COMPARATIVE STUDY ON OCCUPATIONAL STRESS AMONG NURSING STAFF IN RURAL AND URBAN HEALTHCARE INSTITUTIONS

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ABSTRAK

Latar Belakang: Tekanan kerja adalah rakyat balas mungkin mempunyai apabila dibentangkan dengan tuntutan kerja dan tekanan yang tidak bersamaan dengan pengetahuan dan kebolehan.

Objektif: Tujuan kajian ini adalah untuk membandingkan tekanan pekerjaan dan meneroka hubungan antara pembolehubah demografi dan kerja di kalangan jururawat terlatih dari institusi penjagaan kesihatan bandar and luar bandar.

Metodologi: Terdapat enam puluh jururawat dari wad yang dipilih secara rawak daripada Hospital Tengku Ampuan Afzan dan Hospital Pekan telah mengambil bahagian dalam kajian ini. Data untuk kajian ini diperolehi melalui soal selidik untuk menentukan maklumat sosio-demografi manakala "Cara-cara Mengatasi Stress Inventory" telah digunakan untuk mengenal pasti strategi yang biasa digunakan oleh jururawat dalam menguruskan tekanan kerja. Di samping itu, "Nursing Skala Stress" (NSS) () juga gunakan untuk membandingkan tekanan kerja di kalangan jururawat di kedua-dua institusi penjagaan kesihatan bandar dan luar bandar. Berikutan itu, penilaian kortisol air liur telah dijalankan antara yang pertama sepuluh responden dari setiap institusi penjagaan kesihatan untuk mengkaji kehadiran tekanan penanda kortisol dalam air liur daripada responden apabila mereka bermasalah. Semua data dianalisis dengan menggunakan "Statistical Package for Social Science" (SPSS) dan kit ELISA untuk diagnosis kehadiran kortisol dalam air liur.

Keputusan: Dalam membandingkan tekanan kerja di kalangan jururawat di kedua-dua institusi penjagaan kesihatan bandar dan luar bandar, tidak ada perbezaan dalam skor faktor kerja seperti persekitaran kerja, waktu kerja, tuntutan kerja dan hubungan kerja di Hospital Pekan dan Hospital Tengku Ampuan Afzan. Kedua-dua skor hospital sedikit sama dalam nilai min. waktu kerja diperolehi dengan nilai min yang paling tinggi dalam kedua-dua institusi penjagaan kesihatan di kawasan luar bandar dan bandar. Sedangkan, kedua-dua hospital diperolehi dengan nilai min yang paling rendah untuk persekitaran kerja. Ini menunjukkan persekitaran kerja bukan faktor penyumbang kepada tekanan kerja di kalangan jururawat semasa waktu kerja adalah faktor yang mempengaruhi yang boleh menyebabkan tekanan kerja di kalangan jururawat.

Kesimpulan: Faktor-faktor ini perlu diambil kira untuk membangunkan program pengurusan stres di kalangan jururawat dari wad pada masa hadapan.

ABSTRACT

Background: Occupational stress was the response people may have when presented with work demands and pressures that were not equivalent to their knowledge and abilities and which challenge their ability to cope.

Objective: The purpose of this study is to compare the occupational stress and explore the relationship between demographic and work variables among staff nurses from urban and rural healthcare institutions.

Methodology: A total of thirty staff nurses from wards of Hospital Tengku Ampuan Afzan that randomly selected and Hospital Pekan had participated in this study. The data for the study were collected through questionnaires to determine the socio-demographic information while the "Ways of Coping with Stress Inventory" was used to identify the strategy that commonly used by nurses in managing occupational stress. Besides that, the "Nursing Stress Scale" (NSS) () was also use to compare the occupational stress among nurses in both urban and rural healthcare institutions. Following this, a salivary cortisol assessment was conducted among the first ten respondents from each healthcare institution to study the presence of stress marker cortisol in saliva of respondents when they are distressed. All data is analyzed by using "Statistical Package for Social Science" (SPSS) and ELISA kit to diagnosis the presence of cortisol in saliva.

Results: In comparing the occupational stress among staff nurses in both rural and urban healthcare institutions, there is no difference in scores of work factors such as work environment, work hours, work demands and work relationship in Hospital Pekan and Hospital Tengku Ampuan Afzan. Both hospitals scores slightly similar in the mean value. Work hours scored with the highest mean value in both healthcare institutions in rural and urban area. Whereas, both hospitals scored with lowest mean value for the work environment. This shows working environment is not the contributing factor of occupational stress among nurses while working hours is the influencing factor that can cause occupational stress among nurses.

Conclusion: These factors should be taken into consideration for developing stress management program among staff nurses from wards in the future.

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LIST OF SYMBOLS

%	Percentage
°C	Degree Celsius
±	Plus minus
µl	Microliters

LIST OF ABBREVIATIONS

rpm	Revolutions per minute
mL	Millilitres
s	Second
nm	Nanometres

CHAPTER 1

INTRODUCTION

1.0 Introduction

The nursing occupation is portrayed as one of the most stressful careers because of their wide job scope compared than other healthcare professionals in healthcare institutions. Figure 1.1 shows the daily basis responsibilities and duties that need to be carried out by staff nurses in their healthcare institutions. It is also showing that the nurses are required to do too many of non-nursing tasks such as clerical work. Besides that, staff nurses are responsible in providing physical and psychological support to patients and families, maintaining nursing inventory of supplies, supervising assigned team members, recording patients pulses and temperature, setting up the medical equipment to examine the patient or perhaps moving the heavy medical equipment from one to another room and helping patients with their basic needs such as serving meals for the patients, making beds and cleaning out their bedpans.

The aim of this research is to compare the risk occupational stress among nursing staff in rural and urban healthcare institutions. Occupation playing a pivotal role in every individuals' lives by contributing support in term of incomes, experiences and self-respect (Miranda, Filha, Aparecida De Souza Costa, & Rodrigues Guilam, 2013). However, at the same time this occupation might bring bad reflects or consequences to the worker's health and life. For figuring out the consequences of occupational stress that may affect their health many ways or approaches have been established to overcome this problem. It has been confirmed by few researchers that in several parts of the world occupational stress puts a significant impact among staff nurses in healthcare institutions including hospitals and clinics.

Moreover, occupational stress was the response people may have when presented with work demands and pressures that were not equivalent to their knowledge and abilities and which challenge their ability to cope. Job stress helps to improve performance up to a limit and then starts deteriorating. These are the factors or types of job stress such as high work demands, long working hours, poor relationship with family members and colleagues, poor work environment, clothing, economic challenges and so forth. Nursing profession has become a stressful occupation nowadays. The impact of job stress experienced by nursing staff was highly significant because it may affect not only the health care personnel but also their patient care services. Staff nurses are engaging with multiple roles such as carrying out medications to provide first- hand care to ill patients, be in charge of Intensive Unit Care, monitoring the conditions of the patients in wards, reviewing and maintaining patients' records and reports and also interacting with medical doctors. Female experienced more stress than male is one of our demographic factor. It was because male and female nursing staff perceived work-related stress differently.

In addition, patient behavior was the greatest source of stress in inter-relationship component. Extended work shift or on-call duty at night, long working duration, work relationship, working environments, job position and inadequate salaries were directly related to pressure experienced by staff nurses in healthcare institutions. Heavy work load and the adverse psychological environment at work were also the cause of stress among staff nurses in healthcare institutions. Several studies showed that higher levels of stress were reported arising from lack of resources, perpetual workload inadequate paying scale according to the educational level, poor relationships with colleagues and family and unrealistic expectations from management. The demand of nursing staff job causes the development and high offering of nursing courses in every private and government universities in Malaysia. This shows our country require more nurses in the healthcare institutions due to their heavy workloads.

If nursing staffs experience too many stress in their work and they failed to manage their stress effectively and efficiently this might lead to decreasing productivity and negative impact will later be experienced by their patients, colleagues and familial members. A review revealed that high proportion of caregivers has strong desire to leave their career or regret choosing the healthcare professionals (Godwin, Alexander

Suuk, & Harrison Selorm, 2017). These serious implications not only affect the quality of life for the individuals themselves, but also will affect the quality of healthcare institutions as well.

However, to our knowledge, a few studies pertaining to prevalence of occupational stress was conducted among those healthcare professionals who are nursing staffs in some healthcare institutions. Those studies explored different stressor factors in terms of demographic factors, workplace factors and other factors. Therefore, this study aimed to investigate the associated risk factors with occupational stress among nursing staff in healthcare institutions including hospitals and clinics in rural and urban areas. Hopefully, these findings can be used to guide in planning the coping ways in managing and reducing the stress related-health problem besides maintaining the quality of healthcare services in both rural and urban healthcare institutions.

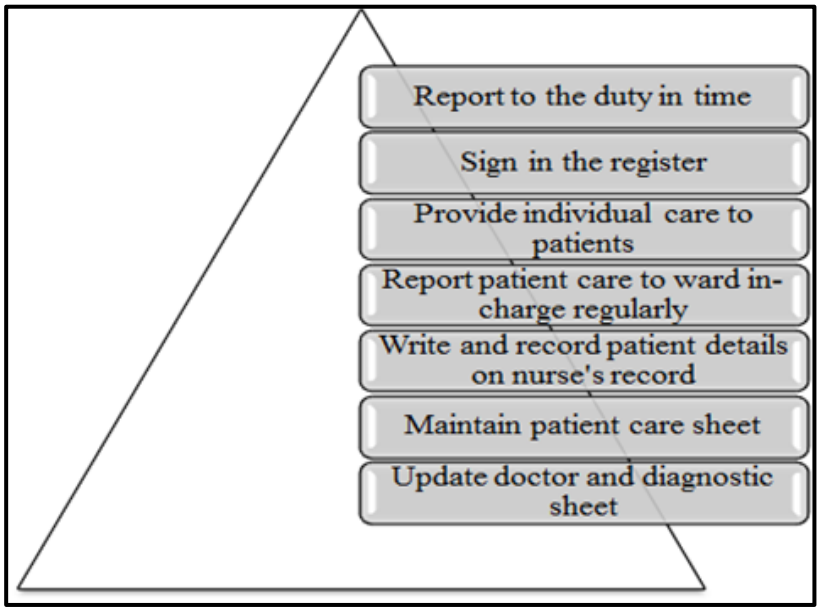


Figure 1.1: The responsibilities and duties of nursing staff in healthcare institutions

1.1 Study Background

Stress is defined as people total response to environmental demands and pressure. Stress is a necessary and unavoidable concomitant of daily living necessary because without some stress we would be listless and apathetic creatures and unavoidable because it relates to any external event, be it pleasurable or anxiety producing. A person's response towards stress depends on whether an event is appraised as a challenge or a threat (Lazarus & Folkman, 1984). Challenging stimulus can lead to positive outcomes such as motivation and improved task performance while threatening ones or distress can result in anxiety, depression, social dysfunction and even suicidal intention.

Although a high level of stress has been observed in staff nurses generally, the healthcare institution sector is a relatively new focus of concern. There is strong evidence to believe its workforce could represent a particularly vulnerable occupation group.

Most of what is known about stress amongst healthcare institution workers is derived from several studies conducted in the USA. In Mitchell & Blix reported that 66 per cent of a large sample of nursing staff perceived severe levels of stress at work at least 50 per cent of the time. These authors concluded that most of the stress experienced by the respondents related directly to work factors such as extended work shift and working hours. There were however, other causes within the profession of nursing staff included lacking of staff nurses to handle patient care services and high work demand from upper management.

Additional sources of nursing staff pressure identified in the literature include dealing with intolerant work environments (McGrath, Reid, & Boore, 2003). Further studies have concluded that a significant proportion of stress experienced by staff nurses is likely to emanate from the competing demands of career and management styles and long working hours (Sprcinelli &Gregory, 2007). The negative effects of occupational stress on psychological well-being of nurses have also been widely reported. Sometimes, the personal characteristics of staff nurses can affect their working relationship, for instances their relationship with their colleagues and senior staff.

Apart from work factors, demographic factors such as age, gender, marital status, number of children, years of experience, department and job position, salary and educational level are stressors that can influence nursing staff's job stress. In fact, an inadequate salary which is considered low paying that not according to their educational level can cause high stress among healthcare professionals especially staff nurses.

Instead of demographic factors and work factors, familial commitments and economic challenges that lied under other factors also have domination in influencing the occupational stress among patient's caregivers. The economic challenges facing by those caregivers population may alter their lifestyles which directly and indirectly linked to job stress.

To sum up, the main intention of this research is compare the factors associated with occupational stress among staff nurses in the rural and urban healthcare institutions Malaysia. This research is also to explore the relationships between occupational stress and demographic variables and also the relationships between occupational stress and work variables.

1.2 Problem Statement

The work lives of patient caregivers or nursing staff are tough because of their wide job scope compared than other healthcare professionals in healthcare institutions. This situation is arising from diverse factors such as the pressure from healthcare institutions, the pressure from colleagues, not so suitable work environment, family expectations, aging disability and the pressure to grow on the job (Mccarthy, Power, & Greiner, 2010). Moreover, the increasing number of healthcare institutions in Malaysia at both rural and urban areas for the recent years also creates a pressure among Malaysian staff nurses where they may face problems with their job as the healthcare managements start pushing their staff to facing competitive pressure from other healthcare units including hospitals and clinics. Other than that, keeping the healthcare institutions ranks becoming the setting of new goal to compete with other institutions as well as the filing and documentation burden. This may lead the nurses to face plenty of stress and therefore affect their personal characteristics and even their physical or mental health.

Earlier study by Ahsan et al. (2009) also found that the level of stress among nursing profession was significantly high. This study aims to identify a significant relationship between occupation-related variable which are demographic and work variables. Nursing staff have been selected because caregivers have been consistently identified as a group experiencing high stress at work (Sigler and Wilson, 1988). According to other studies, the frequent work shifts and on- call duty particularly at night that are said to be the common subject in nursing field can be a problem and interruption to the family life for those who are being a staff nurse in healthcare industry. In addition, nurses are required to do multitasking at one time due to lack of staff nurse in some departments of healthcare institution that could lead them to higher occupational stress. This situation may cause the nurses to work for extra hours to accomplish their job tasks and duties. Also, the high demand from organizational management may cause job stress among staff nurses where they are require to follow certain nursing management in order to provide a good quality of patient care services.

Besides that, the problem is there are lots of studies have been conducted on occupational stress among nursing staffs in some parts other countries such as Japan, China, England and Taiwan but so far there is no cross-sectional studies have been conducted on job stress among staff nurses in Malaysia healthcare institutions that mainly to find the difference in stressors that causing job stress in nurses that involved both rural and urban areas. Most of research has been focused to only one particular study location of healthcare institutions and not both rural and urban areas in one study. So, due to this there is still no proper actions or initiatives were taken in minimizing and managing stress impacts among high experiences nurses. Therefore, this study is focusing on both rural and urban healthcare institutions to compare the risk factors associated with occupational stress among nursing staffs from two different areas.

In context of rural and urban area, they might be few differences among the staff nurses working in rural and urban healthcare institutions. First, the nurse who working in rural healthcare institutions might face low stress level because the population in rural area is less compared than the population in urban area. The number of beds in rural healthcare institution is less and the number of patients also less when it is compare with urban healthcare institutions. Only those less serious health issue cases will be treated in rural hospital whereas those serious cases will be sent to the urban

healthcare institution. The living cost of nurses in rural area may be different compared than those nurses in urban area. So, those nurses living in rural might be satisfied with the salary paying to them but nurses in urban may be not due to the high accommodation fees, transportation and food expenses. The fast food is mushrooming everywhere in urban and the people living in urban really addicted to these expensive instant food. In rural, there are no such fast food shops and this may cut their costs in spending much money for instant foods. In other words, the impact of economic challenges is really less among nurses in rural area compared than nurses in urban area. The aim of this study is to compare the occupational stress among nurses working in rural and urban healthcare institutions based on the matter as stated above.

