reward ratio was considered an indicator of job stress in this study. The mean of this ratio in this study, it was 0.69. The top quartile was categorized into the high-risk job stress group. The result found that 26.2 percent of the respondents had high stress and 73.8 percent had low stress. As a similar research, the study of physicians in Bangkok showed the mean of effort/reward ratio was 0.503 and the high stress group was 25.1 percent (49). In another study of Japanese workers who were employed in shift work, the average of this ratio was 0.65. Furthermore, a study of garment workers in Thailand showed the ratio was 0.46 (40). These facts suggest that the nurses in this research had higher job stress. This study showed that the nurses had very little reward compared to the nature of their heavy workload.

5.2 Relationship between job stress and socio-demographic factors

5.2.1 Age

The result showed there was no association between age and ob stress. However, it was found that the 36 to 45 year age group had higher job stress than other groups. This suggests that this group might have some job responsibilities. A previous study also revealed that the middle age group had the highest job stress, not the youngest group (49).

5.2.2 Gender

It was found that gender did not affect job stress. Even though there was no statistically significant difference, male nurses had higher effort/reward ratios than females. However, there were only five male nurses in this hospital. This should be considered in any future study.

5.2.3 Marital status

It was found that marital status did not significantly affect job stress. Even though there was no statistically significant difference between marital status groups ($p=0.50$), the mean job stress score was lower for the married group. This suggests that psychological support by spouses may reduce job stress. The study conducted by Tsukamoto (49) also revealed that married physicians had lower stress than single doctors.

5.2.3 Income

Income did not significantly affect job stress. Even though there was no statistical difference, it was still found that the lower income group had higher job stress. Previous research has shown that pay seems to be becoming more prominent as a major source of distress for nurses (14). In this study, however, the highest stress group was not the lowest income group. This might show this other stressors such as work responsibility and accountability. Generally, inadequate salary for work iaa work stressor. Monetary reward might be one of the most important forms of reward for highly professionalized jobs.

5.2.4 Commuting time

Nurses who commuted from distant areas had higher stress than those who lived closer to their work, even thouh there was no statistically significant difference. Taking a long time to commute might make workers tired.It might also reduce their free time.

5.2.5 Job position

It was found that job position had no significant affect on stress. Even though there was no statistically significant difference between the different job positions (p=0.247), it was found that chiefs had higher stress than normal staff. Previous study conducted of hospital workers found that different positions had different stress levels (49). Chiefs might have to be specifically responsible for their departments and staff. When some problems happen in their departments, the chiefs might take the initiative in solving them. This must be a high stressor.

5.2.6 Job department

It was found that job department had no significant effect on job stress. Even though there was no statistically significant difference, nurses working in the outpatient department had higher stress than nurses in the inpatient section. The total workload score of outpatient nurses was 16.8, whereas the score of inpatient nurses was 16.3 (The results were not shown). This means that the nurses in the outpatient department had heavier workloads that those in inpatient section.

The outpatient department is full of a lot of patients especially in the morning. So there might be heavy workloads there. Besides, some patients might have to wait for long time. Some of them might complain to the nurses. This would be highly stressful for the nurses there.

5.2.7 Nurse registration term

It was found that job stress had no association between nurse registration term groups. Even though there was no association, the result showed that the younger nurses had higher stress. A previous study also revealed that there was no

association among job experience (49). It, however, showed that doctors with short experience had higher stress than those who had worked for longer years. New staff needs to become accustomed to new circumstances and new duties. Regardless of any jobs, the workers might have some stress in the early years because they have to learn many things for the first time.

5.2.8 Duration at the hospital

Duration of working at the hospital had no effect effort/reward ratios. Even though there was no statistical association, it was found that nurses working in the hospital for less than 10 years had the highest mean of all the groups. This is in effect similar to the impact of the length of time a nurse has held a license. New nurses have to learn their duties for a first time, even if they have worked at another hospital.

5.2.8 Working shift

It was found that nurses working day shifts had the highest mean effort/reward ratio. Some previous studies identified significant associations between working shifts and job stress (13). Holt in 1993 found that shift work could lead to a variety of physical complaints including sleep and gastrointestinal problems (50). In the present study, however, permanent day shift nurses had higher stress than 8 hours shift nurses. High efforts such as heavy workload might be needed in day shift. The result actually proved that the total score of workload of day shift was higher than that of 8h rotation shift (day shift= 16.9, 8h rotation shift= 15.9, data were not shown).

