



UNIVERSITI PUTRA MALAYSIA

***THE PSYCHOSOCIAL WORK ENVIRONMENT AND WORK ENGAGEMENT
AMONG NURSES IN A PUBLIC HOSPITAL, SELANGOR:
A CROSS-SECTIONAL STUDY***

CHONG SHIN WEN

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ENGAGEMENT AMONG NURSES IN A PUBLIC HOSPITAL, SELANGOR:
A CROSS-SECTIONAL STUDY**

By

CHONG SHIN WEN

Thesis Submitted to School of Graduate Studies, Universiti Putra Malaysia, in
Fulfilment of the Requirement for the Degree of Nursing

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ENGAGEMENT AMONG NURSES IN A PUBLIC HOSPITAL, SELANGOR:
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Background: Unfavorable work environment and loss of work engagement among nurses in public setting have been showed as the predictors for nurse turnout that may result in nursing shortage. However, limited studies were conducted to examine the association between psychosocial work environment and work engagement among nurses in public hospital. **Objective:** The purpose of this study is (1) to determine the association between psychosocial work environment and work engagement among nurses in a public hospital and (2) to determine the association of sociodemographic characteristics with the nurses' perception on psychosocial work environment and work engagement respectively. **Method:** A cross-sectional observational study was carried out with a sample of 41 registered nurses at a public hospital in Selangor, using a self-administered questionnaire which encompasses the consent form, socio-demographic information, International middle version of Copenhagen Psychosocial Questionnaire (III) and Utrecht Work Engagement Scale-17(UWES). Content Validity Index is conducted to test the validity for both instruments. Cronbach's alpha is employed for reliability test, with minimum internal consistency of $\geq .70$. **Outcome:**

The Pearson correlation test showed that psychosocial factors ‘meaning of work’, ‘role clarity’, ‘sense of community at work’, ‘recognition’, ‘quality of work’, ‘job satisfaction’, ‘horizontal trust’ and ‘organizational justice’ are significantly positively associated with work engagement with $p\text{-value} \leq .05$. Age is significantly negatively related to factors ‘Illegitimate task’ and ‘quality of work’ ($p \leq .05$) while occupational tenure is significantly negative related to factors ‘emotional demands’, ‘control over working time’, ‘quality of work’ and ‘vertical trust’ ($p \leq .05$). **Conclusion:** Nurses in Serdang Hospital showed moderate level of engagement even during the pandemic times.

Keywords: Nurse, public hospital, psychosocial work environment, work engagement, socio-demographic characteristic

**PERSEKITARAN PSIKOSOCIAL KERJA DAN PENGLIBATAN KERJA
DALAM KALANGAN JURURAWAT YANG BEKERJA DI SEBUAH
HOSPITAL AWAM, SELANGOR**

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Latar belakang: Persekitaran psikosocial kerja yang tidak memuaskan dan kekurangan penglibatan kerja dalam kalangan jururawat telah dibuktikan sebagai prediktor kepada pusing ganti dalam kalangan jururawat, yang akan mengakibatkan kekurangan jururawat. Manakala kajian yang mengaji hubungkait antara persekitaran psikosocial kerja dengan penglibatan kerja masih tidak mencukupi. **Objektif:** Tujuan kajian ini adalah untuk: (1) mengaji hubungkait antara persekitaran psikosocial kerja dengan penglibatan kerja dalam kalangan jururawat yang bekerja di sebuah hospital awam dan (2) mengaji hubungkait antara ciri-ciri sociodemografi dengan persekitaran psikosocial kerja dan penglibatan kerja. **Kaedah:** Kajian rentas secara kuantitatif yang melibatkan seramai 41 jururawat di sebuah hospital awam, Selangor telah dijalankan dengan soal selidik merangkumi boring persetujuan, info sociodemografi, *International middle version of Copenhagen Psychosocial Questionnaire (III)* dan *Utrecht Work Engagement Scale-17(UWES)*. *Content Validity Index* telah dijalankan untuk menilai kesahan kedua-dua alat manakala kebolehpercayaan alat akan dinilai dengan *Cronbach's alpha* $\geq .70$. **Hasil Kajian:** *Pearson Correlation test* menunjukkan

bahawa faktor psikosocial kerja seperti 'kerja bermakna', 'kejelasan peranan', 'perasaan kemasyarakatan', 'pengiktirafan', 'kualiti kerja', 'kepuasan bekerja', 'kepercayaan antarkaryawan' and 'keadilan dalam organisasi' mempunyai hubungkait signifikan dengan penglibatan jururawat (nilai- $p \leq .05$). Umur mempunyai hubungkait signifikan dengan factor 'tugasan yang tidak disahkan' dan 'kualiti kerja' ($p \leq .05$) manakala pengalaman kerja mempunyai hubungkait signifikan dengan faktor 'keperluan emosi', 'pengawalan masa bekerja', 'kualiti kerja' dan 'kepercayaan antara karyawan dengan atasan' ($p \leq .05$). Konklusi: Jururawat Hospital Serdang mempunyai tahap penglibatan kerja yang sederhana walaupun semasa pandemik COVID-19.

Kata Kunci: Jururawat, hospital awam, persekitaran psikosocial kerja, penglibatan kerja, ciri-ciri sociodemografi

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Date: 20 December 2021

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LIST OF ABBREVIATIONS

AACN	American Association of Critical Care Nurses
ANCC	American Nurses' Credentialing Centre
COPSOQ (III)	Copenhagen Psychosocial Questionnaire (III)
COVID-19	2019 novel Coronavirus
CRC	Clinical Research Centre
H₀	Null Hypothesis
JKEUPM	Jawatankuasa Etika Untuk Penyelidikan Melibatkan Manusia
MOH	Ministry of Health, Malaysia
MREC	Medical Research and Ethics Committee
NMRR	National Medical Research Register
PTPTN	Perbadanan Tabung Pendidikan Tinggi Nasional
SPSS	Statistical Package for the Social Sciences
UPM	University Putra Malaysia
UWES-17	Utrecht Work Engagement Scale-17
WHO	World Health Organization

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CHAPTER 1

INTRODUCTION

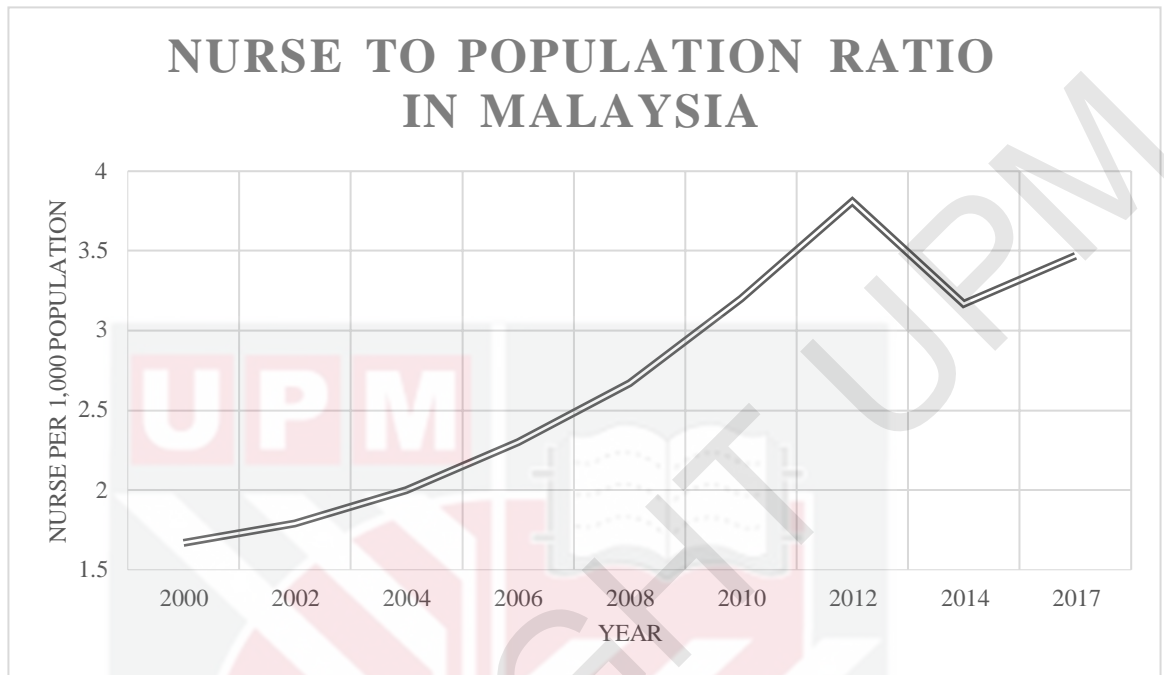
1.0 Background

Adequate nurse staffing is crucial in maintaining the operation of a healthcare sector (Friis et al., 2007). According to World Health Organization (WHO) (2020), nurses are the backbone of healthcare sector by the means of constituting more than half of the health care workers in the world. Nevertheless, almost all healthcare sector is facing the nursing turnover problem (Alotaibi, 2008; Duffield et al., 2014; Roche et al., 2015), with the rate ranging from 15% to 44% across the world (Faramita et al., 2015). With the backdrop of aging population and Covid-19 pandemic, the crisis of nursing turnover is undeniably adding fuel to fire due to the imbalance between the demands and supply of healthcare resources.