The effects or implications of stress towards nurses are considering another important context that need to be studied in term of work performance, familial and friends relationship and health status. When nursing staff experiencing high occupational stress in their working place, this might lead to high staff turnover and contribute to workforce shortages by prompting nurses to leave their profession. This also may reduce the quality of patient care in a healthcare institution and directly can lower their work performance. Facing stress can disturb their physical and mental health and affect their body biological system. Stress among nurses may cause them to isolate themselves from their family members and this will create problems in their familial commitments.

Not only that, in the previous studies researchers used only those awareness method which is self-administered questionnaires in determining the level of stress among the respondents without using any biological stress marker such as saliva, blood and urine. The use of saliva, blood and urine as the methodology of cortisol assessment is needed to be considered in the study of occupational stress so that it can give the reliable and accurate results which are correlating to the stressors that influence occupational stress level. The theory that cortisol is increased when an individual is distressed is the hypothesis revealed from the results of laboratory studies.

1.3 Research Objectives

The following will discuss on the general and specific objectives of this study

1.3.1 General Objective

I. To compare the occupational stress level in both rural and urban areas among staff nurses in healthcare institutions in association with work factors.

1.3.2 Specific Objective

II. To explore the relationships between demographic variables and work variables.
III. To study the presence of stress marker cortisol in saliva of respondents when they are distressed.

1.4 Research Questions

The following are the questions that need to be answered in this study:

I. What are the comparisons of occupational stress level in both rural and urban areas among staff nurses in healthcare institutions in association with work factors?
II. Is there a significant relationship between demographic variables and work variables?
III. Is there a correlation between occupational stress and presence of cortisol in saliva of respondents?

1.5 Hypothesis

I. There is a significant relationship between occupational stress and work variables.
II. The presence of stress marker cortisol in saliva of respondents is positively correlating with the stressors among nursing staff.

1.6 Significance of Study

This research can contribute benefits in term of theoretical contribution. According to previous studies, there shows a positive relationship between work demand, inadequate salaries and poor work condition from healthcare institutions with stress among the nursing staff.

This research is useful and helpful to the individuals, organization and community because nowadays all respected healthcare institutions' authorities are very concerning about the health of workers or nursing staff in order to ensure all of them have a healthy mental so that this can increase the quality of the healthcare institution to the top ranks in term of healthcare and patient care services.

In term of individual, this study can bring advantage to the nurses because it is proven that facing the high stress level with hectic routines daily can lead them into health and mental problems. And this also increases the chances of having high depression and restlessness in them. The high effects of job stress among nursing staff can be seen by their physical, behavioral and emotional symptoms.

In term of organization, this research is useful as the organization have to be ensuring the nursing staffs are not given so much of workloads including the management activity such as filing and documentation of records and reports of patients. Nowadays, healthcare profession particularly nursing staff has become a common worldwide profession in Malaysia.

By doing this research, some actions can be recommended and taken to reduce the risk of stress among nursing staffs in order to manage and minimize the health and mental problems and to practice a healthy lifestyles.

To sum up, the study will be useful to decision-makers of all leading healthcare institutions in Malaysia, who, based on the findings of the study, can use the findings as bases for policies for retention of staff nurses and also for stress management trainings.

1.7 Scope of Study

This research is a cross sectional comparative study to conduct among nursing staff in selected rural and urban healthcare institutions in Kuantan and Pekan. In selecting the respondents, a simple stratified random sampling method will be used in all healthcare service wards which available at both rural and urban healthcare institutions. All wards in the healthcare institutions from both rural and urban included Medical surgical unit, Maternity unit, Emergency unit, Male and Female ward, Paediatric, Intensive Care Unit and so forth. A cross-sectional study will be undertaken between the rural and urban healthcare institutions to study the demographic variables between work factors that lead staff nurse to occupational stress.

The main idea is to investigate the relationship between demographic variable factors and work factors that associated with occupational stress and to identify the stress level among the nursing staff from different area of healthcare institutions such as urban and rural area. Identifying the factors included demographic factors and work factors that impact the physical and mental health of staff nurses by facing stress is a very important issue in occupational health.

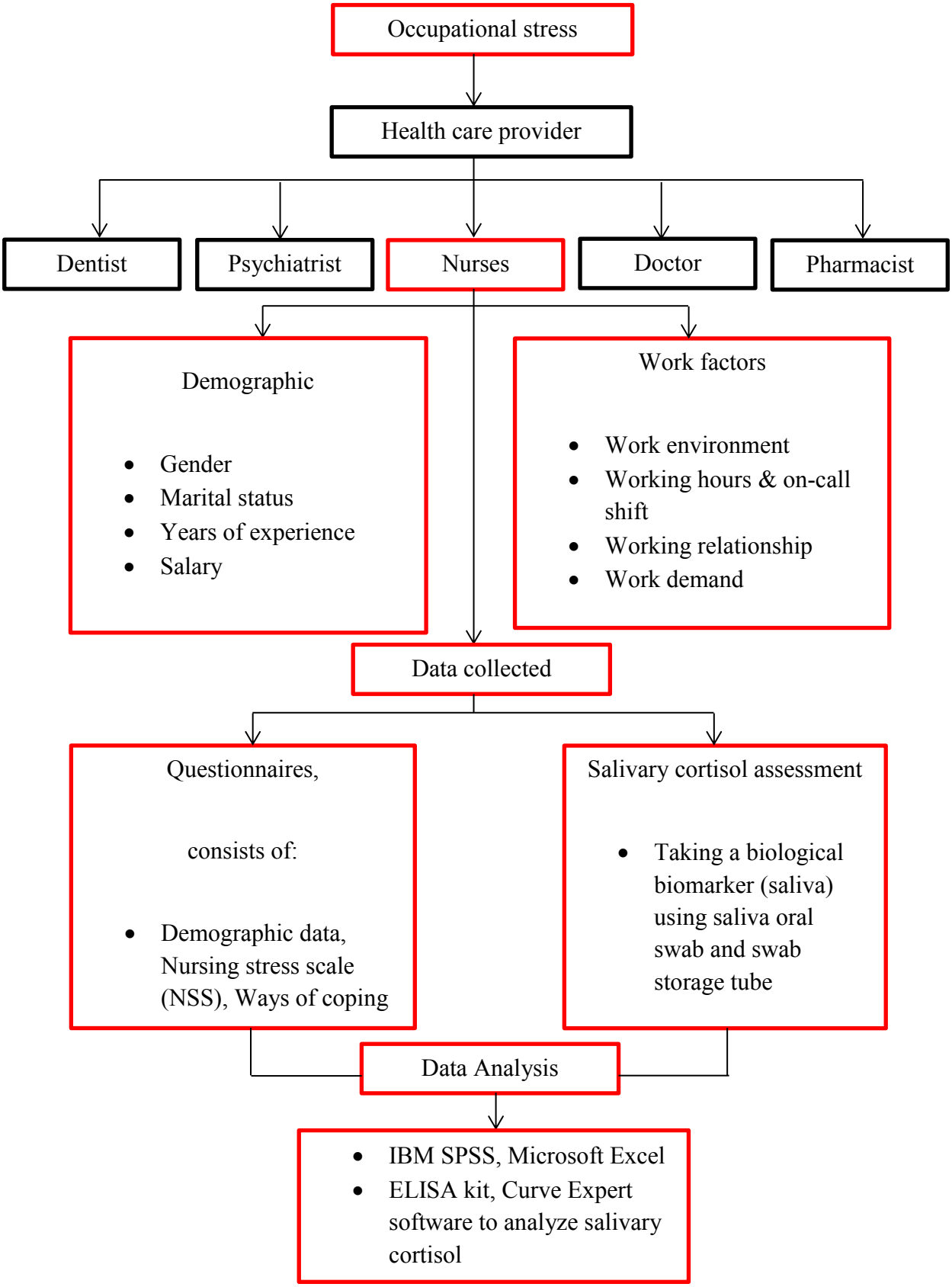
This research is requires to choose two healthcare institutions in Pahang including one rural and one urban institutions. The chosen healthcare institutions are Hospital Tengku Ampun Afzan as an urban healthcare service hospital and Hospital Pekan as another healthcare service hospital which located in rural area. Then, about 30 nursing staffs from all wards are randomly selected from the two selected healthcare institutions in Malaysia. So, the total respondents of this research will be about 60 respondents.

All permanent full-time staff nurses that worked in a ward only and Malaysian nationality were included in this study. The exclusion criteria were those staff nurse who was seconded to the Ministry of Health, trainee and part-time nurses. A simple random sampling method will be implemented to ensure high degree of representatives from all strata or layers in the population in order to increase the generalizability of the study.

1.8 Expected Results

Occupational stress scores must be significantly higher among staff nurses in healthcare institution from urban area compared to healthcare institution from rural area due to inadequate salary, higher work demand, frequent on-call duty at nights, long work duration, poor relationship in working place and poor quality of working environments. All the main factors such as demographic factors and work factors must have significant relationship with occupational stress among nursing staff in rural and urban healthcare institutions. Besides that, this study expected to have differences in stressors that influence occupational stress among nursing staff from two different areas which are rural and urban. This study is also expected to identify the ways to coping with occupational stress that commonly used by the nursing staff in both rural and urban healthcare institutions in managing occupational stress. Another result that expected from this study is to find the proper and best way of managing stress that proposed by the nursing staffs that had went through the job stress frequently in their working life. Last but not least, it is expected that the increasing of adrenal cortisol level in saliva as a biological marker will give a reliable and accurate result in detecting the stress responses among the nursing staff.

1.9 Conceptual Framework



1.10 Definition of Variables (Conceptual and Operational)

1. **Work factors**

   Conceptual definition: Any condition of a job that can result in illness or injury.
   Operational definition: A term used to describe the main causes which can lead the healthcare profession especially staff nurses to have the possibilities of facing based on their working duration and employment period.

2. **Demographic factors**

   Conceptual definition: The factors that derived from an individual characteristic that firmly influences their behaviors which is differing from person to person that results in a various set of notions and attitudes.
   Operational definition: Individual factors such as gender, age, salary and marital status are the criteria that need to be considered when study about the factors that causing stress among nursing staff in healthcare institutions.

3. **Biomarker**

   Conceptual definition: A molecule, gene or characteristic that occurs naturally by a specific pathological or physiological process.
   Operational definition: Indicator that used to measure and evaluates biological state or condition such as saliva.

4. **Occupational stress**

   Conceptual definition: A major hazard for abundant occupations particularly for staff nurses due to high workloads, long working durations and extended work shift.
   Operational definition: The worker's response when facing occupation requirements and physical force that not coordinated to their knowledge and strength.

5. **Stress**

   Conceptual definition: The responses of the action of body in a person by releasing chemicals into blood due to the demands and challenges.

   Operational definition: Physical responses to mental or emotional pressure that experiencing by staff nurses in their healthcare workplace.

6. **Coping**

   Conceptual definition: Efforts in facing and managing the difficult circumstances with smoothly by an individual.

   Operational definition: Ability of nursing staff in dealing with their responsibilities and working environment strongly in a stressful condition with a good manner.

7. **Salivary cortisol**

   Conceptual definition: Rise or fall daily pattern of main adrenal hormone levels in saliva that caused by stress response.

   Operational definition: Response of nursing staff towards stress can been seen through the rise or fall pattern of main adrenal hormone levels that presence in their saliva.

CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

This chapter presents the criterion of occupational stress among nursing staff from both rural and urban healthcare institutions which discussed the stressors and the stress managing strategies. All the discussion in this part will be based on the relevant material that related to the study.

Among many health professionals, staff nurses are playing a pivotal role in providing health care services in every branch of healthcare institutions. This study is focusing on nursing staff because they are engaging with multi tasks such as sign in a register, provide individual care to patients, write and record patient details on nurse's sheet and so forth. Not only that, this study also showing the factors associated with occupational stress among staff nurses from both rural and urban healthcare institutions. There is a huge difference in lifestyles of staff nurses who are working in rural and urban healthcare institutions which influenced occupational stress among them which derived from contrast stress factors.

2.1 Demographic Factors

Demographic factors consist of gender, marital status, years of experience and salary. Age, department or rank, number of children and educational level are variables that did not study in this research. But still this factor is taken into consideration which may influence the occupational stress among nursing staff.

Research studies have shown that nurses working in wards such as intensive care units, emergency rooms, surgical rooms, maternity units and other highly stressful areas experience higher levels of job stress (Hamaideh & Ammouri, 2011). According to Hirokawa (2016), nurses working in special ward experience higher degree of stress. This is because the patients who are admitted in special wards are usually from higher socio-economic class paying more for the hospital services they receive. Meeting the demands of such a class of service receivers can be naturally stressful. This factor along with compromised training received could be a major determinant of this job stress in healthcare institutions. Fewer studies are to be found on nurses employed in rural healthcare institutions, but it was identified that those nurses who are working in less population area particularly in these departments experienced a low-to-moderate frequency of stress in their work compared than the staff nurses working in urban healthcare institutions as it is located in a high population area (Mccarthy et al., 2010). This is because the number of beds provided in rural area healthcare institutions will be in a very few quantity compared to the healthcare institutions located in urban area so the patient admissions are fewer according to the capacity of the hospital (Eleni, Fotini, & Maria, 2008).

Following this, those staff nurses who are entitled with high rank position might have high work demand in their job compared to those nursing staff with low rank position. This also can bring distress among those populations as they need to engage themselves in clerk managerial along with other tasks. This might lead them into delay in completing their nursing tasks due to inadequate time.

Other than this, salary also playing an important role in causing occupational stress among patient caregivers in the healthcare fields. For those nursing staff who is working in urban healthcare institutions with median range of monthly income might undergo financial tights due to their high expenses in urban areas which covered their rental pays, daily food sources, bills and so forth. This also can be another reason that may put nurses in stress risk when their income does not meet the basic needs of life. However, when it's come to those staff nurses who living and working in rural areas their daily expenses will be totally different which is lesser than staff nurses lives in urban areas (Shah, Rehman, Ali, & Siddiqui, 2016). So, nursing staff from rural areas might be managed to run their family lives with the minimum monthly salary income

without any high expectations. Based on this, salary might not be the occupational factor that causing stress among staff nurses in rural healthcare institutions but this is statement is unlikely to those staff nurses from urban medical institutions.

Based on many studies, age and gender will not be significantly associated with occupational stress among the nursing staff of healthcare institutions (Ma et al., 2015). Still, gender is included as variable to be studied in this study research.

Whereas, the educational level of staff nurses such as diploma, degree, postgraduate degree and PhD degree is not taken as a variable to be studied in this study. This may affect the physiological of the staff nurses when their job position in healthcare institutions is not proportional to their level of education (McGrath et al., 2003). Plus, paying full attention about the welfare of their children is another matter that led the staff nurses into a distress physiological in their workplaces. Their thoughts on the education, growth and well-being of their children may have a significant effect in the working performance of staff nurses in their healthcare center which leads to the poor quality of patient services. This statement concluded that number of children can be included as a job stressor among the others (Almojali, Almalki, Alothman, Masuadi, & Alaqeel, 2017).

In a recent study that conducted in India, it shows that there is significant association between coping and marital status of the nurses and as the median coping score of married nurses is lower than nurses who are single, it is interpreted that coping ability of married nurses is low (Shah et al., 2016). In other words, significant association is also being observed between stress and marital status where married subjects being more stressed than subjects who are single. It may be due to the added responsibilities of the married life which in turn may contribute to the stress at work. Analysis of the median coping score reveals that nurses who have the experience of 6-10 years are experiencing occupational stress in their lives (Dumitrescu, 2014). In a study, the nurses who claimed their jobs free from stress were having mean duration of job 5.64 years whereas nurses whose mean years of working was 10.14 find their jobs extremely stressful (Shah et al., 2016).