5.2.9 Workload

It was found that heavy workloads caused high stress to nurses. There was a association between the amount of workload and stress level. 72 percent of the respondents (140 nurses) thought that their workloads were heavy. Heavy workloads are stressful for nurses and may lead to serious medical accidents.

Several studies have revealed 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 disease (51). Rainham in 1994 revealed that nurses experienced many demands on the job and were constantly coping with time pressures, maintaining their competence in a rapidly changing field, placing themselves at risk of physical assault, and experiencing ethical dilemmas (10). Nurses have to heed patients' requests even if they ask unreasonable things. Nurses also have to deal with patients' families at the same time. To make matters worse, patients' conditions sometimes deteriorate, and suddenly Nurses have to deal with such situations as well as cope with their routine work.

The job of nurses demands hard physical work. This can be seen particularly in public hospitals. In Thailand, public hospitals are facing cutting health costs (4). It is predicted that the workloads of nurses will increase in the future. Reducing nursing workloads may become very important.

5.2.10 Work environment

It was found that work environment no effect on job stress (p=0.252). Nevertheless, nurses who thought their environment was bad had high stress scores. Previous research has identified an association between job stress and work environment (20). Work Environment should be considered so that the nurses may work safely and actively. At the same time, comfortable relaxation space should be arranged because this study revealed that three-fifth of nurses (59.7%) thought that such spaces were insufficient.

5.2.11 Work relationship

It was found that work relationship had a association with effort/reward ratios. The nurses who thought that they had good relationships at work had lower job stress. Bullying management style by superiors is detrimental to workers' health (52). This study shows that encouraging good relationships might be a good intervention to reduce job stress.

5.2.11 Social support

There was an association between the amount of social support and stress level. The nurses who got good support from others had lower stress. In the conceptualization of coping pattern, social support is one of emotion management. If help is needed, social support might be a key factor in effectively promoting physical and psychological health.

Previous reserch has also identified an association between job stress and social support (53). Thus, Repetti found that workers experienced more negative moods on days when they had distressing interactions with their superiors and coworkers (54). In this study, nurses developed a tendency to lean more on family members for emotional and instrumental support rather than supervisors and colleagues at work.

CHAPTER VI
CONCLUSION AND RECOMMENDATIONS

6.1 Conclusion

This cross-sectional survey research was conducted from January, 2010, to March, 2010, to study job stress in nurses in public hospitals. The self-reported questionnaires were distributed and collected by coordinators in the hospital. Effort-reward imbalance questionnaire was used to assess job stress. The data were collected and one hundred ninety-four cases were used for analysis in this study.

The data were analyzed by the Minitab program. Descriptive statistics were used to describe the distribution of all the variables. Chi-square test was used to identified associations between independent and dependent variables. Student' t-test and one-way ANOVA analysis were used to compare the mean of effort-reward score.

6.1.1 The Prevalence of Job Stress

This study revealed that 26.2 percent of the respondents experienced high job stress. 73.8 percent nurses had low level stress. However, this does not necessarily that those all nurses have no stress.

6.1.2Mean of Effort/reward ratio

Mean of effort/reward ratio was used to compare with other studies. This study showed it was 0.69. It showed the sttress level in this study was relatively high, compared with the study of physicians (49) and the study of garment workers in Thailand (40).

6.1.3 Socio-demographic Factors

None of the socio-demographic factors had a significant association with job stress. However, some tendencies were revealed between the socio-demographics and job stress. With respect to age, the 36 to 45 year age group had higher stress.

Regarding income, the 30,000 to 35,000 baht income group had the highest stress levels although the lowest income group (less than 19,999 baht per month) had the second highest stress levels. Chiefs had the highest mean of effort/reward ratio. Nurses in the outpatient department had greater stress than those working in the inpatient section. Nurses who worked day shifts had higher stress than those working rotating shifts.

6.1.4 Workload

The result showed there was a significant association between workload and job stress. It revealed that 72 percent of the respondents thought their workloads were heavy and no one who thought they were light. Heavy workload was closely connected with job stress.

6.1.5 Work Environment

In terms of work environment, this study showed there was no significant association with job stress. Despite this, 17.5 percent of the respondents thought their work environment was bad and 17.0 percent thought it was good. This study also revealed that more than 60 percent of the respondents thought there was not enough comfortable relaxation space.