Similarly, Malaysia is facing the problem of nursing shortage, in which at least 130,000 nurses are needed to be recruited in all specialisation by 2020 in the attempt to achieve the nurse-to-population ratio of 5 to 1,000 recommended by WHO (Goh, 2017). Albeit there is an obvious gradual increment of nurse density from 2000 to 2012, the nurse density was unstable and only achieved 3.47 per 1,000 people in 2017 (Knoema, n.d.) (Figure 1-1).

Figure 1-1

Nurse to population ratio (per 1,000 people) in Malaysia



Note. Nurse to population ratio in Malaysia adapted from “World » East Asia & Pacific » Malaysia - Health: Health systems » Nurses and midwives (per 1,000 people)”, by Knoema, n.d., <https://knoema.com/WBHNPS2018DEC/health-nutrition-and-population-statistics?tsId=1139860>

Nursing shortage can be multifactorial such as reduced enrolled student nurse due to increased entry criteria from Sijil Pelajaran Malaysia for diploma course, decreased monetary support for higher education funding which is also known as Perbadanan Tabung Pendidikan Tinggi Nasional (PTPTN) (Nik Safiah Nik Ismail, 2017) and nurse turnover due to unfavourable work condition (Lake et al., 2016; Wan et al., 2018, as cited in Huang et al., 2020). Studies which focus on nurse retention, turnover, burnout, intention to leave or stay and job satisfaction are the effort made by researchers to mitigate and prevent the nursing shortage.

Psychosocial work environment is, in turn, said to be related with nursing shortage by the means of directly impact the retention of nurses (Umamaheswari & Krishnan, 2016). According to Jönsson (2012), a good psychosocial work environment can be deemed as positive condition under which nurse work, that correlate with environment, work condition itself (workload, duration, salary) and interpersonal relationship with superior and patients. Good psychosocial work environment empowers the nurses to have the steering wheel on their hands. The nurse can act based on their insight and judgement and have the ability to influence their work (Begat & Severinsson, 2006). The autonomy and job control provided by adequate psychosocial work environment can bring satisfaction in nurses, which then foster their engagement and commitment in work.

In contrast, poor psychosocial work environment has always been linked with job dissatisfaction and turnover among nurses. The dissatisfaction can come from different facets such as high workload, low job control and low social support which result in burnout among nurses. Besides, the impact of poor psychosocial work environment can be reflected apparently on new enrolled nurses who have less skill, knowledge and experience. Novice nurses were found experienced high level of stress when adapting themselves in a new environment (Boamah & Laschinger, 2016). Hence, a poor work condition like no social support from colleagues and feedback from superior can hinder nurse from fostering rapport and commitment to their new job. With the feeling of alienation and disvalued, new nurses would reconsider their career choice due to the mismatch between their ideal and real work (Boamah & Laschinger, 2016).

Besides work environment, work engagement also indicated pivotal in the issue of nursing shortage as it is proved as the predictor of nurse retention in many

studies (Coetzee et al., 2016; Takawira, Coetzee, & Schreuder, 2014). The engaged nurses are believed to stay in nursing profession for more longer period with high dedication and commitment compared with those who are not. This is evident in study by Bonner (2016) as cited in Kim and Yoo (2018) who depicted that engaged nurses are more focus on their work instead of work-related stress. The positive attitude resulted by engagement made them feel less exhausted and depersonalised and thus less intention to leave.

Hence, with regard to the nursing shortage, this study is conducted to determine the psychosocial work environment among nurses, work engagement among nurses and the association between work environment and work engagement among nurses in Serdang Hospital, Selangor.

1.1 Problem statement

The World Health Organization has highlighted health promotion in workplace as one of the priority objectives for 21st century (Malagon-Aguilera et al., 2019). The workplace is vital as it brings direct impact on the physical, mental, social well-being of the employees. The American Association of Critical Care Nurses (AACN) also attach the importance to workplace by establishing six standards that required for promoting healthy work environment which are: (1) skilled communication; (2) true collaboration; (3) effective decision-making; (4) appropriate staffing; (5) meaningful recognition and (6) authentic leadership.

The consequences of unfit work environment for nurses are deteriorating, especially on their quality of care on patients. In the study by McHugh et al. (2016), the survival rate of cardiac arrest in hospital with poor environment are 16% lower than those hospitals reported with favourable environment. Besides, the unfavourable

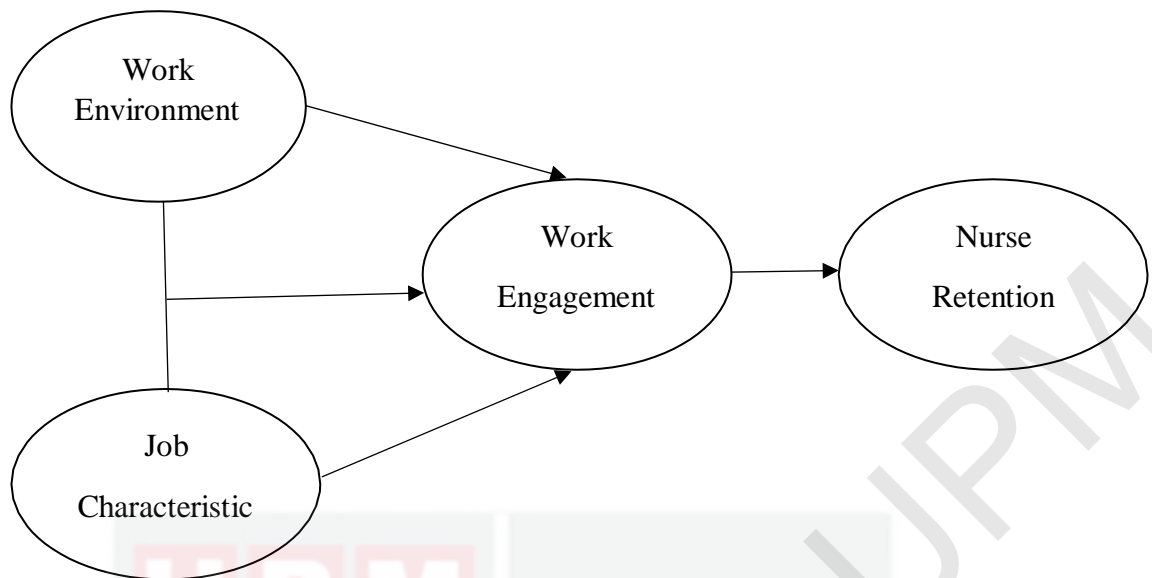
work environment resulted by inappropriate nurse-to-patient ratio will decrease the quality of care as nurses are unable to take care of all patients in the limited time with both hands full with task delegated. In addition, the medical errors and sharp injuries were also ensued by unfavourable work environment. As well, Olds et al. (2017)(as cited in Wei et al., 2018) depict that poor work environment and safety climate are associated with high patient's mortality rate.

Fan et al. (2016) in the cross-sectional study that involved 923 nurses reported that work environment was significantly associated with work engagement. The persisted unfavourable work environment can result in low work engagement and eventually causing burnout among nurses (Fan et al., 2016). Low job satisfaction and worse occupational health will then ensue, as well. The hospital will lose their important staff and fall into the cycle of spending most of the expenditure on recruitment and training of new nurses.

To date, most of the existing studies were found investigating only either work environment or work engagement with other variables (Appendix I). The study of association between work environment and work engagement is still inadequate as most of studies only viewing work engagement as a mediator (Li et al., 2019; Wan et al., 2018; Van Bogaert et al., 2017) (Figure 1-2). In this study, work engagement is deemed to have direct association with psychosocial work environment and will be investigated as the dependent variable or outcome.

Figure 1-2

The mediating role of work engagement in Job Demands-Resources Model



Note. The role of work engagement in the association between work environment and nurse retention in Job Demands-Resources Model, from “Effects of work environment and job characteristics on the turnover intention of experienced nurses: The mediating role of work engagement”, by Q. Q. Wan, Z. Y. Li, W. J. Zhou, and S. M. Shang, 2018, *Journal of Advanced Nursing*, 74(6), 1332-1341, <https://doi.org/10.1111/jan.13528>

Moreover, most of the studies only investigated one or two dimensions in work environment with work engagement. For instance, relational workplace social capital with work engagement (Norikoshi et al., 2020); psychological capital with work engagement (Bonner, 2016); structural and psychological empowerment with work engagement (DiNapoli et al., 2016) and job control and social support with work engagement (Adriaenssens et al., 2017). In this study, more dimensions of work environment (demands at work; work organization and job content; interpersonal relation and leadership; work-individual interface; social capital; and health and well-being) are investigated of its association with work engagement so that the data is more representative for the responders.