Ernst M E, Mesmer P R, Franco M, Gonzalez (2010) JL identified that occupational stress is correlated significantly and inversely with age, years as a nurse,

and years in the organization. This could be because the nurses get adjusted with the work environment as they gain experience and become older. By referring to the demographic data of staff nurses from both rural and urban healthcare institutions, it is easy to identify the ability of nursing staff to cope up with their occupation that interfering their personal traits according to their working experience as a nurse.

2.2 Work Factors

Work factors comprises of working hours, working environment, working relationship, work demands and clothing. Clothing as a stressor is a variable that will not study in this research. But still this factor is taken into consideration which may influence the job stress among nursing staff. The quality of clothes wearing by the patient caregivers can make them feel uneasy and less comfort with their attire and appearances (Shah et al., 2016). Not only that, the colour of the clothes wearing by the staff nurses which is white also can cause them feel lacking of confident in approaching their patients.

The staff nurses who are have to work overtime for few hours will make them very exhausted with additional work demand that need to carry out which can affect their mental and physical in order to work. Frequent night shifts or on-call for staff nurses are considered a stressor because night work provides continuous sleep deficit, vigilance problems and mood alterations (Article & Bezerra, 2012). It is also predisposes one to a risk to the quality of patient care. Thus, the work performed in nocturnal hours without enough break period during the shift does not provide a good quality of life for the nursing professionals.

Moreover, the working environment is one of the most important recourses of occupational stress. Nurse's environment include an enclosed atmosphere, time, pressures, excessive noise, sudden swings from intense to mundane tasks, no second chance, unpleasant sights and sounds and long standing hours (Godwin et al., 2017). Nurses are trained to deal with these factors but stress takes a toll when there are additional stressors. Stress is known to cause emotional exhaustion to nurses and this leads to negative feelings toward those in their care.

The working conditions seem to be deteriorating at the same time that a severe and protracted nursing shortage is occurring (Rosenthal & Alter, 2012). In facing the

difficult patients, it is a source of occupational stress among nursing staffs in healthcare institutions. When we have a deep study on environmental stressors such as medical machineries noises particularly in emergency patient care rooms, e.g. Intensive Unit Care can cause distress as they may find it annoying to them for hearing such noises all the time (Rosenthal & Alter, 2012). The installation of medical equipment's wires which messed up the working area of staff nurses also can be said as stress factor where it can lead them to slip, trip and fall as they wrongly stepped on it during their boss walks.

According to Yeboah & Ansong, (2014), work demands is defines as all variables identifying with the workloads and work design patterns where they are working since these can have huge impacts on their physical and mental prosperity.

In addition, relationships with other staff coworkers, physicians, head nurses and other departments also predictors of psychological distress. Relationships between staff nurses and nurse managers are particularly important when examining stress (Jennings, 2008). Interpersonal relationships with other health care personnel are utmost important aspect when measuring the stressor of occupational among staff nurses in medical center. Nurses might be get disturbed by mentally when their physicians or supervisor criticized them. Conflict with a physician or supervisor is also another stressor that influences occupational stress in a staff nurse in their workplaces. With regards to the issue of workplace relationship, Tracey (2000) clarify this as the presence or generally of a positive work environment. The relationship in working place will be remained conflict and support unsatisfactory behavior when there is no positive work environment.

The Table 2.2 shows the causes of occupational stress under work factors classification that experienced among staff nurses (Godwin et al., 2017).

Table 2.1: Causes of occupational stress experienced among staff nurses.

Causes of Stress	**Yes N (%)**	**No N (%)**
Nursing difficulty patients	52 (71.23)	21 (28.77)
Inadequate staffing levels	67 (91.78)	6 (8.22)
Harassment from aggressive relatives	47 (64.38)	26 (35.62)
Nursing patient without relatives	46 (63.01)	27 (36.99)
Working with incompetent staff	29 (39.73)	44 (60.27)
Frequent night duty	49 (67.12)	24 (32.88)
Lack of break period during shift	60 (82.19)	13 (16.44)
Handling a large number of patients alone	61 (83.56)	12 (35.62)
Inadequate delegation of responsibilities	44 (60.72)	29 (39.73)
Job insecurity	42 (57.52)	31 (42.47)
Lack of opportunity for growth/promotion	55 (75.34)	18 (24.66)
Unfriendly relationship with superior, colleagues and physicians	45 (61.64)	28 (38.36)
Long work hours	44 (60.27)	29 (39.73)
Exposure to infectious diseases	50 (68.49)	23 (31.51)
Needle-stick injuries	47 (64.38)	26 (35.62)
Inadequate motivation	1 (1.37)	72 (98.63)

N=Number and %=Percent

2.3 Salivary Cortisol Assessment

Salivary cortisol assessment is the best biological marker instrument to detect the stress responses among nurses through the elevation of cortisol level in saliva. According to the previous studies, this biomarker of stress is highly recommended for research studies because it can give consistent and accurate results. Salivary measures are the easy to collect method with minimal invasive and it is rapidly advancing in research field.

The materials that need to be prepared for salivary cortisol assessment are SalivaBio Oral Swab (SOS), ELISA kit or known as Enzyme-linked immunosorbent assay, swab storage tubes (SST), color-coded tube caps, plastic zip-lock bag, saliva collection instruction sheet, gloves and storage box. The respondents must record the start and stop time of saliva collection in the saliva instruction sheet or schedule. The ELISA kit consists of ELISA plate, positive control, negative control, dilution buffer, stop solution and wash solution.

The purpose of using SalivaBio Oral Swab (SOS) is to collect saliva sample whereas the use of ELISA kit is to study the biological marker of stress by diagnosis the saliva sample. Before conduct this assessment, there are few protocols and considerations needed to be taken on collecting sample and processing the saliva samples.

Normally, the level of cortisol in the saliva rises and falls in a "diurnal variation" pattern which peaking early in the morning then declining throughout the day and reaching its lowest level about midnight as shown in Figure 2.1.

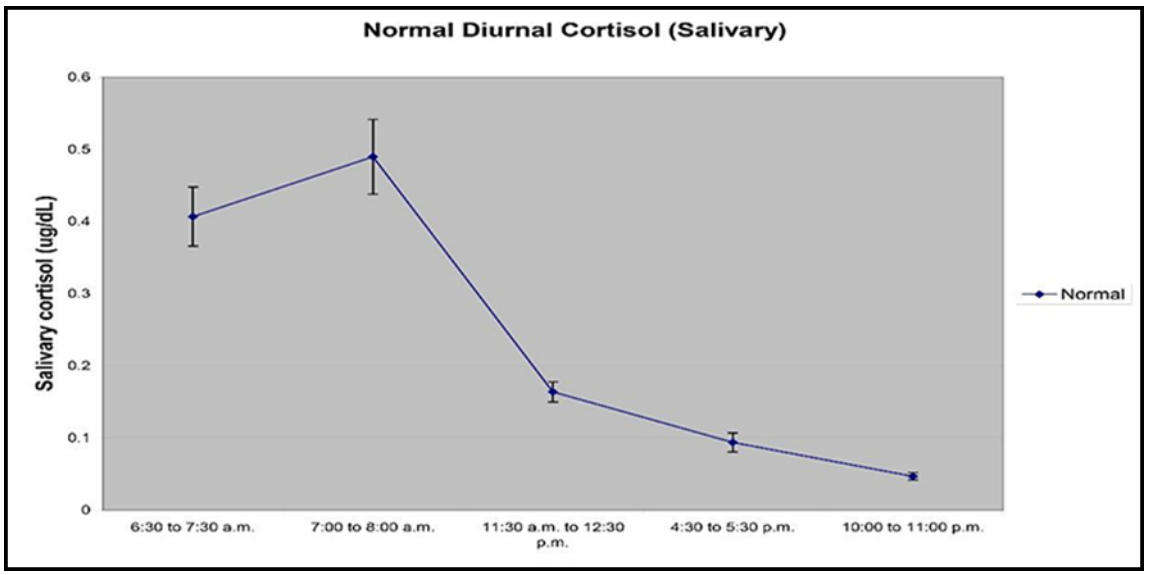


Figure 2.1: Level of cortisol in saliva in a "diurnal variation" pattern (Shea & De Cieri, 2011)

2.4 Conclusion

This chapter provides a review of a literature on the topic of occupational stress and associated risk factors among nursing staff from both rural and urban healthcare institutions. The first section discussed about the factors that causing occupational stress among staff nurses such as demographic factor, work factor and other factor. In the second section, the discussion is about the common symptoms of stress among staff nurses, this for instance physical symptom, emotional symptom and behavioral symptom. Whereas, the following discussion in the end of this chapter is the strategies in coping with occupational stress among staff nurses.

CHAPTER 3

METHODOLOGY

3.0 Introduction

This chapter focus on details about the study design, study location, target population, sample size, the inclusion and exclusion criteria, list of instrument used as well as the process and procedure method.

3.1 Study Design

The study design for this research is cross-sectional study between the population which comes from two different areas such as rural and urban. To identify the differences in stressor that leads to the occupational stress among nursing staff in healthcare institutions, qualitative and quantitative study method was the perfect study design that used in this research study. Besides, this research design also requires in exploring the relationships between occupational stress and work variables. The best research design usually relies upon the research questions of the research study. On the other hand, pretesting and pilot study was not conducted among the selected staff nurses as respondents before delivered the completed questionnaires because the Nursing Stress Scale is a exist questionnaire which is created by other researcher. The reliability and validation of the questionnaire is already tested by a researcher in his previous study.

3.2 Study Location

The study has been conducted in the healthcare institutions in Pahang. However, only Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan were chosen as study location at urban and rural area for this research. The pictures in Figure 3.1 show the location of the study.

The Figure 3.1 (a) is Hospital Tengku Ampuan Afzan and Figure 3.1 (b) is Hospital Pekan. In conducting this research, these two healthcare institutions was the suitable locations as Hospital Tengku Ampuan Afzan Kuantan located in urban area whereas Hospital Pekan is located in rural area. This aspect also fulfills the main aim of the research that is the comparative study on occupational stress among nursing staff from both rural and urban healthcare institutions.

Figure 3.1(a): Hospital Tengku Ampuan Afzan

Figure 3.1(b): Hospital Pekan

3.3 Study Population

The target of this study was on registered staff nurses with the aim to study the stressors that influenced the occupational stress among these selected population. The randomized stratified sampling method was used to select the respondents from both urban and rural healthcare institutions which are Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan to conduct the comparative study on job stress. The randomized stratified sampling method has been chosen because this research study needs sample from a heterogeneous population.

3.4 Study Sample

The study sample of this research was the nursing staff who working in both selected urban and rural healthcare institutions in Pahang which are Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan. The staff nurses were chosen only from the wards in both Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan. In other words, the nursing staffs are selected randomly from all wards that comprises at both rural and urban hospitals. Those nurses who were willing to participate in the study and available in the time of data collection also select as respondent. These for example Medical surgical unit, Maternity unit, Emergency unit, Male and Female ward, Paediatric, Intensive Unit Care department and so forth.

3.5 Study Size

The total number of respondents that included in this study is 60 staff nurses for the both Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan. The reason why all the staff nurses from both hospitals are not included in this study because it is unsure that all of them are available at the time of data collection. Based on Krejcie & Morgan's (1970) table for determining sample size, for a given population of 800, a sample size of 260 would be needed to represent the population. But, due to the reason as stated in Chapter 5.3, only 30 respondents were chosen from each rural and urban hospital. In term of gender variables, both male and female staff nurses are included in this research study to have equality and avoid gender bias.

Table 3.1: Determining Sample Size of a Known Population

Table for Determining Sample Size of a Known Population									
N	S	N	S	N	S	N	S	N	S
10	10	100	80	280	162	800	260	2800	338
15	14	110	86	290	165	850	265	3000	341
20	19	120	92	300	169	900	269	3500	346
25	24	130	97	320	175	950	274	4000	351
30	28	140	103	340	181	1000	278	4500	354
35	32	150	108	360	186	1100	285	5000	357
40	36	160	113	380	191	1200	291	6000	361
45	40	170	118	400	196	1300	297	7000	364
50	44	180	123	420	201	1400	302	8000	367
55	48	190	127	440	205	1500	306	9000	368
60	52	200	132	460	210	1600	310	10000	370
65	56	210	136	480	214	1700	313	15000	375
70	59	220	140	500	217	1800	317	20000	377
75	63	230	144	550	226	1900	320	30000	379
80	66	240	148	600	234	2000	322	40000	380
85	70	250	152	650	242	2200	327	50000	381
90	73	260	155	700	248	2400	331	75000	382
95	76	270	159	750	254	2600	335	1000000	384

3.6 Inclusion and Exclusion Criteria

All staff nurses working in hospital wards were eligible to participate in this study. Equal opportunity was provided to both male and female nurses in wards. All permanent full-time staff nurses that worked in a ward only and Malaysian nationality nurses working in both hospitals that located in rural and urban areas were included in this study. All races of nurses are included in this study. The exclusion criteria were those staff nurse who was seconded to the Ministry of Health, trainee and part-time nurses. A simple random sampling method was implemented to ensure high degree of representatives from all strata or layers in the population in order to increase the generalizability of the study. In short, selection of participants in the study was irrespective of age, gender, marital status, experience and type of work.

3.7 Data Collection Instrument

These are the few instruments that used in gathering the data requirement to measure the occupational stress among nursing staffs in selected healthcare institutions such as self-administered questionnaires that included socio-demographic data, Nursing Stress Scale (NSS), and a biological marker method which called as salivary cortisol assessment. The data was collected using the questionnaire that was adopted from the previous studies. Numerous literatures from the previous studies were referred in order to find the relevant indicators that have significant relationship with occupational stress. So, these two sets of finalized questionnaires were distributed to the respondents in order to gather the appropriate data. Those questionnaires have been translated into the respondents' native language or in other words, it was printed with bilingual languages so that they can comprehend the items fully. Table 3.2 shows the types of data collection instrument that used according to the objectives of the research.

Table 3.2: The types of data collection instrument in associate with objectives

No.	Objectives	Data collection instrument
1	To compare the occupational stress level in both rural and urban areas among staff nurses in healthcare institutions in association with work factors.	Socio-Demographic Data Questionnaire and Nursing Stress Scale (NSS)
2	To explore the relationships between demographic variables and work variables.	Nursing Stress Scale (NSS)
3	To study the presence of stress marker cortisol in saliva of respondents when they are distressed.	Salivary Cortisol Assessment

3.7.1 Socio-Demographic Data

The demographic data questionnaire was constructed by the researcher itself of the study. In this set, the information and details were gathered from those questionnaire including respondent's name, gender, marital status, years of experience and monthly salary income. Those socio-demographic data will be linked with nurses work factors in association with occupational stress.

3.7.2 Nursing Stress Scale (NSS)

The Nursing Stress Scale (NSS) instrument is a set of questionnaire that consists 31 items which is adopted from the research study of (Gray-Toft & Anderson, 1981). NSS scored on 5-point Likert-type scales which includes Never stressful (0), Occasionally stressful (1), Frequently stressful (2), Extremely stressful (3) and Doesn't apply (4). Moreover, about four subscale work factors involved in this NSS instrument that associated to the sources of stress that influenced occupational stress among nursing staff. These four subscale stressors such as working hours, working environment, working relationship and work demand.

3.7.3 Salivary Cortisol Assessment

Salivary cortisol assessment is considered of the well-known biological marker other than blood and urine. Usually, two readings will be taken which is in morning and in afternoon. But in this study, only one reading has been taken during their working hours. The materials that prepared for salivary cortisol assessment are SalivaBio Oral Swab (SOS), ELISA kit or known as Enzyme-linked immunosorbent assay, swab storage tubes (SST), tube caps, plastic zip-lock bag, saliva collection instruction sheet, gloves and storage box as shown in Figure 3.2(a) and Figure 3.2(b). The ELISA kit consists of ELISA plate, positive control, negative control, dilution buffer, stop solution and wash solution. This can be seen in Figure 3.2 (c).