6.1.6 Work Relationship

The study revealed that there was a significant correlation between job stress and work relationship. It showed that good work relationship might reduce stress. In this study, 60.8 percent of the respondents thought their work relationship was good, and about 1 percent thought it was bad.

6.1.7 Social Support

In the social support category, the result showed that there was a significant association with job stress. This suggests that good social support might one way to decrease stress. This research identified that most support was provided by family members rather than their colleagues or supervisors.

6.2 Recommendations

To ensure that efficient nursing care is given to the patients, the following things are recommend. One is for administrators and the other is for nurses.

6.2.1 Recommendation to decrease job stress for administrators

Firstly, this research revealed that a lot of nurses felt their work loads were heavy, and that workload was significantly associated with job stress. It is, therefore, recommended that workloads should be distributed more equally among staff. This could lead to an increased sense of fairness at work. When nurses feel relief from excessive workloads, they have room to breathe and can work better.

Secondly, this study showed that the middle-age group had higher stress than other groups, even when they had higher income. Chiefs also had high stress. It might be because of their responsibility at work. Excessive responsibility might generate pressure. So responsibility should be also distributed equally among nurses.

Thirdly, nurses should receive sufficient reward for their efforts. It is considered that monetary reward could be the best way. However, if it is difficult to raise salaries, other forms of reward such as safety of work place and good relaxation space should be considered.

Finally, when nurses have job stress, it is recommended that proper counseling support facilities should be set up in the hospital. This could be another

way to reduce nurses' job stress. Furthermore, all staff should be regularly trained to manage their own stress.

6.2.2 Recommendation for nurses

When staff has good advice and counseling they might be expected nurses to have better motivation to work. Therefore, if nurses have troubles and stress, it is recommended that they should consult their supervisors and colleagues. Fortunately, the result showed that the majority of nurses felt work relationships and social support were good or moderate. They should give good support each other.

6.2.3 Recommendation for future study

Firstly, this research was collected only quantitative data through self-administered questionnaire. To find out more detailed information about job stress of nurses, qualitative techniques including interviews are recommended.

Secondly, this theory would be proper for occupational categories that burn out easily like nurses. Further study should develop the questionnaire by using this theory and the questionnaire with advanced questions in Thailand.

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APPENDIX

QUESTIONNAIRE

Part-I (Socio-demographic Factors)

Please check or write your answer which most applies to you.

Please answer ALL questions.

1. How old are you now?

_____ years old

2. What is your gender?

□1.Male □2. Female

3. What is your marital status?

□1.Single □2.Married □3.Divorced □4.Widowed □5.Separated

4. How much is your monthly income approximately?

_____ Bath/month

5. How long does it take to the hospital from your house?

_____ minutes

Part-Ⅱ (Work Characteristics)

Please check or write your answer which most applies to you.

Please answer ALL questions.

Ⅱ-1 General Job Information

6. What is your position?

□1.Staff nurse □2.Chief □3.Other(Specify)_____

7. Which department do you work?

□1.Outpatient department □2.Inpatient department □3.Other(Specify)_____

8. How many years have passed since you got the nurse license?

_____ years _____ month

9. How many years have you worked in this hospital?

_____ years _____ month

10. Select the description of your job status?

□1. Full time permanent employee □2. Full time temporally employee

□3. Part-time permanent employee □4. Others(Specify)_____

11. Select the description that closet to your WORK SHIFT?

□1.Rotating 8 hour shift □2.Rotating 12 hour shift □3.Permanent Day shift

□4.Permanent Evening shift □5.Permanent Night shift

□6.Other(Specify)_____

Ⅱ-2 Workload

12. How much work load do you have?

□1.Never □2.A little □3.Some □4.A lot

13. What quantity of work do others expect you to do?

□1.Never □2.A little □3.Some □4.A lot

14. How much overtime per day do you have?

□1.Never □2.A little □3.Some □4.A lot

15. How much time do you have to do all your work?

□1.Never □2.A little □3.Some □4.A lot

16. How much difficulties does your job have?

□1.Never □2.A little □3.Some □4.A lot

Ⅱ-3 Work environment

17. Does your work place have adequate space for work?

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

18. Does your work place have good hygienic status?

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

19. Does your work place have good air conditioning?

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

20. Does your work place have good illuminated condition?

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

21. Does your work place have a comfortable place for relaxation?

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

Ⅱ-4 Work relationship

22. There is friendliness among members at my department.

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

23. The members of my group are supportive of each other's ideas.

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

24. There is no person who is left and is isolated.

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

25. There is no one to behave arrogantly.

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

26. There is no dissension at my department.

□1.Strongly Disagree □2.Disagree □3.Not sure □4.Agree □5.Strongly Agree

Part-Ⅲ (Social Support)

Please answer ALL questions on the following pages simply by putting check sign which you think most applies to you.