1.2 Objectives

1.2.1 General objective

To study about the psychosocial work environment and work engagement among nurses in a public hospital, Selangor.

1.2.2 Specific objective

- a. To describe the psychosocial work environment of nurses in Serdang Hospital, Selangor.
- b. To describe the work engagement among nurses in Serdang Hospital, Selangor.
- c. To determine the association between psychosocial work environment and work engagement among nurses in Serdang Hospital, Selangor.
- d. To determine the association between socio-demographic characteristics and psychosocial work environment of nurses in Serdang Hospital, Selangor.
- e. To determine the association between socio-demographic characteristics and work engagement among nurses in Serdang Hospital, Selangor.

1.3 Null Hypothesis

H₀₁: There is no significant association between psychosocial work environment and work engagement among nurses in Serdang Hospital, Selangor.

H₀₂: There is no significant association between socio-demographic characteristics and psychosocial work environment of nurses in Serdang Hospital, Selangor.

H₀₃: There is no significant association between socio-demographic characteristics and work engagement among nurses in Serdang Hospital, Selangor.

1.4 Operational definition

1.4.1 **Psychosocial work environment:** is about the interaction in terms of interpersonal and social that can affect one's behaviour and growth in a workplace (Jacobs et al., 2013). According to Lindström et al. (1995), the psychosocial work environment can be said as a complex system which involve the work, the employees and the environment.

In this study, psychosocial work environment can be conceptualised as the interaction between nurses and people (superior, colleagues, client) and between nurses and the environment. The psychosocial work environment can be in variety of aspects and in this study, six domains (demands at work; work organization and job content; interpersonal relation and leadership; work-individual interface; social capital and health and well-being) will be elucidated.

1.4.2 **Work engagement:** is defined as fulfilling state of mind that correlated with job and characterised by vigor, dedication and absorption (Schaufeli et al., 2002). Vigor can be said similarly to energetic and the willingness to put effort and perseverance in work, regardless of the hardships that may be faced (Schaufeli et al., 2006). Dedication can be referred to one's involvement to his job which then bring the sense of accomplishment, challenge and dignity while absorption is characterized by one's wholeheartedly immersion in job and hardly to detach himself from the work (Schaufeli et al., 2006). These three

dimensions form the backbone of the assessment tool called Utrecht Work Engagement Scale-17(UWES).

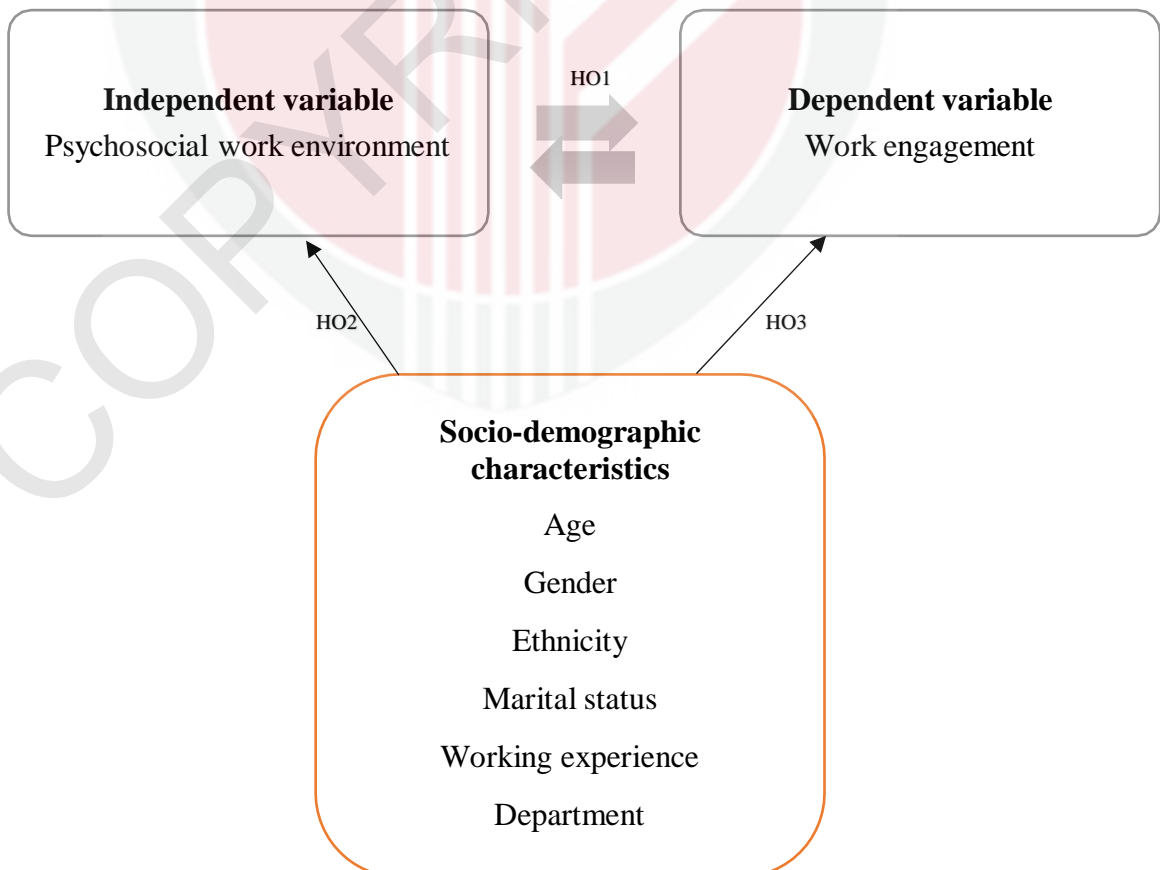
In this study, work engagement can be conceptualised as the attachment of nurses to the job.

1.4.3 **Socio-demographic:** Socio demographic are the characteristics of population (Dobronte, 2013). In this study, age, marital status, race, educational level, working experience in Serdang Hospital, grade and the current department responders working are the socio- demographic data that will provide insight about the responders.

1.5 Conceptual framework

Figure 1-3

Conceptual framework of this study



Note. Relationship between psychosocial work environment, socio-demographic characteristics and work engagement, adapted from “Effects of work environment and job characteristics on the turnover intention of experienced nurses: The mediating role of work engagement”, by Q. Q. Wan, Z. Y. Li, W. J. Zhou, and S. M. Shang, 2018, *Journal of Advanced Nursing*, 74(6), 1332-1341, <https://doi.org/10.1111/jan.13528>

In this study, the psychosocial work environment will be the independent variable and work engagement is served as dependent variable. The association between psychosocial work environment and work engagement is believed to be reciprocal, which means they are affecting each other. Hence, cross-sectional study design is employed.

Moreover, in this study, the association between socio-demographic characteristics such as age, working experience and designated department with the work environment and engagement will be find out. According to Hasselhorn et al.(2006), Older nurses are found less likely to leave their job, even with low health as they are harder to seek new job opportunities. Young nurses usually reported high turnover rate and less engaged compared to older nurses as they can still change occupational path while old nurses would unemployed if they give up on their nursing career (Hasselhorn et al., 2006). Besides, age can influence the turnover rate due to one’s improved level of stress endurance. In a study by Stone et al. (2019), the report of high level of emotional exhaustion and depersonalisation showed 23% and 32% decrease respectively in each increment of 10 years among nurses. The older nurses seem to have more stronger mentality working in the healthcare sector. Conversely, this notion is argued by Cao and Chen (2019) who depicted no significant association between age and work engagement. As well, the designated department are dictated able to mediate the work engagement as the stress level of nurses working in certain department like emergency department which is in high paced and with high demands

are prominently higher than those from other departments (ophthalmology and renal ward).

1.6 Significance of study

This study is constructed to study about the work environment of nurses in public hospital and address how the psychosocial work environment and work engagement affect each other reciprocally.

With the findings of this study, the perception on the work environment from nurses in public hospitals can be studied. The nurse manager or hospital policy can more understand the factor that underlie the depersonalisation and turnover among the nurses which they may overlook in the past. Intervention can be conducted by nurse manager to address the problems faced by nurses.