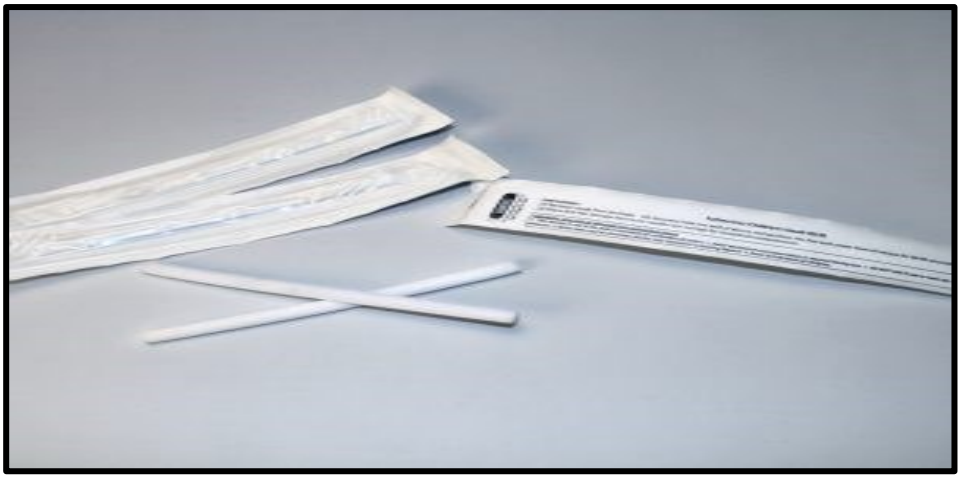


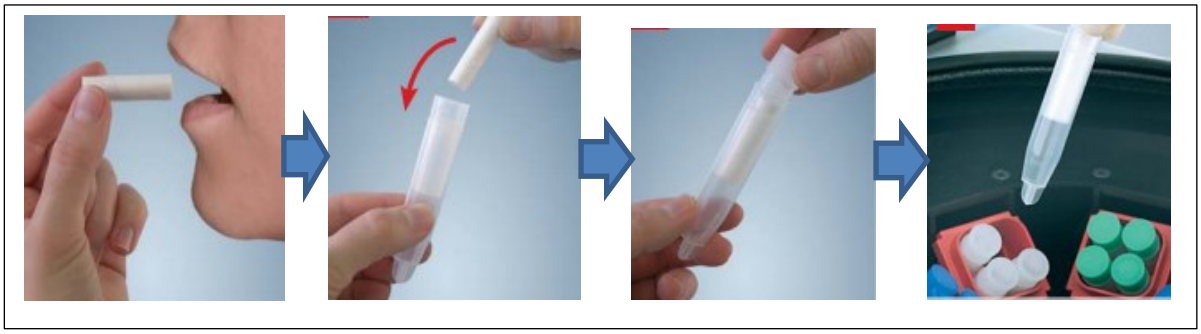
Figure 3.2(a): SalivaBio Oral Swab (SOS)

Figure 3.2(b): Swab storage tubes (SST)

Figure 3.2(C): ELISA kit for lab diagnosis of saliva sample.

3.7.3.1 Saliva Collection

Before conduct this assessment, these are few protocols and considerations are taken on collecting sample and processing the saliva samples. First of all, the respondents inserted the SOS under the front of tongue to absorb the pooled saliva and hold for 2 minutes to ensure the swab it is saturated. Then, the saturated swab oral swab was placed into the SST and replaced the cap. The collected saliva sample was immediately placed in a storage box or zip-lock bag. It is required to store the samples in freezer to avoid muccins. Once the saliva samples removed from the respondent's freezer, it must be immediately return to the -20 degree Celsius freezer which is centrifuge. For the salivary cortisol assay protocols, the researcher of this study referred the manufacturer's instruction sheet to achieve the aim of using this biological marker. Figure 3.3 shows the steps for collecting saliva for cortisol assessment.



3.7.3.2 Standard Preparation

All reagents were brought to room temperature (18-25 °C) before it is use for 30 minutes. Table 3.3 shows the materials supplied with single ELISA kit. In preparing the Standard, the Antibody (1x) and HRP-conjugate (1x) were dilution. Each of it is centrifuged to break it from solid state. 10 µl of Antibody was pipette into a 10 ml beaker together with 990 µl of Antibody Diluent. The same procedure is repeated for HRP-conjugate. 20 ml of Wash Buffer Concentrate (25 x) is diluted distilled water and prepared 500 ml of Wash Buffer (1 x) in 500ml beaker.

Table 3.3: The materials supplied with single ELISA kit.

Reagents	Quantity
Assay plate	1(96 wells)
Standard (Freeze dried)	2
Antibody (100 x concentrate)	1 x 60 µl
Antibody Diluent	1 x 10 ml
HRP-conjugate (100 x concentrate)	1 x 120 µl
HRP-conjugate Diluent	1 x 20 ml
Sample Diluent	2 x 20 ml
Wash Buffer (25 x concentrate)	1 x 20 ml
TMB Substrate	1 x 10 ml
Stop Solution	1 x 10 ml
Adhesive Strip (For 96 wells)	4
Instruction manual	1

The standard vial was centrifuged at 6000 rpm for 30s before opening. Next, the Standard with 1.0 ml of Sample Diluent was reconstituted to produce a stock solution. To ensure complete reconstitution, the Standard was mixed and allowed to sit for 15 minutes with gentle agitation for making dilutions. 150 µl of Sample Diluent was pipette into each tube (S0-S6) and mixed each tube thoroughly before the next transfer as shown in Figure 3.4.

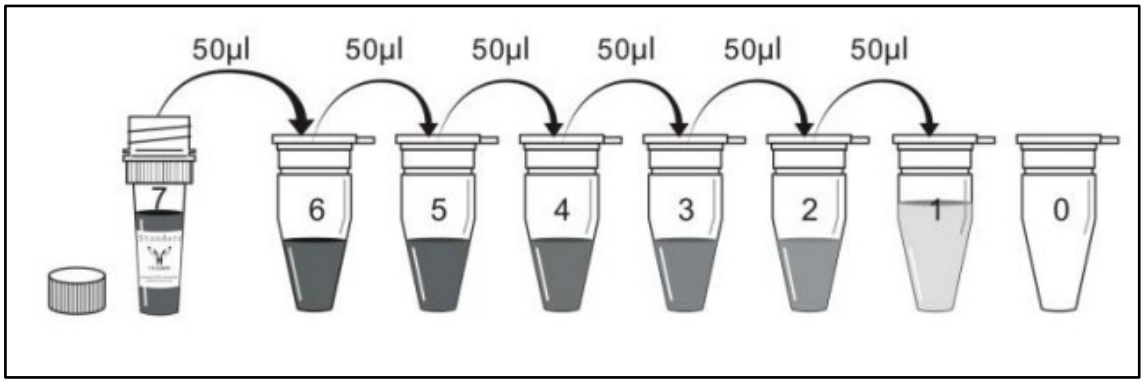


Figure 3.4: Mixing in each tube.

3.7.3.3 Assay Procedure

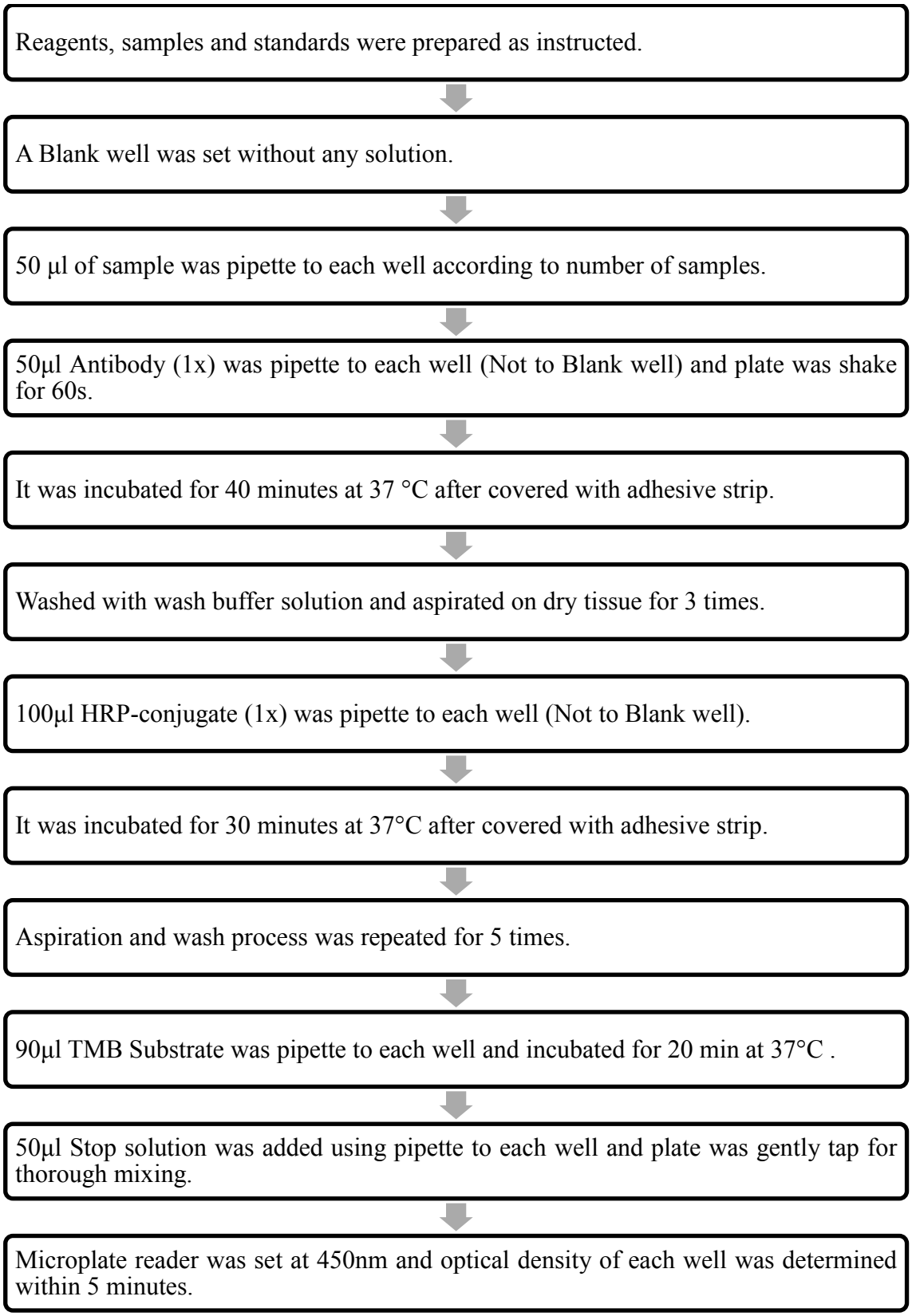


Figure 3.5: Flow chart of overall assay procedure in diagnosis the cortisol of saliva.

3.8 Data Analysis

As this a qualitative and quantitative study, Statistical package for Social Science (SPSS) version 22 was an appropriate tool for analysing all the data of questionnaires that collected during the data collection. The data in descriptive statistics were presented as means± standard deviation (SD). Table 3.4 shows the types of test that used according to the objectives of the research. Analysis of collected data was done through the use of several statistical test as: Anova test that used to statistically analyses the significant difference between two variables, Spearman's correlation coefficient were used to identify the statistically relationship between demographic variables and work factors such as work environment, work hours, work demand and work relationship. To calculating the occupational stress level in association with work factors among nurses in healthcare institutions, the results were computed as follows: Low = 1.00, Moderate = 2.34 and High = 3.67 (Azizi et al.,2003). Some items will be reversing score so that higher score will be representing a high level of occupational stress among staff nurses in rural and urban healthcare institutions. For detecting the elevation of cortisol hormone in saliva, a professional software which is called as "Curve Expert" was used to achieve the result for this assessment.

Table 3.4**:** The types of test in associate with objectives

No	Objectives	Types of test
1	To compare the occupational stress level in both rural and urban areas among staff nurses in healthcare institutions in association with work factors.	Descriptive statistics ANOVA
2	To explore the relationships between demographic variables and work variables.	Spearman Correlation Coefficient
3	To study the elevation of stress marker cortisol in saliva of respondents when they are distressed.	Curve Expert

3.9 Process and Procedure

First of all, a formal letter was sent to the both chosen rural and urban hospitals which are Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan before the study are carried out. The formal letter was sent directly to the director of both Hospital Tengku Ampuan Afzan Kuantan and Hospital Pekan to ask for the permission for conducting the research. The researcher of the study visited both hospitals to survey the working environment of the healthcare institutions and also as an early preparation before conducting the data collection process. This visit was done while forwarding the formal letters to the director of both hospitals. The study was conducted by distributing the questionnaires to the respondents in wards.

In addition, a box was placed at the administration counter in each wards of both Hospital Pekan and Hospital Tengku Ampuan Afzan so that it will be easier for those staff nurses who involved as respondents to hand over the completed questionnaires. About five days of time period was given for those respondents to complete answer the questionnaires so that they no need to force themselves while answering the questionnaire sets that distributed to them and work shift is another reason behind this period of time. They were allowed to answer the questionnaires slowly during their spare and break time.

Following this, the SalivaBio Oral Swab (SOS) was distributed along with the saliva collection supplies to the selected respondents by giving some instructions on collecting the saliva. This was distributed on the day where the questionnaires were collected from the wards After few minutes, these saliva samples were collected from those respondents and it is kept in ice box that contained ice cubes to maintain the enzymes. The Figure 3.6 shows the flow chart of the complete process of the research study.

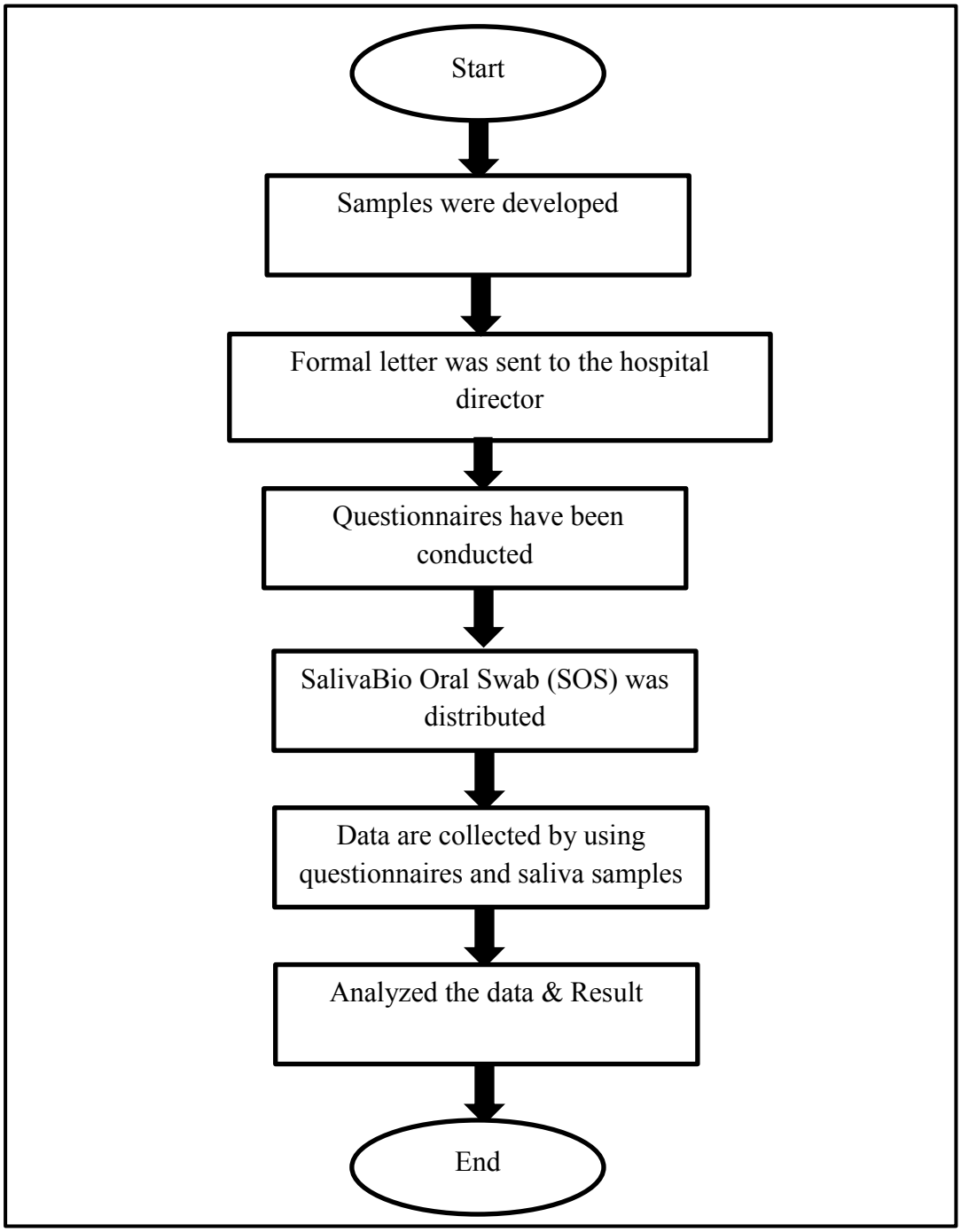


Figure 3.6: The flow chart shows the complete process of the research study.