Ⅲ-1.

27. How much can you rely on your supervisor when things get tough at work?

□1.Very much □2.Somewhat □3.A little □4.Not at all

28. How much can you rely on your colleges when things get tough at work?

□1.Very much □2.Somewhat □3.A little □4.Not at all

29. How much can you rely on your family members when things get tough at work?

□1.Very much □2.Somewhat □3.A little □4.Not at all

30. How much can you rely on your friends when things get tough at work?

□1.Very much □2.Somewhat □3.A little □4.Not at all

Ⅲ-2.

31. How much is your supervisor willing to listen to your personal problems?

□1.Very much □2.Somewhat □3.A little □4.Not at all

32. How much are your colleges willing to listen to your personal problems?

□1.Very much □2.Somewhat □3.A little □4.Not at all

33. How much are your family members willing to listen to your personal problems?

□1.Very much □2.Somewhat □3.A little □4.Not at all

34. How much are your friends willing to listen to your personal problems?

□1.Very much □2.Somewhat □3.A little □4.Not at all

Part-Ⅳ (Effort- Reward Imbalance)

For each of the following statements, please indicates whether you agree or disagree with it. If you agree or disagree, please also indicate how much you are generally distressed by this situation (1 = I am not at all distressed; 2 = I am somewhat distressed; 3 = I am distressed; 4 = I am very distressed). Thank you for answering ALL questions.

35. I have constant time pressure due to a heavy work load.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.

□3. I am distressed. □4. I am very distressed.

36. I have many interruptions and disturbances in my job.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.

□3. I am distressed. □4. I am very distressed.

37. I have a lot of responsibility in my job.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.

□3. I am distressed. □4. I am very distressed.

38. I am often pressured to work overtime.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.

□3. I am distressed. □4. I am very distressed.

39. My job is physically demanding.

□Disagree

□Agree

→ □1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4. I am very distressed.

40. Over the past years, my job has become more and more demanding.

□Disagree

□Agree

→ □1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4. I am very distressed.

---

41. I receive the respect I deserve from my superiors.

□Agree

□Disagree

→ □1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

42. I receive the respect I deserve from my co-workers.

□Agree

□Disagree

→ □1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

43. I experience adequate support in difficult situations.

□Agree
□Disagree

→ □1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

44. I am treated unfairly at work.

□Disagree
□Agree

→ □1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

45. I have experienced or I expect to experience an undesirable change in my work situation.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

46. My job promotion prospects are poor.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

47. My job security is poor.

□Disagree

□Agree

□1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

48. My current occupational position adequately reflects my education and training.

□Agree

□Disagree

□1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

49. Considering all my efforts and achievements, I receive the respect and prestige I deserve at work.

□Agree

□Disagree

□1. I am not at all distressed. □2. I am somewhat distressed.
□3. I am distressed. □4.I am very distressed.

50. Considering all my efforts and achievements, my work prospects are adequate.

□Agree

□Disagree

□1. I am not at all distressed. □2. I am somewhat distressed.

□3. I am distressed. □4.I am very distressed.

51. Considering all my efforts and achievements, my salary / income is adequate.

□Agree

□Disagree

□1. I am not at all distressed. □2. I am somewhat distressed.

□3. I am distressed. □4.I am very distressed.

BIOGRAPHY

NAME	Masaki Aoki
DATE OF BIRTH	August 10, 1973
PALACE OF BIRTH	Gif, Japan
INSTITUTIONAL ATTENDED	Kyoto Sangyo University, Japan 1991-1997 (Bachelor of Economics) Social Insurance Chukyo Nursing School, Japan 2002-2006 (Diploma of Nursing) Mahidol University AIHD, Thailand 2009-2010 (Master of Primary Health Care Management)
PRSENT POSITION	Registered Nurse, Japan