Moreover, the findings of study can be a wake-up call for the hospital policy makers or management to address the issue of nursing shortage and ameliorate the idea of leave in nurses. Prevent is better than cure, the management should prevent the nurses from generating the idea of resignation by allocating the monetary resources on the facilities or program that is compatible to the nurses' needs and priorities, instead of spending it on recruitment and training program after turnover of previous nurse. The incentive should be invested on the right place to gain the most prominent outcome.

This study is beneficial to patient, as well. Patient are the direct recipient of care from nurses. Hence, the well-being and perception of nurses on their workplace are influential to the quality of care. This is evident in study conducted by Carthon et al. (2018), high level of nurse engagement and more favourable nurse-to-patient staffing ratio are associated with positive rating of patient safety.

1.7 Summary

This chapter discuss about the background and problem statement of the study. Moreover, the objective and hypothesis are stated in this chapter. The conceptual framework is illustrated and formed by the review of existing literature.

The literature review and the process will be elucidated in Chapter 2.



CHAPTER 2

LITERATURE REVIEW

2.0 Introduction

In this chapter, researcher further study and elucidate the psychosocial work environment and work engagement by reviewing the previous literature conducted. An integrative review of literature published between 2016-2021 is conducted from the database Scopus. Key search words included: “psychosocial work environment” OR “work environment” OR “work condition” OR “workplace” AND “work engagement” OR “job engagement” AND “nurse”. The target population is hospital-based nurse and thus the literature pertaining to community or rural area are eliminated. The four phase PRISMA tool is utilised to summarise the phases of review and maintaining the transparency of the literature search (Figure 2-1).

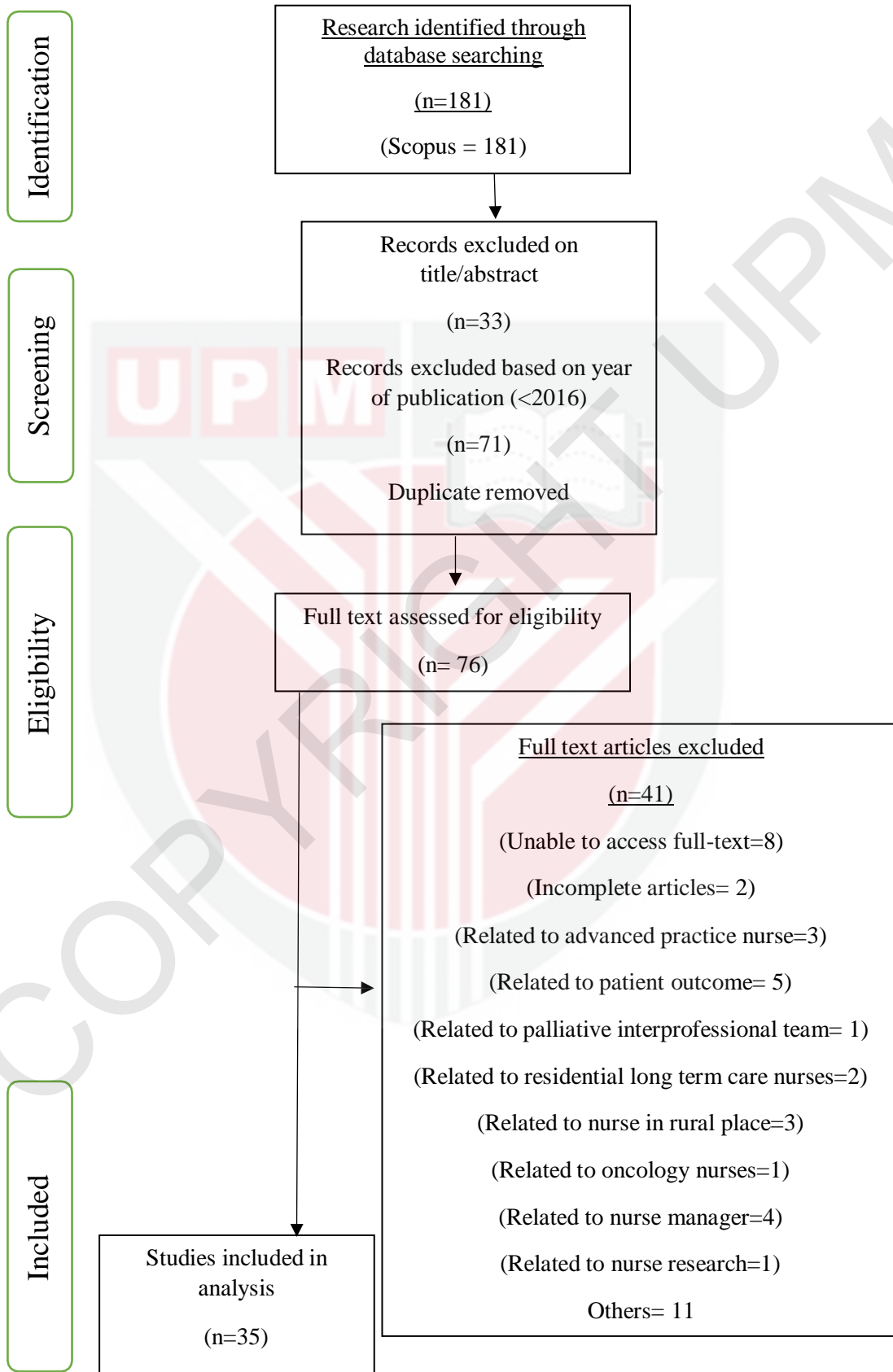
A total of 180 articles were relevant for review. The literatures were then screened based on title, abstract and years of publication. The unrelated (n=33), outdated (n=71) and duplicated (n=1) articles were removed. The eligibility of literature was then assessed by screening in full-text. A total of 41 articles were removed due to unable to access full-text (n=8); incomplete articles (n= 2); related to advanced practice nurse (n=3); related to patient outcome (n= 5); related to palliative

interprofessional team (n= 1); related to residential long term care nurses (n=2); related to nurse in rural place (n=3); related to oncology nurses (n=1); related to nurse manager (n=4); related to nurse research (n=1) and others (n= 11). The remaining 35 articles are included in analysis (Appendix I) and elucidated in detailed.



Figure 2-1

PRISMA flow diagram



2.1 Importance of work environment for hospital-based nurses

Out of the 35 articles, there are 13 articles are concerning the work environment and 7 of them were emphasizing the impact brought by either healthy or poor work environment to the target population, nurses.

In the scoping review conducted by Buckley et al. (2020), the work environment had been deemed as pivotal indicator or predictor for burnout among nurses. The nurses who worked in wards with high patient acuity such as surgery, medical/surgical, emergency or intensive care unit were reported with comparatively high level of burnout (Akman et al., 2016; Berger et al., 2015; Branch & Klinkenberg, 2015; Bursch et al., 2018; Oehler & Davidson, 1992; Sekol & Kim, 2014). Besides, the work environment that more prioritised on structural consideration (rules and regulation) over the nurses also contributed to high level of burnout (Bilal & Ahmed, 2017). This phenomenon can be said as the result of the overemphasis on rules and regulations which made the work environment impersonal and unfriendly. Instead of the feeling of nurses, the management more concern about the job outcome such as the performance and rating by patient. The nurse would generate the feeling of disvalued, unworthy and depersonalised and eventually burnout ensued.

Moreover, in a national survey conducted by Holland et al. (2018), the work environment was explored with its importance on occupational turnover intention. The responders revealed that poor work environment that resulted by high workload, inadequate permanent position, unfavourable work condition, job insecurity and ineffective voice mechanism may be the reason for them to leave the nursing profession. In addition, Hung and Lam (2020) in their qualitative study which involve 18 nurses who had already resigned from public hospitals found out that poor work

environment can result in occupational turnover. Three factors resulted in occupational turnover include (1) job dissatisfaction due to tense work environment; (2) limited career opportunities and (3) ineffective leadership. This study is comparatively persuasive as all responders were resigned nurses and literally turnover from the nursing profession. The responders revealed that excessive workload caused by understaffing exhaust them the most. Not only maintaining the effectivity and quality of care, the nurses were obliged to fulfil the demands and request by patient's family. With the backdrop of excessive workload, the responders seen working as torturing routine and gain no satisfaction from the job. The strained relationship in work environment such as blaming culture also become one of the factors that ensuing their resignation. Besides, the work environment is dictated as predictor for nurse retention by a five-years longitudinal study conducted by Kester et al. (2019). The study reported an improvement of nurse retention in Cardiothoracic Intensive Care Unit (CTICU) five years after the implementation of AACN Healthy Work Environment (HWE) standard and Prospective Staffing Model.

The work environment should be given attention as it is not only pivotal for nurse burnout, turnover and retention, it is also of importance as a prerequisite for student nurse when choosing workplace. Focus group interview conducted by Naughton et al. (2019) which involve 27 student nurses showed that wards with high workloads compounded with manpower shortage made the work environment more challenging and tiring. The nursing shortage would not be curbed if the work environment is not improved due to the redundancy of new graduate nurse to work in such wards.