3.10 Ethical Consideration

A research project letter was sent to the director of Hospital Pekan and Hospital Tengku Ampuan Afzan for seeking permission to gather data. Once permission was granted from each director of hospitals to carry out the research, the Demographic and Nursing Stress Scale questionnaire were distributed to the respondents. A cover page with details of research project was attached to every set of questionnaire that consists the purpose of the study and details of researcher of the study.

The respondents that participate in the study were based on their willingness. Before the data collection, respondents were given a consent letter and briefing about the study. Only then, the respondent who really willing to participate in this study was given the set of questionnaire to be answered. All the information will be kept confidential and only for academic purposes only.

3.11 Conclusion

This chapter provides a review of a research methodology on the study of occupational related stress among nursing staff in healthcare institutions. It discussed on the study design, study location, study population, study sample, study size, data collection instrument, data analysis and process and procedure as well.

CHAPTER 4

RESULTS AND DISCUSSION

4.0 Introduction

This chapter will explain, highlight and discuss the results from the finding based on the analysis done on the data collected from staff nurses in comparing the occupational stress in both rural and urban healthcare institutions.

There are five sections in the questionnaire. Section A consists of Demographic Background of the respondents. Section B consists of Work Environment. Section C consists of Work Hours. Section D consists of Work Demands and Section E consists of Work Relationship.

4.1 Demographic factor in Healthcare Institutions

The following are the data analysis conducted on the Section A of the questionnaire.

4.1.1 Hospital Pekan (Rural)

4.1.1.1 Gender

The Figure 4.1 shows the gender distribution of the nurses in rural healthcare institutions, 13.3% of them are male whereas 86.7% are female. Most of the nurses are female with a higher percentage. The mean ± SD for gender distribution is (1.87± 0.346).

Table 4.1: The table below shows the Gender Distribution of the Nurses in Hospital Pekan.

Gender	Frequency	Percentage
Male	4	13.3%
Female	26	86.7%
Total	30	100%

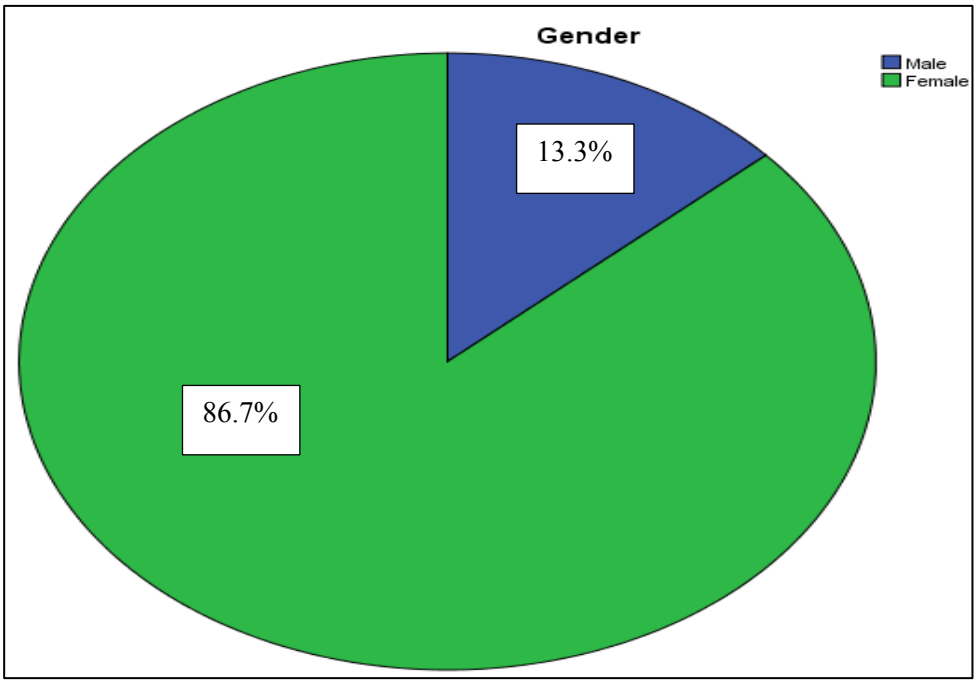


Figure 4.1: Graphical Representation of the Gender Distribution of Nurses in Hospital Pekan.

4.1.1.2 Marital Status

The Figure 4.2 shows the marital status of the nurses in rural healthcare institutions. 30.0% of them are single, 70.0% of them are married whereas widowed, separated and divorced were found with 0%. Most of nurses are married with a higher percentage. The mean ± SD for Marital Status distribution is (1.70±0.466).

Table 4.2: The table below shows the Marital Status of Nurses in Hospital Pekan.

Marital Status	Frequency	Percentage
Single	9	30.0%
Married	21	70.0%
Divorced	0	0%
Widowed	0	0%
Separated	0	0%
Total	30	100%

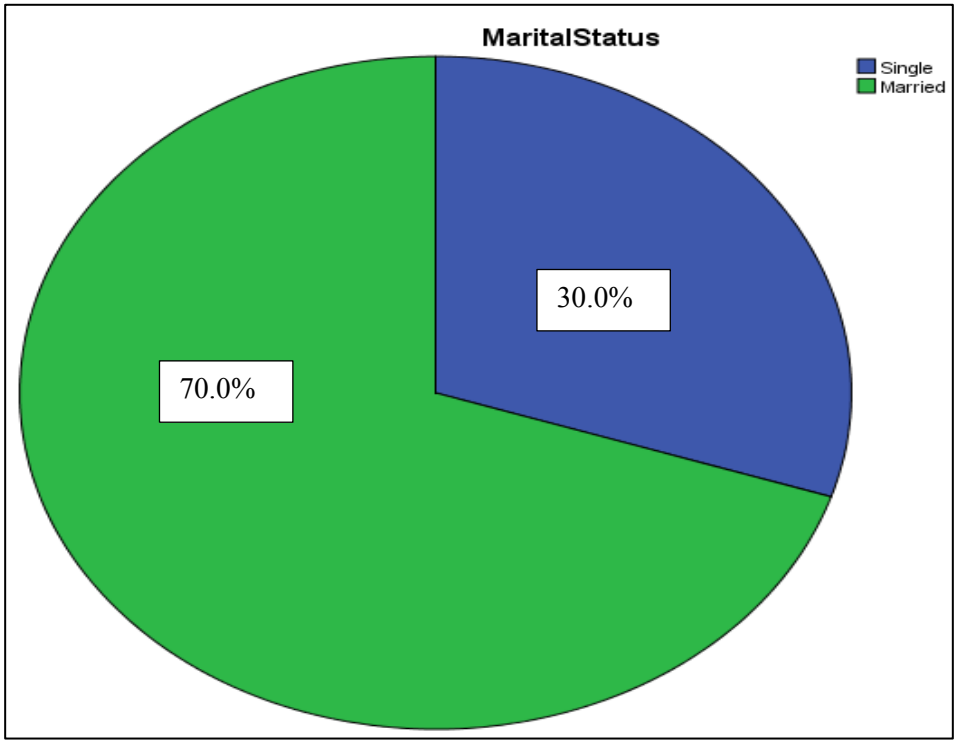


Figure 4.2: Graphical Representation of the Marital Status Distribution of the Nurses in Hospital Pekan.

4.1.1.3 Years of Experience

The Figure 4.3 shows the years of working experience of the nurses in rural healthcare institutions. 40.0% of them are working from 0 to 5 years, 40.0% of them are working from 6 to 10 years whereas those working from 11 to 15 years were found with 13.3%. Other than that, it also shows that 6.7% are working more than 15 years in the rural healthcare institutions. Most of nurses are working with the experience from 0 to 5

years and 6 to 10 years with a higher percentage. The mean ± SD for Years of Experience distribution is (1.87±0.900).

Table 4.3: The table shows the Years of Experience of the Nurses in Hospital Pekan.

Experience Years	Frequency	Percentage
0 – 5	12	40.0%
6 – 10	12	40.0%
11 – 15	4	13.3%
More than 15 Years	2	6.7%
Total	30	100%

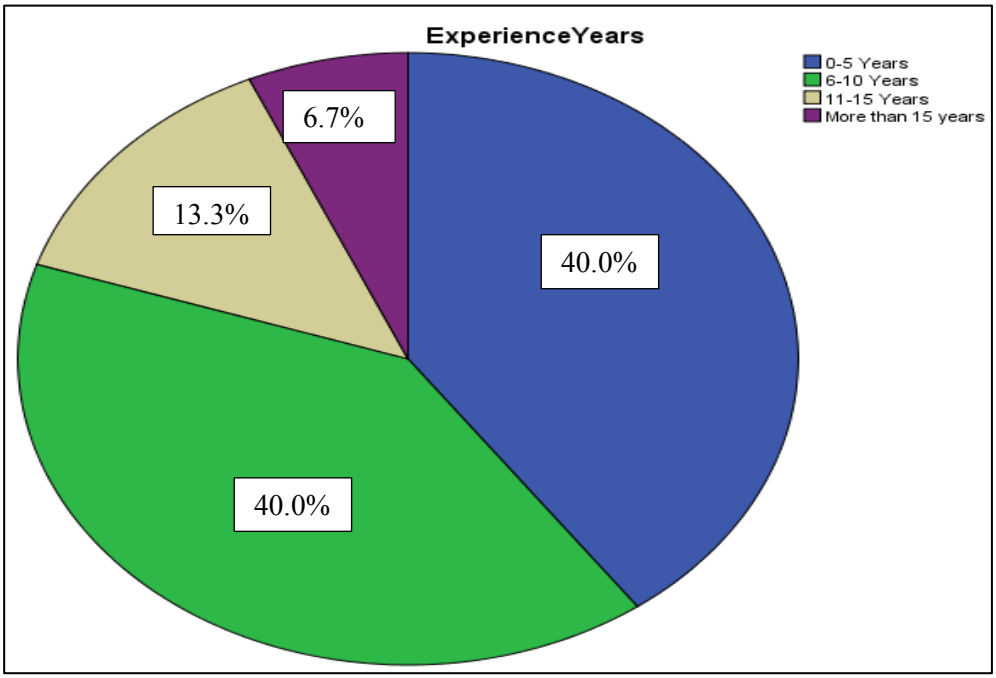


Figure 4.3: Graphical Representation of the Experience Years Distribution of Nurses in Hospital Pekan.

4.1.1.4 Salary

The Figure 4.4 shows the monthly salary income of the nurses in rural healthcare institutions. 3.3% of them receiving monthly salary from RM 1000 to RM 2000 , 20.0% of them are receiving monthly salary from RM 2001 to RM 3000 whereas those with monthly salary income from RM 3001 to RM 4000 were found with 36.7%. Other than that, it also shows that 13.3% are gaining from RM 4001 to RM 5000 as their monthly salary and nurses who receiving monthly salary from RM 5001 and above is about 26.7% in the rural healthcare institutions. Most of nurses are working with the monthly income in the range from RM 3001 to RM4000 with a higher percentage. The mean ± SD for Monthly Salary Income distribution is (3.40±1.192).

Table 4.4: The table shows the Monthly Salary Income of the Nurses in Rural Area.

Salary	Frequency	Percentage
RM 1000 – RM 2000	1	3.3%
RM 2001 – RM 3000	6	20.0%
RM 3001 – RM 4000	11	36.7%
RM 4001 – RM 5000	4	13.3%
RM 5001 and above	8	26.7%
Total	30	100%

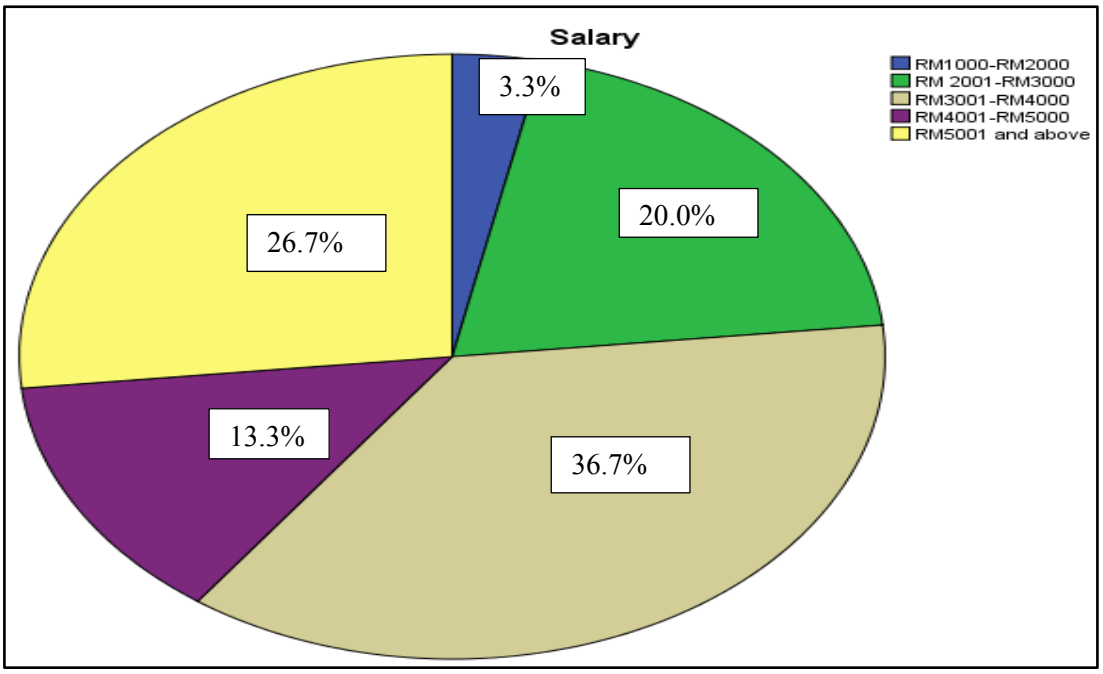


Figure 4.4: Graphical Representation of the Monthly Salary Income Distribution of Nurses in Hospital Pekan.

4.1.2 Demographic factor in Hospital Tengku Ampuan Afzan (Urban)

The following are the data analysis conducted on the Section A of the questionnaire.