2.2 Psychosocial work environment attribute

The psychosocial work environment attributes encompass any psychological or social factors surround the nurses' work environment. The attributes can be varied from different studies and researchers and in response to changes resulted by advancement and development in technology.

According to 3 articles included (Raso et al., 2020; Wei et al., 2018; Xu et al., 2019), the workplace relationship and nurse leadership are deemed important in establishing a healthy work environment. The workplace relationship was divided into subcategories which are nurse-nurse, nurse-manager and nurse-physician relationship. The nurses were reported with poor psychological health when work in environment with negative workplace relationship such as workplace incivility, sexual harassment and verbal abuse. This can catalyse or trigger the nurse to have the ideation to leave the organization or even worse, the nursing profession. Besides, the nurse's perceived authentic nurse leadership is pivotal element in promoting healthy work environment. The nurse leader's ability in handling workplace relationship can improve the connection among the subordinates and reduce the misunderstanding. The nurses who work in workplace with authentic nurse leadership were reported with less workplace incivility, as well.

Meanwhile, the six standards stated by AACN can be deemed as the attributes in establishing psychosocial work environment which are: (1) skilled communication; (2) true collaboration; (3) effective decision-making; (4) appropriate staffing; (5) meaningful recognition and (6) authentic leadership. This is in line with the instrument named Copenhagen Psychosocial Questionnaire (COPSOQ) III which served to assess work environment of employees. The domains in COPSOQ (III) include demands at

work; work organization and job content; interpersonal relation and leadership; work-individual interface; social capital; conflict and offensive behaviour and health and well-being (Burr et al., 2019).

2.3 Association between socio-demographic characteristic and work environment

Stahl et al. (2017) reported that the responders aged 40 years old and above have more positive assessment on their workload, scheduling, workplace relationship and professional development compared to the younger nurses. This is also applicable for nurses with more occupational tenure as age and years of experience are always related. However, Raso et al. (2020) argue in their cross-sectional study which involve 254 nurses that the age and years of experience does not have significant association with nurses' perception on work environment.

2.4 Theoretical concept of work engagement

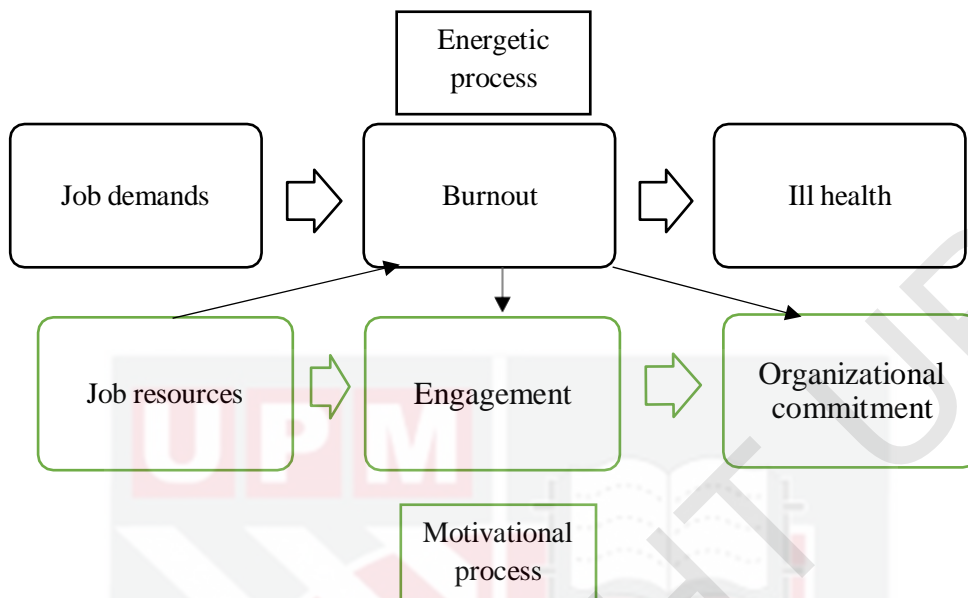
The concept of work engagement can be elucidated more clearer by using the Job Demands-Resources Model (Bakker et al., 2003; Demerouti et al., 2001) and Social Exchange Theory (Cropanzano et al., 2017; Parzefall & Salin, 2010).

2.4.1 Job Demands-Resources Model

In this model, there are two different, albeit intertwined processes which are energetic process and motivational process (Figure 2-2) which bring the direct and indirect effect to the work engagement.

Figure 2-2

Framework of Job Demands -Resources Model



Note. Hypothesised Job Demands-Resources Model adapted from “Burnout and work engagement among teachers”, by J. J. Hakanen, A. B. Bakker and W. B. Schaufeli, 2006, *Journal of School Psychology*, 43, 495–513. Copyright 2005 by Elsevier Ltd.

Job demands refer to any aspects in job regardless in the form of physical, mental, social or organization that requiring one’s persisted physical or psychological effort. According to Hockey (2000), the energetic process that provoked by high job demands can be energy-consuming and tiring, due to the compensatory regulatory-control model. Employee who is under high stress tends to have a trade-off between the protection of performance (benefit) and the mental effort to be put into work (costs). Once the employee faces more job demands, the regulatory mechanism will be activated. The employee will put more effort in the attempt to maintain his quality of work and eventually his energy will be drained out which then led to burnout if the situation persists.

In motivational process, job resources are served as either intrinsic or extrinsic motivational tool. In the former case, the example includes acknowledgement from superior which can promise one's development, basic needs such as autonomy and confidence level that are said to directly affect the work engagement. In the latter case, the job resources can be instrumental in helping achieving organization goal (Hakanen et al., 2006). For instance, the availability of information and technology deployment in working area can ease employee's workload by reducing the job demands in short time, which then indirectly enhance the work engagement.

2.4.2 Social Exchange Theory (SET)

Social Exchange Theory, original from sociology (Homans, 1958; Blau, 1964) has been widely used in different discipline currently to study about people interaction and relationship (Mohammad Tohemer et al., 2017). The principle of reciprocity and obligation in SET also been used in several researches to study work engagement.

This theory explains that in a relationship, people exchange resources to achieve mutual benefits for each other. The long-lasting relationship would then be fostered if both parties agreed that they gain benefit equally in the exchange (Mohammad Tohemer et al., 2017). However, the relationship can still be ended if one of party perceive that their effort (cost) had exceeded than their reward (benefit). Hence, when it comes to the organization goal in which to promote work engagement among employees, the rewards should be outweigh cost invested by employees, or at least comparable for it.

In SET, there are two main elements pivotal in studying work engagement which are reciprocity and obligation respectively. Reciprocity can be referred as the act to exchange voluntarily, due to the expectation of the mutual benefit whilst

obligation is a feeling to pay back when one had received more than he deserves, in order to maintain the fair trade. Employee who had received adequate resources would feel obliged to perform more harder in work as a return. Hence, from the SET, researchers can tell that in order to enhance work engagement, the sense of reciprocity and obligation among employees is important. The organization should offer the rewards that is congruent with employee's effort and provide satisfactory environment for employees to work. The employees will then feel connected to organization and enhance their work engagement as a return.

2.5 Predictors of work engagement

There are 17 articles pertaining to work engagement are included in this study. By using the Job Demands-Resources Model aforementioned, the predictors can be elucidated into two dimensions which are job demands and job resources.

In the aspect of job demands, Waltz et al. (2020) in their focus group interview with 33 nurses reported that high workload is a demand in workplace that can hinder the job satisfaction and engagement among nurses. The responders confessed that high workload resulting in delayed or undone task which made them feel frustrated and overwhelmed. The nurses who are unable to cope with such stress level would lose their engagement with their organization and eventually resign. However, in a study conducted by van Mol et al. (2017), emotion and

cognitive demands have only shown weak and moderate correlation with work engagement. The weak correlation between job demands and work engagement can be explained as all the responders in the study are intensivists and ICU nurses who have already adapted themselves in a workplace with high workload and demands.

Out of 17 articles included, there are 6 articles are related to job resources and studied as predictors for work engagement. Job resources refer to any aspects in job that (1) can decrease job demands; (2) is useful in achieving organization goals and (3) is beneficial in self-improvement or development. In a cross-sectional study conducted by Adriaenssens et al. (2017), job control and social support from staff members are the job resources that explained 21.1% variance of work engagement. Similarly, social support is shown positively associated with work engagement in a study conducted by Gupta et al. (2016) that involve 475 nurses in 9 large hospitals in India. The nurses would more engaged if they receive more support from their workplace.

In addition, DiNapoli et al. (2016) in the cross-sectional study which involve 280 nurses reported that structural and psychological empowerment are positively related with work engagement. Structural empowerment is meant by the ability to get task done via the access of information, resources and support whilst psychological empowerment is the emotional investment needed for employee to succeed such as competence, meaning and self-determination. The nurses are more engaged if they perceived they are working in empowered environment. With the same concept with psychological empowerment, psychological capital in study conducted by Kim and Yoo (2018) was deemed as antecedents for work engagement and affect nurses' intention to stay. The nurses with high psychological capital are more positive in dealing with problems faced in work and hold a positive work behaviour compared with others.

Besides, nurses who perceived authentic nurse leadership in workplace are found more engaged in doing work (Giordano-Mulligan et al., 2019). Meanwhile, four themes were depicted in a focus group interview conducted by Waltz et al. (2020) of their association with work engagement: (1) professional relationships; (2) rewards;

(3) communication and (4) professional development. The nurse would be more engaged if the work environment provides the job resources prioritised by them.

2.6 Association between socio-demographic characteristic and work engagement

In the cross-sectional study by Da Silva et al. (2019), nurse aged 40 and above were showing high work engagement in all dimensions (vigor, dedication and absorption) of the instrument used, UWES-17. Besides, those with working experience more than 10 years also reported high score in all dimensions. This is in line with finding from the cross-sectional study conducted Wan et al. (2018) which showed that age is significantly related with work engagement. Conversely, Cao and Chen (2019) argue that age is not significantly related with work engagement in their cross-sectional study which involve 345 nurses. Cross-sectional survey which involved 949 nurses in Vietnam (Tran et al., 2020) also argue that work engagement was negatively correlated with increased working experience. The experienced nurses are less engaged as they were obliged to bear more responsibility and handle with more work demands.

2.7 Impact of work engagement and its association with work environment

Dåderman and Basinska (2016) reported that low vigor in work engagement scale are significantly related with turnover intention. Similarly, Green et al. (2020) in the pre- and post-test conducted reported the effectiveness of engagement program in reducing burnout level and increase job satisfaction among nurses.

Out of 35 articles, there are 3 articles study about the association between work environment and work engagement among nurses. All of these 3 articles showed positive association between work environment and work engagement among nurses (Fan et al., 2016; Huang et al., 2020; Ziedelis, 2018).

2.8 Summary

In this chapter, the work environment, work engagement and socio-demographic are elucidated and the association in between them are explored. The literature review allows the research to search for literature gap and more understand about the contemporary literature. Methodology will be discussed in Chapter 3.



CHAPTER 3

RESEARCH METHODOLOGY

3.0 Introduction

This chapter discuss about the research design and setting of the study, the study population, the method of data collection, the analytical method of data, Gantt chart, budget and ethical consideration.

3.1 Research design

This research is conducted using quantitative method in which cross sectional survey would be employed. Cross sectional is a study design that ought to determine the presence and extent of causal effects of one or more independent variables on the dependent variables at a given point of time (Mann, 2003).

The advantage of choosing cross sectional design is that it only requires low cost and yet able to collect large data. The data is only required to be collected in a certain period in which no long duration follow up needed. Nevertheless, the con of cross-sectional design in this study is its susceptibility to bias due to low response or

non-response bias. Benefit outweigh disadvantage, which resulting the selection of cross sectional as the design of the study.

3.2 Research setting

This study is conducted in Serdang Hospital, Selangor. Serdang Hospital is a major specialist hospital governed by Ministry of Health, Malaysia (MOH) that served to provide medical treatment and care to approximately 57,000 population in Serdang, Putrajaya, Kajang and Bangi. Moreover, it is also served as a 620-bedded referral hospital and teaching hospital which collaborate with University Putra Malaysia.

3.3 Study Population

The study population chosen is the all nurses regardless of department who are employed and work in Serdang Hospital, Selangor.

3.4 Inclusion Criteria

- Malaysian
- Aged above 18 years old
- Working experience of at least one year in the current department in Serdang Hospital, Selangor

3.5 Exclusion Criteria

- Nurse administrator (matron or chief nurse)

3.6 Study duration

The duration of the study lasts around 10 months (January 2021 to October 2021). While the duration for data collection is around 4 months which is from 1st March 2021 to 1st July 2021.

3.7 Study sample

3.7.1 Sampling method

Sampling technique used in this study is convenience sampling. Albeit convenience sampling is non-probability sampling which may high likely obtain biased result and less representative for the true population, it is employed in this study. This is because the convenience sampling are able to obtain large amount of response in limited time given.

3.7.2 Sample size

The sample size is estimated by using the Krejcie and Morgan (1970)'s sample size calculation. The calculation formula is expressed as below:

$$s = \frac{X^2 NP(1-P)}{d^2 (N-1) + X^2 P(1-P)}$$

where,

s = required sample size

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (0.05 = 3.841)

N = the population size

P = the population proportion

d = the degree of accuracy expressed as proportion (0.05)

The sample size is estimated to be 278 using the Krejcie and Morgan (1970) sample size determination table (Table 3-1) and 296 by using Krejcie and Morgan (1970)'s sample size calculation. In this study, the estimated population size used is

1300 which resulting in 300 sample size after rounded to nearest hundreds.

Table 3-1

Krejcie and Morgan sample size determination table

Population size	Confidence level=95%			Confidence level=99%		
	Margin of error			Margin of error		
	5%	2.5%	1%	5%	2.5%	1%
100	80	94	99	87	96	99
500	217	377	475	285	421	485
1,000	278	606	906	399	727	943
10,000	370	1,332	4,899	622	2,098	6,239
100,000	383	1,513	8,762	659	2,585	14,229
500,000	384	1,532	9,423	663	2,640	16,055
1,000,000	384	1,534	9,512	663	2,647	16,317

Note. Krejcie and Morgan sample size determination table with confidence level of 95% and 99%. From “How to determine population and survey sample size?” by G. V. Dessel, 2013, <https://www.checkmarket.com/blog/how-to-estimate-your-population-and-survey-sample-size/>

3.8 Data collection

3.8.1 Instrument

A self-administered questionnaire in English version was used to collect data which comprised of three parts: a) socio-demographic; b) psychosocial work environment; and c) work engagement. The first part of questionnaire inquires responders’ age, gender, marital status, race, educational level, current working department and the working experience in contemporary department.

The psychosocial working environment was assessed by adopting International middle version of Copenhagen Psychosocial Questionnaire (III) into survey which cover multidimensional psychometric factors that may be faced by nurses. The international middle version of COPSOQ III is comprised of 6 domains covering 26

dimensions and 60 items. All the “core” items are included into the questionnaire (Llorens et al., 2019). The psychosocial working environment was measured in either 1-5 or 1-4 range of scale depends on each item instead of the 0-100 from the original COPSOQ III (Bostrom et al., 2020). The direction of score for each scale are indicated by the scale name (Burr et al., 2019). For example, high score of work demands indicating high work load in the workplace while low score of quality of work indicating less satisfaction of quality of work.

The work engagement was assessed by using Utrecht Work Engagement Scale-17(UWES) (Schaufeli & Bakker, 2004). This questionnaire consists of 17 items which is comprised of 6 vigor items, 5 dedication items, and 6 absorption items. The questionnaire was measured by 7-point Likert scale ranged from 0 to 6 with the meaning of “Never”, “Almost never”, “Rarely”, “Sometimes”, “Often”, “Very often” and “Always”. The composite or subscale score can both be acquired for each responder (Capri et al., 2017). The 17-item scale can be summated to give a possible range in scores from 0 to 102, with higher scores indicating greater work engagement.

3.8.2 Data collection method

Due to the pandemic attack, the physical distribution of survey was barely feasible. Hence, as an alternative method, a self-administered questionnaire is created in Google form in which the link will be sent to the responders. Matron and staff nurses were asked to help in share the link to their subordinate and colleagues. Moreover, QR code was distributed in person when the Serdang Hospital give the green light to proceed research. Complete data is automatically saved in Google Excel once respondents finished answering and lastly, data can be analysed.

3.9 Pilot study

Due to the small sample size obtained, pilot study was omitted. However, Content Validity Index which involve 5 experts is used to ensure the validity of assessment tool.

3.10 Data Analysis

3.10.1 Validity and Reliability

Many existing studies were carried out on either COPSOQ III (Burr et al., 2019; Ahmad Shahrul Nizam Isha et al., 2020; Berthelsen et al., 2020) or UWES-17 (Schaufeli & Bakker, 2014; Fong & Ng, 2012; Wan Shahrazad Wan Sulaiman & Nur Aisyah Zahoni, 2016), with the aim to prove their validation to use. In this study, the validity of COPSOQ III and UWES-17 was tested, as well, with the consideration of the discrepancy of culture and social climate of the responders tested.