4.1.2.1 Gender

The Figure 4.5 shows the gender distribution of the nurses in urban healthcare institutions, 26.7% of them are male whereas 73.7% are female. Most of the nurses are female with a higher percentage. The mean ± SD for gender distribution is (1.73± 0.450).

Table 4.5: The table below shows the Gender Distribution of the Nurses in Hospital Tengku Ampuan Afzan.

Gender	Frequency	Percentage
Male	8	26.7%
Female	22	73.3%
Total	30	100%

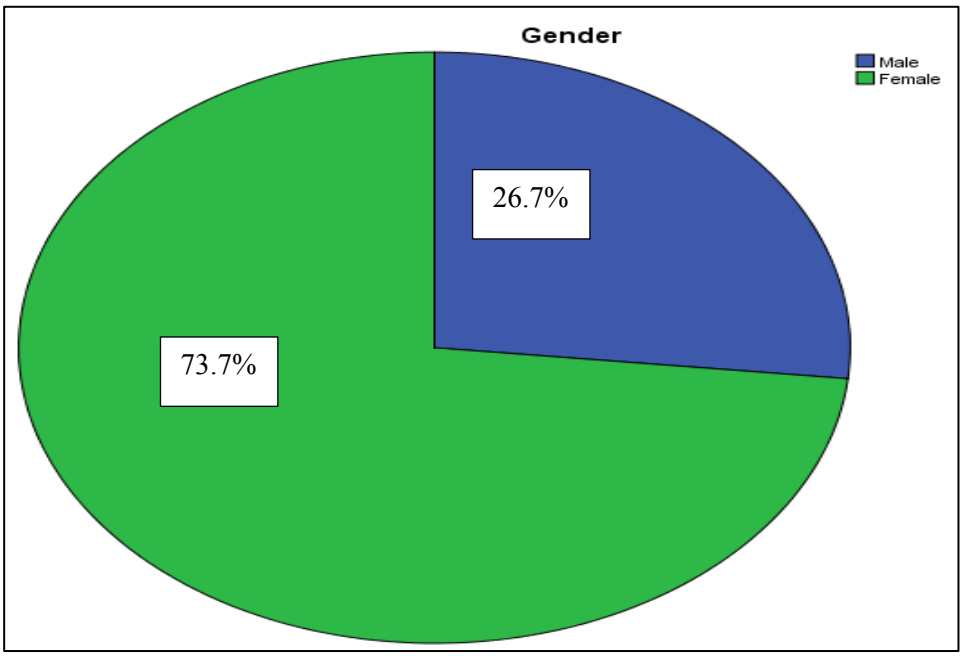


Figure 4.5: Graphical Representation of the Gender Distribution of Nurses in Hospital Tengku Ampuan Afzan.

4.1.2.2 Marital Status

The Figure 4.6 shows the marital status of the nurses in urban healthcare institutions. 20.0% of them are single, 80.0% of them are married whereas widowed, separated and divorced were found with 0%. Most of nurses are married with a higher percentage. The mean ± SD for Marital Status distribution is (1.80±0.407).

Table 4.6: The table below shows the Marital Status of Nurses in Hospital Tengku Ampuan Afzan.

Marital Status	Frequency	Percentage
Single	6	20.0%
Married	24	80.0%
Divorced	0	0%
Widowed	0	0%
Separated	0	0%
Total	30	100%

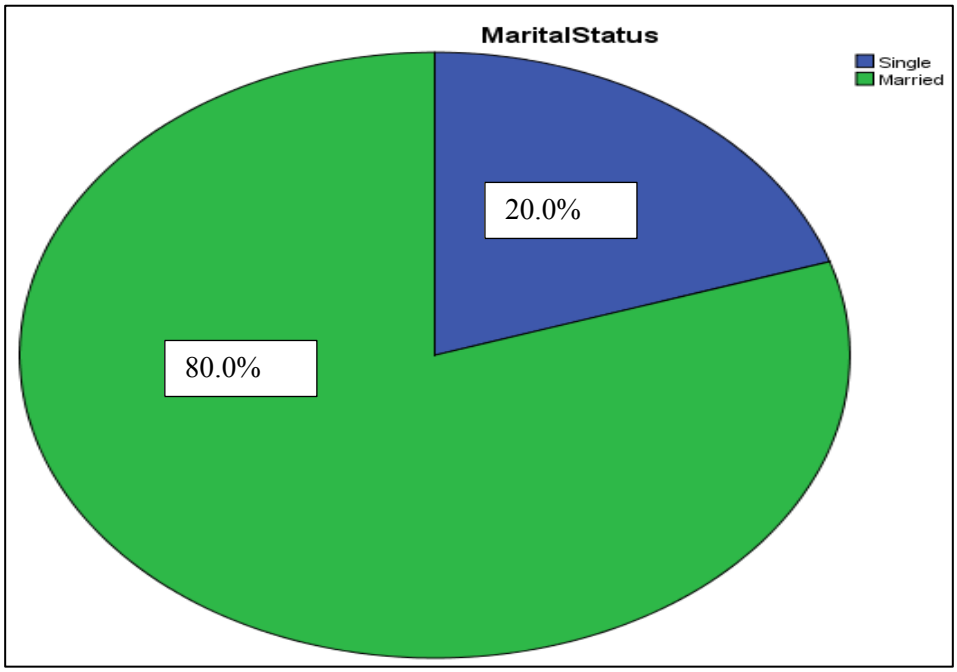


Figure 4.6: Graphical Representation of the Marital Status Distribution of the Nurses in Hospital Tengku Ampuan Afzan.

4.1.2.3 Years of Experience

The Figure 4.7 shows the years of working experience of the nurses in rural healthcare institutions. 36.7% of them are working from 0 to 5 years, 46.7% of them are working from 6 to 10 years whereas those working from 11 to 15 years were found with 10.0%. Other than that, it also shows that 6.7% are working more than 15 years in the rural healthcare institutions. Most of nurses are working with the experience from 0 to 5

years and 6 to 10 years with a higher percentage. The mean ± SD for Years of Experience distribution is (1.87±0.860).

Table 4.7: The table shows the Years of Experience of the Nurses in Hospital Tengku Ampuan Afzan.

Experience Years	Frequency	Percentage
0 – 5	11	36.7%
6 – 10	14	46.7%
11 – 15	3	10.0%
More than 15 Years	2	6.7%
Total	30	100%

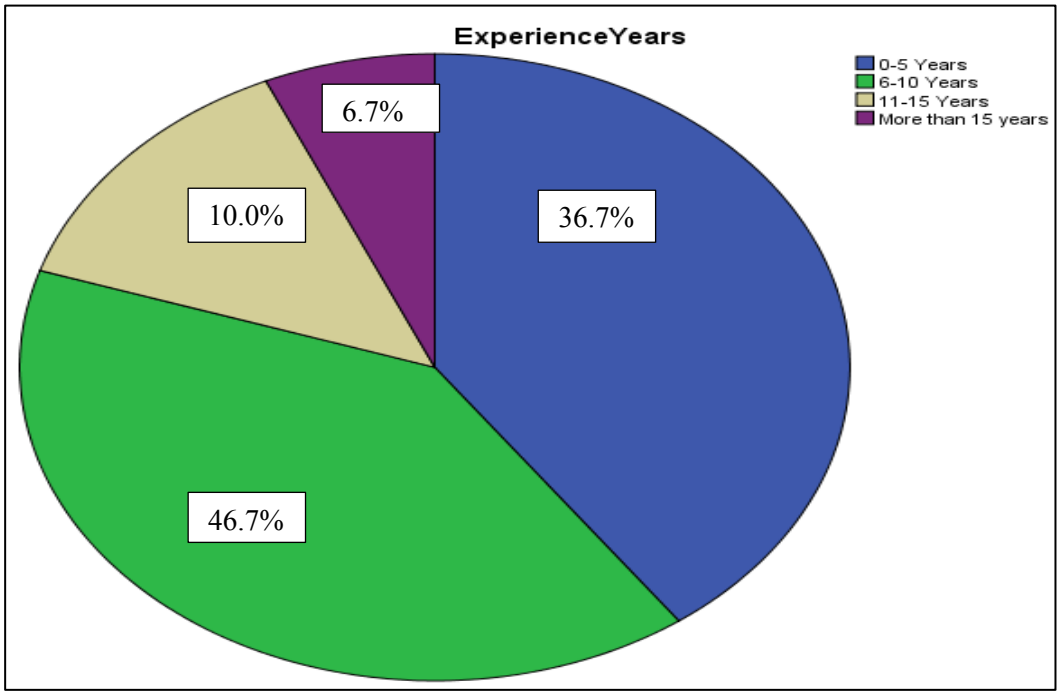


Figure 4.7: Graphical Representation of the Experience Years Distribution of Nurses in Hospital Tengku Ampuan Afzan.

4.1.2.4 Salary

The Figure 4.8 shows the monthly salary income of the nurses in urban healthcare institutions. 20.0% of them are receiving monthly salary from RM 2001 to RM 3000 whereas those with monthly salary income from RM 3001 to RM 4000 were found with 43.3%%. Other than that, it also shows that 13.3% are gaining from RM 4001 to RM 5000 as their monthly salary and nurses who receiving monthly salary from RM 5001 and above is about 23.3% in the urban healthcare institutions. Most of nurses are working with the monthly income in the range from RM 3001 to RM4000 with a higher percentage. The mean ± SD for Monthly Salary Income distribution is (3.40±1.70).

Table 4.8: The table shows the Monthly Salary Income of the Nurses in Hospital Tengku Ampuan Afzan.

Salary	Frequency	Percentage
RM 1000 – RM 2000	0	0%
RM 2001 – RM 3000	6	20.0%
RM 3001 – RM 4000	13	43.3%
RM 4001 – RM 5000	4	13.3%
RM 5001 and above	7	23.3%
Total	30	100%

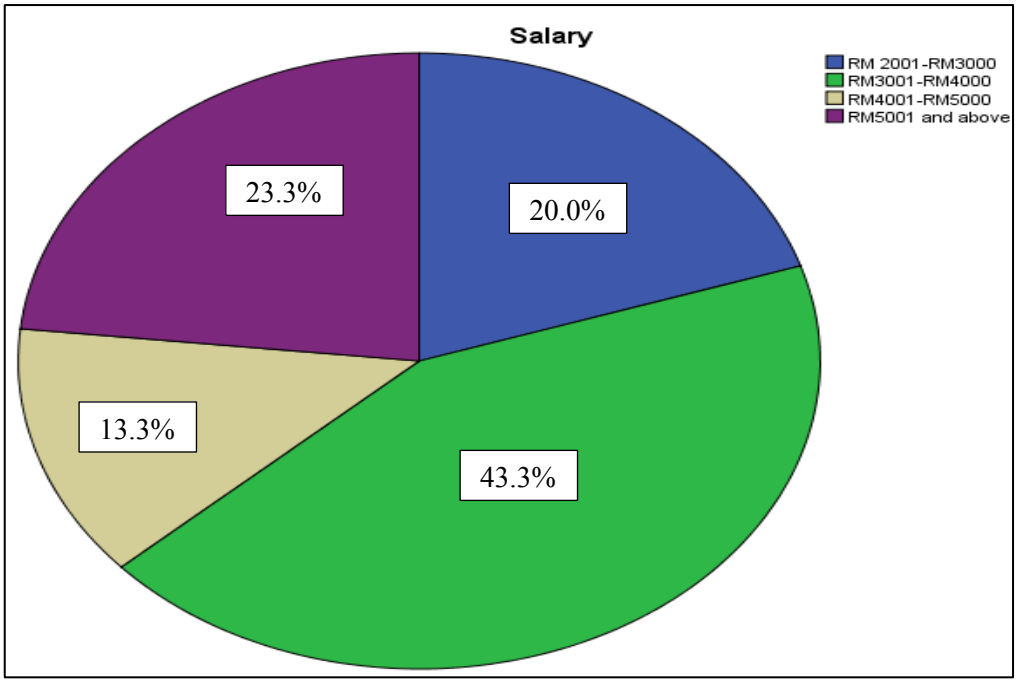


Figure 4.8: Graphical Representation of the Monthly Salary Income Distribution of Nurses in Hospital Tengku Ampuan Afzan.

4.2 Overall Stress Level among Staff Nurses in Healthcare Institutions

The purpose of the study is to identify the stress level for the four work factors involved in the study which are work environment, work hours, work demand and work relationship among the staff nurses in Hospital Pekan which is located in rural area and in Hospital Tengku Ampuan Afzan in urban area. Table 4.9 shows the distribution of score.

Table 4.9: The Distribution of Score of Nurses Stress Level

Total Score	**Level of Stress**
1.00 to 2.33	Low
2.34 to 3.66	Moderate
3.67 to 5.00	High

Sources: (Steinmetz, Kaplan, & Miller, 1982)

4.2.1 Overall Stress Level among Staff Nurses in Hospital Pekan

Table 4.10 below show the mean score for occupational stress level among nurses in Hospital Pekan which located in rural area for four work factors. Results indicated that all four work factors cause a low stress to the staff nurses in rural healthcare institution. As conclusion, staff nurses in Hospital Pekan that situated in rural area were having a low occupational stress with mean 2.15. In low stress level range, the lowest mean value which is work environment factor whereas the highest mean score was work hours factor. Thus, the most affecting stress factor among nurses in Hospital Pekan is working hours that has highest score mean among the four work factors of stress.

Table 4.10: Overall Occupational Stress Level among Staff Nurses in Hospital Pekan

	Work factor	Mean	Stress Level
1	Work environment	1.94	Low
2	Work hours	2.40	Low
3	Work demand	2.10	Low
4	Work relationship	2.15	Low

4.2.2 Overall Stress Level among Staff Nurses in Hospital Tengku Ampuan Afzan

Table 4.11 below show the mean score for occupational stress level among nurses in Hospital Tengku Ampuan Afzan which located in urban area for four work factors. Results indicated that the three work factors which are work environment, work demand and work relationship cause a low stress to the staff nurses in urban healthcare institution. Whereas, work hours cause a moderate stress to those staff nurses in urban hospital. As conclusion, staff nurses in Hospital Tengku Ampuan Afzan that situated in urban area were having a low occupational stress with mean 2.13. The lowest mean value which is work environment factor whereas the highest mean score was work hours factor. Thus, the most affecting stress factor among nurses in Hospital Tengku

Ampuan Afzan is working hours that has highest score mean among the four work factors of stress.

Table 4.11: Overall Stress Level among Staff Nurses in Hospital Tengku Ampuan Afzan

	Work factor	Mean	Stress Level
1	Work environment	1.63	Low
2	Work hours	2.53	Moderate
3	Work demand	2.20	Low
4	Work relationship	2.15	Low

4.3 ANOVA Test

An ANOVA Test was conducted to determine the relation between the demographic variables and independent variables (work environment, work hours, work demands and work relationship) among nurses in both rural and urban healthcare institutions. When the p-value is equal or smaller than 0.05, there is a relationship between occupational stress and work variables.

4.3.1 ANOVA Test in Hospital Pekan

From the Table 4.12 shows the results of ANOVA Test conducted FOR Hospital Pekan. The $p = 0.070$ for gender between work relationship is higher so there is not significant. Then, for marital status between work hours is $p = 0.257$ which is higher so there is not significant. Whereas, years of experience between work environment shows that the $p = 0.196$ which is considered to be higher and there is not significant between these variables. The p-value for salary between work environment is 0.354 which is higher so there is not significant.

Table 4.12: The table below shows the ANOVA Test conducted in this study.