In regards to the validity for both assessment tools, Content Validity Index was conducted by inviting five expert judges in evaluating the questionnaires. The questionnaire was sent to five of them via email and they were asked to rate the validity in 5-Likert scale ranging from '0' to '4' for each items. The higher the score indicating the higher the validity. Both COPSOQIII and UWES-17 was found with high validity with the S-CVI/UA of 0.72 and 0.88 respectively.

The reliability test for both COPSOQ III and UWES-17 is conducted by using Cronbach's alpha (Appendix VIII and IX). The internal consistency of each item from the same constructs is ≥ 0.70 and thus can be deemed as reliable tools (Burr et al., 2019).

3.10.2 Descriptive analysis

Data analysis is performed by using IBM Statistical Package for the Social Sciences (SPSS) Version 23 for Windows. The completeness and normality test such as Kolmogorov-Smirnov test or Shapiro-Wilk test is applied to the continuous data before the statistical analysis. With the finding of Skewness and Kurtosis that ranging between -1 to 1, descriptive analysis is carried out on all variables in this study according to their types of variable with mean \pm standard deviation (parametric).

3.10.3 Inferential analysis

To investigate the relationship or association between variables, inferential analysis is conducted based on the type and normality of the variables. In this study, Pearson r 's correlation (parametric) is performed to examine bivariate correlations between psychosocial work environment (independent variable) and work engagement (dependent variable) among nurses in Serdang Hospital, Selangor. The relationship between psychosocial work environment and work engagement is indicated as significant if the p-value is found $\leq .05$. Besides, Pearson r's correlation is also conducted when compare the perceived work environment and work engagement in nurses with different ages and occupational tenure as both of them are continuous data.

In the other hand, independent t-test was conducted to determine the effect of categorical variable with two levels such as gender and marital status on either psychosocial work environment or work engagement. One-way ANOVA, in turn is used to determine the influence of categorical variables with more than two levels such as ethnicity and working department on either psychosocial work environment or work engagement.

3.11 Gantt Chart

Refer to Appendix XII

3.12 Budget

Table 3-2

Budget of the study

NO	ITEM	PRICE PER QUANTITY	QUANTITY
1	Souvenir for respondent (Pen)	RM50	RM50
TOTAL			RM 50.00

3.13 Ethical Consideration

In this study, the application for ethical approval will be submitted to NMRR and MREC since the human subjects working in MOH facilities are involved.

Written permission was given to following party:

- Clinical Research Centre (CRC)
- Director of Serdang Hospital
- The head of department of medical, surgical, rehabilitation, orthopaedic, cardiology, cardiothoracic, paediatric, ophthalmology/ otorhinolaryngology and obstetrics and gynaecology department in Serdang Hospital, Selangor
- The Matron or Sister of the respective wards
- Research ethics committee UPM (JKEUPM)
- Informed consent for responders

The informed consent will be sent along with the questionnaire in Google form to the responders. The responders can be said aware of their right for confidentiality and

to withdraw from study in any stage if perceive their right is violated. The use of offensive, discriminatory or other unacceptable language was avoided in the formulation of questionnaire. To ensure confidentiality and anonymity, all the report and publication will be in general and without identifying features. The data or printed materials will be kept in a facility for at least five years. The downloaded data will be kept in a password protected computer, thumb-drive or hard-disc and can only accessible by the researcher or the research members like supervisors.



CHAPTER 4

RESULTS

4.0 Introduction

This chapter illustrates and interprets the research finding of the sociodemographic data of the respondent, respondent's assessment on their psychosocial work environment and their own work engagement level, followed by the association and correlation between these three variables.

4.1 Descriptive analysis

4.1.1 Sociodemographic characteristics

Questionnaires were completed by 41 of 300 nurses required in this study, with a response rate of 13.7%. Of the 41 nurses, 31.0% (13) were medical ward nurses, 22.0% (9) were general intensive care unit nurses, 14.6% (6) were obstetric and gynaecology ward nurses and 32.4% (13) were belong to other wards (Table 4-1). With the mean age of 26.5 ($SD= 2.7$ years), most of the respondents were women (75.6%), Malay (78.0%) and single (61.0%) (Table 4-1). Of the total sample, most of the

respondents were either Degree holder (48.8%) or Diploma holder (46.3%), with the mean years of experience in current workplace, 3.1 years ($SD= 1.9$ years) (Table 4-1).

4.1.2 Perceived psychosocial work environment and work engagement among registered nurses

Table 4-2 shows the descriptive statistical analysis and reliability analysis for self-perceived psychosocial work environment among registered nurses. Of the 26 work-related psychosocial factors, meaning of work scored the highest mean score of 4.10 ($SD=0.85$) followed by possibilities for development (4.03 ± 0.86); role clarity (3.90 ± 0.76); predictability (3.87 ± 0.83) and work pace (3.83 ± 0.64) (Table 4-2). In accordance to this finding, the respondents were found perceiving they are working in a condition that provide them high meaning of work, possibilities for development, role clarity, predictability and requiring fast work pace. In contrast, control over working time was reported with the lowest mean score of 2.75 ($SD=0.73$) (Table 4-3) showing that the respondents were having low control of their working time. The Cronbach's alpha was satisfactory, ranging from 0.781 to 0.924 (Table 4-3).

Table 4-3 shows the descriptive statistical analysis and reliability analysis for self-perceived work engagement among registered nurses. The overall mean score of UWES-17 was 3.81 ($SD=1.05$), classified as medium engagement level (UWES-17 score ≥ 2.0 and ≤ 3.99) (da Silva et al., 2019). Of the 3 characteristics in work engagement, 'vigor' scored the lowest mean score of 3.63 ($SD= 1.02$) whilst dimension 'dedication' scored the highest ($M= 4.04$; $SD= 1.11$) (Table 4-3). The Cronbach's alpha was high, ranging from 0.874 to 0.911 (Table 4-3).

Table 4-1*Sociodemographic information on respondent (n=41)*

Characteristics	N	%	Mean± SD
Age			26.54 ± 2.70
Gender			
Male	10	24.4	
Female	31	75.6	
Ethnicity			
Malay	32	78.0	
Chinese	4	9.8	
Indian	1	2.4	
Others	4	9.8	
Marital Status			
Single	25	61.0	
Married	16	39.0	
Highest education qualification			
Bachelor Degree	20	48.8	
Post basic	2	4.9	
Diploma	19	46.3	
Current working department			
Medical	13	31.7	
Surgical	4	9.8	
Rehabilitation	1	2.4	
Orthopaedic	3	7.3	
Cardiology	3	7.3	
Cardiothoracic	1	2.4	
Paediatric	1	2.4	
General Intensive Care	9	22.0	
Obstetrics and Gynaecology	6	14.6	

**Years of working
experience in current
department**

3.08 ±1.93



Table 4-2

Descriptive statistical analysis and reliability analysis for self-perceived psychosocial work environment among registered nurses (N=41)

COPSOQ (III) Domains and items	Number of items	Mean± SD	95% CI	Cronbach's alpha
Demands at work	11			0.796
Quantitative demands ⁺	3	3.08± 0.67	2.87-3.29	
Work pace ⁺	2	3.83± 0.64	3.63-4.03	
Emotional demands ⁺	3	3.15± 0.81	2.90-3.41	
Demands for hiding emotions ⁺	3	3.31± 0.70	3.09-3.53	
Work organization and job content	13			0.781
Influence	4	3.24± 0.69	3.03-3.46	
Possibilities for development	3	4.03± 0.86	3.76-4.30	
Control over working time	4	2.75± 0.73	2.52-3.00	
Meaning of work	2	4.10± 0.85	3.83-4.36	
Interpersonal relation and leadership	18			0.924
Predictability	2	3.87± 0.83	3.60-4.13	
Role clarity	3	3.90± 0.76	3.66-4.14	
Role conflict ⁺	2	3.56± 0.80	3.31-3.81	
Quality of leadership	3	3.59± 0.79	3.34-3.84	
Social support from superior	2	3.20± 0.75	2.96-3.43	
Social support from colleagues	2	3.59± 0.84	3.32-3.85	
Sense of community at work	2	3.78± 0.75	3.54-4.02	
Recognition	1	3.49± 0.90	3.20-3.77	
Illegitimate tasks ⁺	1	3.29± 0.84	3.03-3.56	

Work individual interface	11			0.832
Job Insecurity [†]	2	3.29± 1.13	2.93-3.65	
Insecurity over working conditions [†]	3	3.44± 0.98	3.13-3.75	
Quality of work	1	3.54± 0.95	3.24-3.84	
Job Satisfaction	3	3.56± 0.57	3.38-3.74	
Work Life Conflict [†]	2	3.26± 0.95	2.96-3.56	
Social capital	6			0.886
Horizontal Trust	1	3.39± 1.02	3.07-3.71	
Vertical Trust	3	3.49± 0.80	3.24-3.74	
Organizational Justice	2	3.43± 0.91	3.14-3.71	
Health and well-being				
Self-rated Health	1	3.39± 0.86	3.12-3.66	

[†]= Higher score means poorer work environment

Abbreviation: SD, standard deviation; 95% CI, confidence interval of 95%.