Variables	Significant Value
Gender between work relationship	0.070 (Not significant)
Marital status between work hours	0.257 (Not significant)
Years of experience between work environment	0.196 (Not significant)
Salary between work demand	0.354 (Not significant)

4.3.2 ANOVA Test in Hospital Tengku Ampuan Afzan

From the Table 4.13 shows the results of ANOVA Test conducted for HTAA. The p = 0.090 for gender between work relationship is higher so there is not significant. Then, for marital status between work hours is p = 0.020 which is lower so there is a significant between these variables. Whereas, years of experience between work environment shows that the p = 0.060 which is considered to be higher and there is not significant between these variables. The p-value for salary between work environments is 0.045 which is lower so there is a significant.

Table 4.13: The table below shows the ANOVA Test conducted in this study.

Variables	Significant Value
Gender between work relationship	0.090 (Not significant)
Marital status between work hours	0.020 (Significant)
Years of experience between work environment	0.060 (Not significant)
Salary between work demand	0.045 (Significant)

4.4 Spearman Correlation study

The Spearman's correlation study is conducted between demographic variables and work variables for both rural and urban healthcare institutions.

4.4.1 Spearman Correlation study in Hospital Pekan

Table 4.14 indicated the relationship between demographic variables and work variables. Result showed the p value is 0.390 for the relationship between gender and work relationship. This value is greater than the significant value 0.05. Therefore, there was no significant relationship between gender and work relationship in rural healthcare institution. The p value for the marital status and work hours is 0.634. This value is greater than significance value 0.05. Thus, there is no significant relationship between marital status and work hours. Whereas, the p value for years of experience and work environment is 0.928 which is considered more than significance value. Therefore, there was no correlation or relationship between experience years and work environment. According to table 4.14, the p value for salary and work demand is 0.432 which is higher than the significance value of 0.05. Thus, there was no significant relationship between salary and work demand. In conclusion, there was no significant relationship between the demographic variables and work variables in rural healthcare institution which is Hospital Pekan.

Table 4.14: The table below shows the correlation study conducted in this study.

Variables	**Significant Value**
Gender between work relationship	0.390 (Not significant)
Marital status between work hours	0.634 (Not significant)
Years of experience between work environment	0.928 (Not significant)
Salary between work demand	0.423 (Not Significant)

4.4.2 Spearman Correlation study in Hospital Tengku Ampuan Afzan

Table 4.15 indicated the relationship between demographic variables and work variables. Result showed the p value is 0.607 for the relationship between gender and work relationship. This value is greater than the significant value 0.05. Therefore, there was no significant relationship between gender and work relationship in rural healthcare institution. The p value for the marital status and work hours is 0.481. This value is greater than significance value 0.05. Thus, there is no significant relationship between marital status and work hours. Whereas, the p value for years of experience and work environment is 0.000 which is considered lower than significance value. Therefore, there was correlation or relationship between experience years and work environment. According to table 4.15, the p value for salary and work demand is 0.304 which is higher than the significance value of 0.05. Thus, there was no significant relationship between salary and work demand. In conclusion, there was no significant relationship between gender and work relationship, marital status and work hours and salary and work demand in urban healthcare institution which is Hospital Tengku Ampuan Afzan. In addition, there was a relationship between years of experience and work environment demand in urban healthcare institution.

Table 4.15: The table below shows the correlation study conducted in this study.

Variables	**Significant Value**
Gender between work relationship	0.607 (Not significant)
Marital status between work hours	0.481 (Not significant)
Years of experience between work environment	0.000 (Significant)
Salary between work demand	0.304 (Not Significant)

4.5 Salivary Cortisol Analysis

4.5.1 Concentration of cortisol in saliva of Hospital Pekan

The mean concentration of the cortisol that presence in saliva of the ten respondents in Hospital Pekan is 0.13. This shows there is presence of cortisol in salivary of human when they are distressed.

Table 4.16: The table below shows the concentration of cortisol.

SAMPLES	CONCENTRATION
SAMPLE 1	0.1155
SAMPLE 2	0.3687
SAMPLE 3	0.1087
SAMPLE 4	0.0984
SAMPLE 5	0.1494
SAMPLE 6	0.0929
SAMPLE 7	0.1006
SAMPLE 8	0.093
SAMPLE 9	0.0958
SAMPLE 10	0.096
TOTAL	0.13

4.5.2 Concentration of cortisol in saliva of Hospital Tengku Ampuan Afzan

The mean concentration of the cortisol that presence in saliva of the ten respondents in Hospital Pekan is 0.19. This shows there is presence of cortisol in salivary of human when they are distressed.

Table 4.17: The table below shows the concentration of cortisol.

SAMPLES	CONCENTRATION
SAMPLE 1	0.1004
SAMPLE 2	0.1811
SAMPLE 3	0.0922
SAMPLE 4	0.851
SAMPLE 5	0.1042
SAMPLE 6	0.1097
SAMPLE 7	0.1004
SAMPLE 8	0.1378
SAMPLE 9	0.1023
SAMPLE 10	0.1441
TOTAL	0.1900

4.6 Conclusion

The following data analysis had been conducted in this study will be discussed in the subsequent Chapter 5.

CHAPTER 5

CONCLUSION

5.1 Introduction

The research findings will be discussed briefly in this Chapter. Indications will be made where the present study support existing theory. Limitations will then review and recommendation will be made with regard to the findings.

5.2 Conclusion

As a conclusion, the staff nurses in Hospital Pekan which is located in rural area were experiencing low stress level. They have highest mean in work hours whereas lowest mean in work environment. The staff nurses in Hospital Tengku Ampuan Afzan also experiencing low stress level in their working place. They have a moderate stress level with work hours whereas lowest mean value in work environment. In comparing the occupational stress among staff nurses in both rural and urban healthcare institutions, there is no difference in scores of work factors such as work environment, work hours, work demands and work relationship in Hospital Pekan and Hospital Tengku Ampuan Afzan. Both hospitals scores slightly similar in the mean value. Work hours scored with the highest mean value in both healthcare institutions in rural and urban area. Whereas, both hospitals scored with lowest mean value for the work environment. This shows working environment is not the contributing factor of occupational stress among nurses while working hours is the influencing factor that can cause occupational stress among nurses. However, this matter should not be taken lightly although the mean value for working hours is still in range because this can increase stress level among nurses and harnmed the healthcare institution in future.

Moreover, there is no correlation between the demographic variables and occupational stress in Hospital Pekan. Gender and salary are the demographic variables that have correlation with the occupational stress among the nurses in Hospital Tengku Ampuan Afzan.

In addition, there is no relationship between demographic variables and work variables in Hospital Pekan. All the demographic variables are not correlated with the four work variables in rural healthcare institutions. Whereas, in Hospital Tengku Ampuan Afzan , there is a relationship between years of experience and work environment. This is because when the nurses have more years of working experience, they are familiar with their working environment which are noisy and inadequacy in term of resources.

Last but not least, based on the "Curve Expert" analysis, the concentration of cortisol among the nurses in Hospital Tengku Ampaun Afzan which located in urban area is higher compared than the concentration of cortisol among the nurses in Hospital Pekan which located in rural area. This proved that when the nurses are distressed, there is the presence of cortisol in the saliva.

5.3 Recommendations

The outcome of this study uncovered quite a few areas to help direct future research efforts. Further study should be conducted to ascertain the contribution factors of variables towards occupational stress among nurses. Not only that, a large sample size should be use to validate this study. Therefore, a study should be conducted involving public hospitals and private hospitals. Not only that, in future research the symptoms and ways of coping with stress should be included in the study.

5.4 Limitations of Study

There are some limitations in this study in order to achieve the objectives of the research study. Firstly, this study is limit to only two healthcare institutions in Pahang and not all the healthcare institutions that located in this state. The data that may obtain from this study is not reliable to other hospital work setting. On the other hand, the number of samples chosen for this study does not include all the staff nurses from both rural and urban hospitals. Only those staff nurses working in wards have been

considered. This is due to the consideration of the working time of the staff nurses. Due to time constraining, a further exploration on other demographic variables in association with occupational stress was not able to done. The concentrating could only be given to the nurses from one rural and urban healthcare institution.

In this study, only a small sample sizes could be used due to tolerating between the nurses working hour and break hour. The data collection were took time for a month where hospital management only allowed the researcher to collect the data during their break hours. Not only that, the using of salivary cortisol assessment is another reason for not including all staff nurses of both healthcare institutions because the lab testing process for each saliva sample will be taking more than ten hour to get the results and the cortisol diagnosis procedure is very complicated. Only ten respondents from each rural and urban healthcare institution involved in salivary cortisol assessment. The ELISA kit used for diagnosis the saliva is very expensive and the researcher of this study is required to share the kit which consists only 96 wells with other researchers. Other than that, the willingness of the respondents to refrain from eating, drinking and brushing their teeth for a period of time as the limitation of this research study too. The purpose of doing this is to collect saliva sample for the diagnosis test of cortisol.

Moreover, the respondents in this study could be bias in answering the questionnaires. This takes place because the nurses who working in ward may not want to reveal the actual situation facing by them in term of work environment, work relationship, work demand and work hours or they might respond to the questions in rigid circumstances.

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APPENDIX A
DETAIL OF DATA ANALYSIS

DEMOGRAPHIC VARIABLES

Hospital Pekan

Statistics

Gender

N	Valid	30
	Missing	0
Mean		1.87
Std. Deviation		.346
Sum		56

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	4	13.3	13.3	13.3
	Female	26	86.7	86.7	100.0
	Total	30	100.0	100.0	

Statistics

Marital Status

N	Valid	30
	Missing	0
Mean		1.70
Std. Deviation		.466
Sum		51

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	9	30.0	30.0	30.0
	Married	21	70.0	70.0	100.0
	Total	30	100.0	100.0	

Statistics

Experience Years

N	Valid	30
	Missing	0
Mean		1.87
Std. Deviation		.900
Sum		56

Experience Years

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-5 Years	12	40.0	40.0	40.0
	6-10 Years	12	40.0	40.0	80.0
	11-15 Years	4	13.3	13.3	93.3
	More than 15 years	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Statistics

Salary

N	Valid	30
	Missing	0
Mean		3.40
Std. Deviation		1.192
Sum		102

Salary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	RM1000-RM2000	1	3.3	3.3	3.3
	RM 2001-RM3000	6	20.0	20.0	23.3
	RM3001-RM4000	11	36.7	36.7	60.0
	RM4001-RM5000	4	13.3	13.3	73.3
	RM5001 and above	8	26.7	26.7	100.0
	Total	30	100.0	100.0	

Descriptive Statistics

	N	Minimum	Maximum	Sum	Mean	Std. Deviation
Gender	30	1	2	56	1.87	.346
MaritalStatus	30	1	2	51	1.70	.466
ExperienceYears	30	1	4	56	1.87	.900
Salary	30	1	5	102	3.40	1.192
Valid N (listwise)	30					

Hospital Tengku Ampuan Afzan

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	8	26.7	26.7	26.7
	Female	22	73.3	73.3	100.0
	Total	30	100.0	100.0	

Marital Status

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Single	6	20.0	20.0	20.0
	Married	24	80.0	80.0	100.0
	Total	30	100.0	100.0	

Experience Years

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	0-5 Years	11	36.7	36.7	36.7
	6-10 Years	14	46.7	46.7	83.3
	11-15 Years	3	10.0	10.0	93.3
	More than 15 years	2	6.7	6.7	100.0
	Total	30	100.0	100.0	

Salary

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	RM 2001-RM3000	6	20.0	20.0	20.0
	RM3001-RM4000	13	43.3	43.3	63.3
	RM4001-RM5000	4	13.3	13.3	76.7
	RM5001 and above	7	23.3	23.3	100.0
	Total	30	100.0	100.0	

Descriptive Statistics

		Gender	Marital Status	Experience Years	Salary
N	Valid	30	30	30	30
	Missing	0	0	0	0
Mean		1.73	1.80	1.87	3.40
Std. Deviation		.450	.407	.860	1.070
Sum		52	54	56	102

ANOVA TEST

Hospital Pekan

ANOVA

Gender

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.717	14	.194	3.881	.070
Within Groups	.750	15	.050		
Total	3.467	29			

ANOVA

Marital Status

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.425	9	.269	1.391	.257
Within Groups	3.875	20	.194		
Total	6.300	29			

ANOVA

Experience Years

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	13.967	14	.998	1.575	.196
Within Groups	9.500	15	.633		
Total	23.467	29			

ANOVA

Salary

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	15.900	10	1.590	1.194	.354
Within Groups	25.300	19	1.332		
Total	41.200	29			

Hospital Tengku Ampuan Afzan

ANOVA

Gender

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	3.783	11	.344	2.972	.090
Within Groups	2.083	18	.116		
Total	5.867	29			

ANOVA

Marital Status

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	2.175	5	.435	3.977	.020
Within Groups	2.625	24	.109		
Total	4.800	29			

ANOVA

Experience Years

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	16.217	12	1.351	4.376	.060
Within Groups	5.250	17	.309		
Total	21.467	29			

ANOVA

Salary

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	11.967	5	2.393	2.705	.045
Within Groups	21.233	24	.885		
Total	33.200	29			

CORRELATION STUDY

Hospital Pekan

	Work Environment	Work Hours	Work Demand	Work relationship
Gender Pearson correlation	.045	.032	.098	.192
Sig (2-tailed)	.813	.866	.606	.309
N	30	30	30	30
Marital Status	.058	.091	.209	.137
Pearson correlation	.759	.634	.267	.471
Sig (2-tailed)	30	30	30	30
N				
Year of experience	.017	.055	.132	.145
Pearson correlation	.928	.773	.487	.445
Sig (2-tailed)	30	30	30	30
N				
Salary	.046	.219	.152	.007
Pearson correlation	.810	.245	.423	.972
Sig (2-tailed)	30	30	30	30
N				

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

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

Descriptive Statistics

	Mean	Std. Deviation	N
Gender	1.87	.346	30
MaritalStatus	1.70	.466	30
ExperienceYears	1.87	.900	30
Salary	3.40	1.192	30
Total Work Environment	1.9375	.55393	30
Total Work Hours	2.3933	.53943	30
Total Work Demand	2.1000	.27115	30
Total Work Relationship	2.1481	.48065	30

Hospital Tengku Ampuan Afzan

Descriptive Statistics

	Mean	Std. Deviation	N
Gender	1.73	.450	30
MaritalStatus	1.80	.407	30
ExperienceYears	1.87	.860	30
Salary	3.40	1.070	30
TOTAL ENVIRONTMEN	1.63	.650	30
total hours	2.53	.380	30
Total Work demands	2.20	.199	30
Total Work Relationship	2.1481	.37745	30

	Work Environment	Work Hours	Work Demand	Work relationship
Gender	.129	.067	-.336	-.098
Pearson correlation	.940	.498	.069	.607
Sig (2-tailed)				
N	30	30	30	30
Marital Status	.264	-.134	-.113	.424
Pearson correlation	.159	.481	.551	.019
Sig (2-tailed)				
N	30	30	30	30
Year of experience	.697	-.409	.180	.488
Pearson correlation	.000	.025	.341	.006
Sig (2-tailed)				
N	30	30	30	30
Salary	1	.047	.194	.304
Pearson correlation		.805	.304	.103
Sig (2-tailed)				
N	30	30	30	30

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

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

APPENDIX B
COVER PAGE OF INSTRUCTION

COMPARATIVE STUDY ON OCCUPATIONAL STRESS AMONG NURSING STAFF IN RURAL AND URBAN HEALTHCARE INSTITUTIONS

By: KAREN JENNIFER A/P GANASEN
BACHELOR OF OCCUPATIONAL SAFETY AND HEALTH
FACULTY OF ENGINEERING TECHNOLOGY
UNIVERSITI MALAYSIA PAHANG

Healthcare Institution:

☐ **HOSPITAL TENGKU AMPUAN AFZAN**
☐ **HOSPITAL PEKAN**

Purpose:

This survey is conducted in order to compare the stress factors that associated with occupational stress among nursing staff in rural and urban healthcare institutions. Please complete this questionnaire voluntarily.

*All information provided by you will be kept confidential and will be used purely for the academic purposes.

APPENDIX C

DEMOGRAPHIC AND NURSING STRESS SCALE QUESTIONNAIRE

Socio-Demographic Data Questionnaire/ *Data socio demografi*

Instructions: Please put a cross ☒ in the box next to the answer of your choice or write in the space provided as the case may be.

Name/ *Nama:*……

1. Gender/ *Jantina*	☐ Male/ *Lelaki* ☐ Female/ *Perempuan*
2. Marital status/ *Status perkahwinan*	☐ Single/ *Bujang* ☐ Married/ *Berkahwin* ☐ Divorced/ *Bercerai* ☐ Widow/ *Janda* ☐ Separated/ *Berpisah*
3. How many years of experience do you have working as a nurse?/ *Berapa tahun pengalaman anda bekerja sebagai jururawat?*	☐ 0 to 5 ☐ 6 to 10 ☐ 11 to 15 ☐ More than 15/ Lebih daripada 15 ☐ If other, please specify:
10. How much is your monthly salary income? / Berapakah jumlah pendapatan bulanan anda?	☐ RM1001-RM2000 ☐ RM2001-RM3000 ☐ RM3001-RM 4000 ☐ RM 4001-RM5000 ☐ RM 5001 and above

Nursing Stress Scale (NSS) / *Skala Tekanan Kejururawatan*

Please circle for the number that comes closest to reflecting your opinion about it. *(Sila bulatkan nombor pada jawapan yang bersesuaian dengan pendapat anda.)*

0	**Never stressful/ *Tidak pernah tertekan***
1	**Occasionally stressful/ *Kadang-kadang tertekan***
2	**Frequently stressful/ *Sering tertekan***
3	**Extremely stressful/ *Amat tertekan***
4	**Doesn't apply/ *Tidak diamalkan***

PART A: Work Environment

1	Breakdown of computer. *Komputer tidak berfungsi.*	0	1	2	3	4
2	Being exposed to health and safety hazards. *Terdedah terhadap bahaya kepada kesihatan kesihatan dan keselamatan.*	0	1	2	3	4
3	Not enough staff to adequately cover the unit. *Tidak cukup kakitangan yang secukupnya meliputi unit.*	0	1	2	3	4
4	Bothered by noisy environment. *Terganggu dengan persekitaran yang bising.*	0	1	2	3	4
5	Insufficient resources to work with. *Sumber yang tidak mencukupi untuk bekerja dengan*.	0	1	2	3	4
6	Being exposed to infectious diseases. *Mendapat pendedahan kepada penyakit berjangkit.*	0	1	2	3	4
7	Floating to other units/ services that are short staffed. *Dipindahkan ke unit/ perkhidmatan yang kurang kakitangan.*	0	1	2	3	4
8	Unpredictable staffing and scheduling. *Jumlah kakitangan dan jadual kerja yang tidak menentu.*	0	1	2	3	4

PART B: Work Hours

1	Having to work through breaks. *Terpaksa bekerja semasa waktu rehat.*	0	1	2	3	4
2	Insufficient sleep and frequent on-call. *Tidur yang tidak mencukupi dan panggilan 'on-call' kerap.*	0	1	2	3	4
3	Lack of break period during shift. *Kurang tempoh rehat semasa kerja shif.*	0	1	2	3	4
4	Frequent night duty or shift. *Tugas atau shif malam yang kerap.*	0	1	2	3	4
5	Long working hours. *Waktu kerja yang panjang.*	0	1	2	3	4

PART C: Work Demands

1	Performing procedures that patients experiences as painful. *Menjalankan rawatan yang menyakitkan bagi pesakit.*	0	1	2	3	4
2	Not enough time to complete all of my nursing tasks. *Tidak cukup masa untuk menyelesaikan semua tugas-tugas kejururawatan saya*.	0	1	2	3	4
3	Being the one that has to deal with patient's families. *Menjadi orang yang harus berurusan dengan keluarga pesakit.*	0	1	2	3	4
4	Making a decision concerning a patient when the physician is unavailable. *Membuat keputusan mengenai pesakit apabila doktor itu tidak ada.*	0	1	2	3	4
5	Too many non-nursing tasks required, such as clerical work. *Terlalu banyak tugas-tugas bukan kejururawatan diperlukan,seperti kerja-kerja kerani.*	0	1	2	3	4
6	Having to organize doctors' work. *Terpaksa mengatur kerja doktor.*	0	1	2	3	4
7	Being held accountable for things over which I have no control. *Bertanggungjawab terhadap perkara yang berada di luar kawalan saya.*	0	1	2	3	4
8	Having to deal with abusive patients.					

	Terpaksa berurusan dengan pesakit yang kesat.	0	1	2	3	4
9	Patients making unreasonable demands. *Pesakit membuat tuntutan yang tidak munasabah.*	0	1	2	3	4

PART D: Work Relationship

1	Conflict with a supervisor. *Konflik dengan penyelia.*	0	1	2	3	4
2	Criticism by a physician. *Mendapat teguran daripada doktor.*	0	1	2	3	4
3	Conflict with a physician. *Konflik dengan doktor.*	0	1	2	3	4
4	Difficulty in working with a particular nurse (or nurses) in my immediate work settings. *Kesukaran dalam bekerja dengan seorang jururawat tertentu (atau jururawat) dalam persekitaran kerja saya.*	0	1	2	3	4
5	Lack of support from my immediate supervisor. *Kekurangan sokongan daripada penyelia terdekat saya*.	0	1	2	3	4
6	Lack of support by nursing administration. *Kekurangan sokongan dari pentadbiran kejururawatan*.	0	1	2	3	4
7	Difficulty in working with nurses of the opposite sex. *Kesukaran untuk bekerja dengan jururawat yang berlainan jantina.*	0	1	2	3	4
8	Experiencing discrimination on the basis of sex. *Mengalami diskriminasi atas dasar jantina.*	0	1	2	3	4
9	Being sexually harassed. *Mendapat gangguan sexual.*	0	1	2	3	4

THANK YOU FOR COMPLETING THE SURVEY-YOUR TIME AND PARTICIPATION ARE GREATLY APPRECIATED.

APPENDIX D
GANTT CHART

PROJECT TASKS	SEM II 2017/2018					SEM BREAK		SEM I 2018/2019				
	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEPT	OCT	NOV	DEC	JAN
Finding a title of research												
Understanding Project Scope and Propose Problem Statement, Research Question and Objectives												
Literature Review												
Develop Methodology												
Submission of Proposal												
Slide Preparation												
Presentation FYP 1												
Data Collection												
Data Analysis												
Discuss results and findings												
Conclusion and recommenfation												
Final Report Writing												
Presentation FYP 2												
Submission of Thesis												

APPENDIX E
CONSENT FORM

I have read the "Participant Information Sheet" in language that is understandable to me.The content and meaning of this information has been fully explained to me.I have had time and opportunity to ask question that I have about this study and all my questions have been answered. I had read or have been read to me all pages of this consent form. I voluntarily consent and offer to take part in this study. By signing this consent form, I certify that all the information that I have given including my personal information are true and correct.

I understand that I will receive a copy of this signed consent form.

_____	_____
Name of participant	IC Number
_____	_____
Signature of participant	Date
_____	_____
Name of witness	IC Number
_____	_____
Signature of witness	Date
_____	_____
Name of person explaining consent	IC Number
_____	_____
Signature of person explaining consent	Date

APPENDIX F
LETTER FOR PROJECT APPROVAL (HOSPITAL PEKAN) FROM FACULTY

Universiti Malaysia PAHANG

Universiti Malaysia Pahang
Lebuhraya Tun Razak, 26300 Gambang
Kuantan, Pahang Darul Makmur
Tel: +609-549 2688 | Faks/Fax: +609-549 2689
Website : http://ftek.ump.edu.my

Fakulti Teknologi Kejuruteraan
Faculty of Engineering Technology

Ruj. Kami : UMP.31.02/13.16/1 Jilid 14 (40)
Tarikh : 30 Oktober 2018

HOSPITAL PEKAN
Jalan Batu Balik,
Kampung Mengkasar,
26600 Pekan,
Pahang Darul Makmur.

Tuan/Puan,

PERMOHONAN PELAJAR MENJALANI KERJA KURSUS DI BAWAH SUBJEK *FINAL YEAR PROJECT 2*

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Adalah disahkan bahawa penama berikut merupakan pelajar Tahun 4 di Fakulti Teknologi Kejuruteraan Universiti Malaysia Pahang. Pelajar ini dikehendaki menyiapkan tugasan kerja kursus *Final Year Project 2 (BPS4514)* di organisasi luar yang merupakan salah satu keperluan dalam aktiviti pembelajaran bagi kursus tersebut. Maklumat pelajar adalah seperti berikut:

Nama Pelajar	: Karen Jennifer A/P Ganasen (PA15015)
Program	: Program Ijazah Sarjana Muda Keselamatan dan Kesihatan Pekerjaan Dengan Kepujian

3. Pelajar ini diminta untuk mengadakan lawatan ke organisasi tuan/puan pada tarikh 13 November 2018 tertakluk kepada persetujuan selanjutnya daripada pihak tuan/puan bagi tujuan di atas.

4. Sehubungan dengan itu, jasabaik pihak tuan/puan dipohon agar dapat mempertimbangkan permohonan daripada pelajar berkenaan. Sekiranya pihak tuan/puan memerlukan maklumat lebih lanjut, sila hubungi Prof. Madya Dr. Mohd Fadzil bin Mohd Idris (Pensyarah) di talian 09-5492253 atau emel mohdfadzil@ump.edu.my

Kerjasama tuan/puan dalam perkara ini sangatlah dihargai.

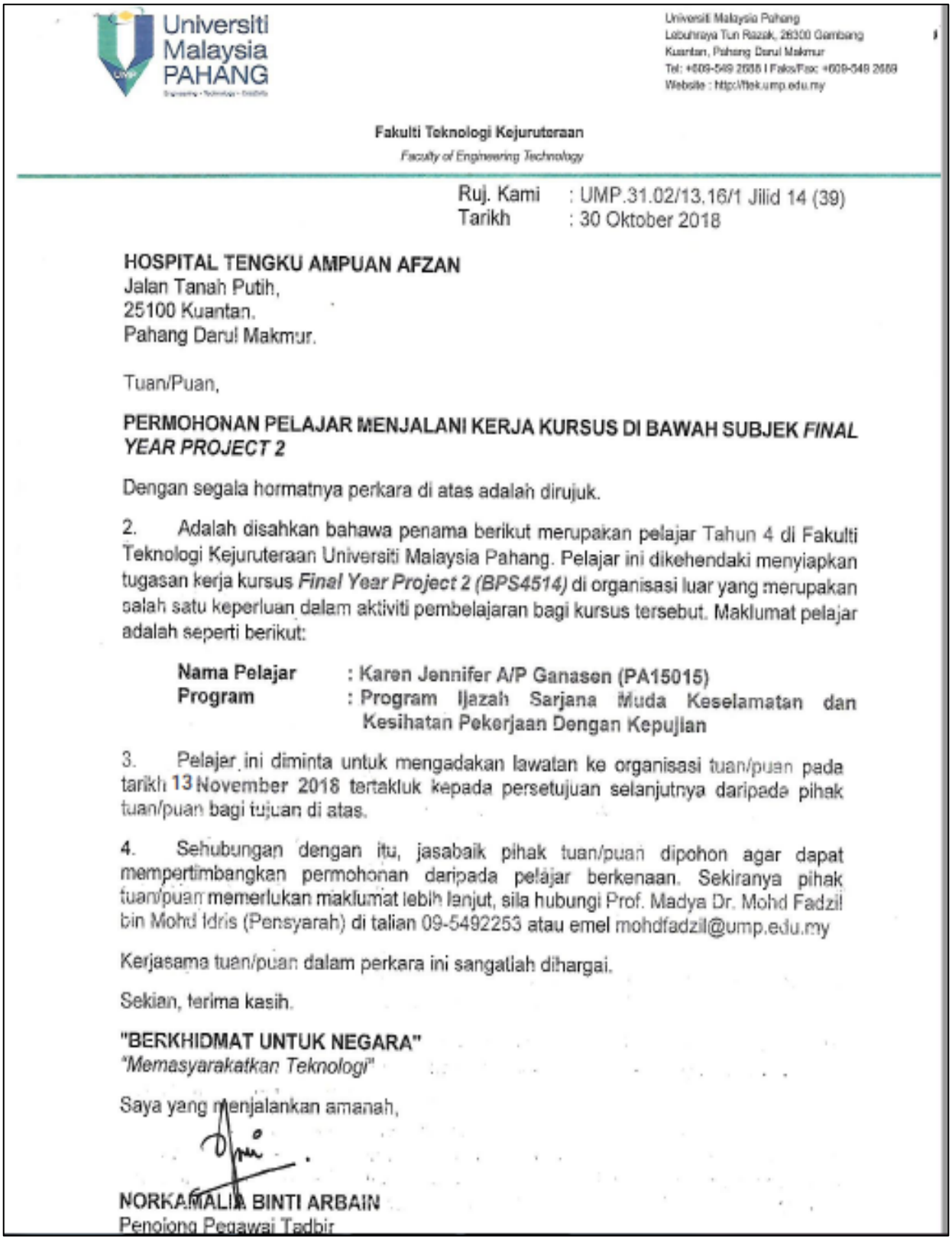
Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
"Memasyarakatkan Teknologi"

Saya yang menjalankan amanah,

NORKAMALIA BINTI ARBAIN
Penolong Pegawai Tadbir

APPENDIX G
LETTER FOR PROJECT APPROVAL (HTAA) FROM FACULTY



Universiti Malaysia PAHANG

Universiti Malaysia Pahang
Lebuhraya Tun Razak, 26300 Gambang
Kuantan, Pahang Darul Makmur
Tel: +609-549 2555 | Faks/Fax: +609-549 2559
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Fakulti Teknologi Kejuruteraan
Faculty of Engineering Technology

Ruj. Kami : UMP.31.02/13.16/1 Jilid 14 (39)
Tarikh : 30 Oktober 2018

HOSPITAL TENGKU AMPUAN AFZAN
Jalan Tanah Putih,
25100 Kuantan,
Pahang Darul Makmur.

Tuan/Puan,

PERMOHONAN PELAJAR MENJALANI KERJA KURSUS DI BAWAH SUBJEK *FINAL YEAR PROJECT 2*

Dengan segala hormatnya perkara di atas adalah dirujuk.

2. Adalah disahkan bahawa penama berikut merupakan pelajar Tahun 4 di Fakulti Teknologi Kejuruteraan Universiti Malaysia Pahang. Pelajar ini dikehendaki menyiapkan tugasan kerja kursus *Final Year Project 2 (BPS4514)* di organisasi luar yang merupakan salah satu keperluan dalam aktiviti pembelajaran bagi kursus tersebut. Maklumat pelajar adalah seperti berikut:

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3. Pelajar ini diminta untuk mengadakan lawatan ke organisasi tuan/puan pada tarikh 13 November 2018 tertakluk kepada persetujuan selanjutnya daripada pihak tuan/puan bagi tujuan di atas.

4. Sehubungan dengan itu, jasabaik pihak tuan/puan dipohon agar dapat mempertimbangkan permohonan daripada pelajar berkenaan. Sekiranya pihak tuan/puan memerlukan maklumat lebih lanjut, sila hubungi Prof. Madya Dr. Mohd Fadzil bin Mohd Idris (Pensyarah) di talian 09-5492253 atau emel mohdfadzil@ump.edu.my

Kerjasama tuan/puan dalam perkara ini sangatlah dihargai.

Sekian, terima kasih.

"BERKHIDMAT UNTUK NEGARA"
"Memasyarakatkan Teknologi"

Saya yang menjalankan amanah,

NORKAMALIA BINTI ARBAIN
Penolong Pegawai Tadbir