Note. Reliability test for COPSOQ III by internal consistency with the measure of Cronbach's alpha in each domains. The internal consistency is deemed acceptable if Cronbach's alpha ≥ 0.70 . Adapted from "The Third Version of the Copenhagen Psychosocial Questionnaire", by H. Burr, H. Berthelsen, S. Moncada, M. Nubling, E. Dupret, Y. Demiral, J. Oudyk, T. S. Kristensen, C. Llorens, A. Navarro, H. J. Lincke, C. Bocerean, C. Sahan, P. Smith, A. Pohrt, International COPSOQ Network, 2019, *Safety and Health at work*, 10(4), 482-503.

<https://doi.org/10.1016/j.shaw.2019.10.002>

Table 4-3*Descriptive statistical analysis and reliability analysis for self-perceived work engagement among registered nurses (N=41)*

UWES-17 Items	Score (max=6) Mean ± SD	Cronbach's alpha
Vigor		
At my work, I feel bursting with energy.	3.61± 1.16	
At my job, I feel strong and vigorous	3.78± 1.11	
When I get up in the morning, I feel like going to work.	3.34± 1.51	
I can continue working for very long periods at a time.	3.54± 1.36	
At my job, I am very resilient, mentally.	3.66± 1.35	
At my work I always persevere, even when things do not go well.	3.85± 1.30	
Total Vigor	3.63± 1.02	0.874
Dedication		
I find the work that I do full of meaning and purpose.	4.00± 1.07	
I am enthusiastic about my job.	3.85± 1.11	
My job inspires me.	4.02± 1.35	
I am proud on the work that I do.	4.00± 1.45	
To me, my job is challenging.	4.32± 1.49	
Total Dedication	4.04± 1.11	0.904
Absorption		
Time flies when I'm working.	4.32± 1.33	
When I am working, I forget everything else around me.	3.63± 1.37	
I feel happy when I am working intensely.	3.78± 1.46	
I am immersed in my work.	3.78± 1.41	
I get carried away when I'm working.	3.76± 1.37	

It is difficult to detach myself from my job.	3.56± 1.52	
Total Absorption	3.80± 1.17	0.911
Overall Score Mean	3.81±1.05	
Total work engagement(n=102)	64.80± 17.91	

Abbreviation: SD, standard deviation.

Note. Reliability test for UWES-17 by internal consistency with the measurement of Cronbach’s alpha. The internal consistency is deemed acceptable if Cronbach’ s alpha ≥ 0.70 . Adapted from “The Third Version of the Copenhagen Psychosocial Questionnaire” , by H. Burr, H. Berthelsen, S. Moncada, M. Nubling, E. Dupret, Y. Demiral, J. Oudyk, T. S. Kristensen, C. Llorens, A. Navarro, H. J. Lincke, C. Bocerean, C. Sahan, P. Smith, A. Pohrt, International COPSOQ Network, 2019, Safety and Health at work, 10(4), 482-503. <https://doi.org/10.1016/j.shaw.2019.10.002>

4.2 Inferential Analysis

4.2.1 Psychosocial work environment and work engagement

A Pearson product-moment correlation coefficient was computed to assess the relationship between nurses' assessment on their psychosocial work environment and their perceived work engagement level. Table 4-4 shows the cross-sectional correlation between 26 work-related psychosocial factors and the 3 work engagement characteristics.

There were 13 work-related psychosocial factors statistically significantly correlated with characteristic 'Vigor', 'Absorption' and overall engagement level while fewer significantly correlation were found with characteristic 'Dedication' (8 correlations).

Psychosocial factors, such as meaning of work, role clarity, sense of community at work, recognition, quality of work, job satisfaction, horizontal trust and organizational justice showed a moderate positive correlation with all the characteristics (Vigor, Dedication and Absorption) and overall engagement level (Table 4-4). Increases in these work-related psychosocial factors were correlated with the increases in nurses' work engagement level.

There was negative correlation between psychosocial factors such as emotional demands, demands for hiding emotions and influence at work with all characteristics and overall engagement level, however, the correlation is poor and not significant ($p > .050$) (Table 4-4). Hence, decreases in emotional demands, demands for hiding emotions and influence at work did not appear to be associated with the increases of nurses' work engagement level.

Overall score mean indicates the overall engagement (vigor, dedication and absorption) level of the nurses. Psychosocial factors such as meaning of work ($r(39)=.44, p<.010$), predictability($r(39)=.33, p<.050$), role clarity ($r(39)=.54, p<.050$), role conflict ($r(39)=.31, p<.050$), quality of leadership($r(39)=.45, p<.010$), sense of community at work($r(39)=.51, p<.010$), recognition ($r(39)=.39, p<.050$), quality of work($r(39)=.49, p<.010$), job satisfaction ($r(39)=.51, p<.010$), horizontal trust ($r(39)=.48, p<.010$), vertical trust($r(39)=.39, p<.050$), organizational justice($r(39)=.57, p<.010$) and self-rated health ($r(39)=.34, p<.050$) were found positively and moderately related with work engagement level among nurses. Of these, organizational justice was reported highest correlation with overall engagement level ($r(39)=.57, p<.010$), followed by job satisfaction ($r(39)=.51, p<.010$) and sense of community at work ($r(39)=.51, p<.010$) (Table 4-4). High rating of these psychosocial factors were correlated with increases in work engagement level among respondent.

4.2.2 Sociodemographic characteristics with psychosocial work environment and work engagement

Bivariate Pearson Correlation was conducted to investigate the relationship between sociodemographic characteristics such as age and years of experience with the work -related psychosocial factors. There were 24 psychosocial factors negatively correlated with the age; however, the relationship was poor and not significant except for factors 'Illegitimate task' ($r(39)= -.32, p<.050$) and 'quality of work' ($r(39)= -.33, p<.050$) (Table 4-5). Increases of age was significantly correlated with the decreases in rating of illegitimate task and quality of work. Whilst years of experience was also negatively and moderately related to psychosocial factors such as 'emotional demands' ($r(39) =-.32, p<.050$), 'control over working time' ($r(39)=-.31, p<.050$), 'quality of work' ($r(39)=-.34, p<.050$) and 'vertical trust' ($r(39)=-.33, p<.050$) (Table 4-5).

Longer years of working experience was significantly associated with the lower rating of emotional demands, control over working time, quality of work and vertical trust.

Independent t-test and one-way analysis of variance (ANOVA) were conducted on the effect of five categorical independent variables (gender, ethnicity, marital status, highest education qualification and working department) on work-related psychosocial factors. Gender and marital status included two levels while ethnicity, highest education qualification and working department consisted of more than two levels. Of these, there were no statistically differences among all psychosocial factors in the following demographic variables: gender, marital status and highest educational qualification ($p>.050$) (Table 4-5).

The ANOVA findings revealed that there was a statistically significant difference in mean of some work-related psychosocial factors between at least two group in Ethnicity ($F(3, 37)= 3.194, p= .035$). Malay nurses had significantly higher score in psychosocial factor 'control over working time' ($M=2.90, SD=.72, p=.035$) and 'recognition' ($M=3.69, SD=.86, p=.035$) than other ethnics; while Chinese nurses had significantly lower score in 'Quantitative demands' ($M=2.42, SD=.69, p=.040$) and India had lower score in subdomains 'Illegitimate task' ($M=1.00, p=.031$) and 'quality of work' ($M=1.00, p=.040$) when compared to other ethnic (Table 4-5). The main effect for working department also yielded an F ratio of $F(8, 32)=2.483, p=.032$, indicating a significant difference between different wards on psychosocial factors. Those nurses from rehabilitation wards had significantly higher score in psychosocial factor 'quantitative demands' ($M= 3.67, p=.032$) while paediatric ward nurses had scored the statistically significant lowest ($M=1.67, p=.032$) (Table 4-5).

Table 4-4*Pearson's r correlation for psychosocial work environment and work engagement among registered nurses in Serdang Hospital (n=41)*

COPSOQ (III) Domains and items	Vigor	Dedication	Absorption	Overall Score Mean
Demands at work				
Quantitative demands	0.08	-0.08	0.09	0.04
Work pace	0.22	0.29	0.19	0.24
Emotional demands	-0.02	-0.16	-0.06	-0.08
Demands for hiding emotions	-0.06	-0.09	-0.11	-0.09
Work organization and job content				
Influence	-0.05	-0.13	-0.03	-0.07
Possibilities for development	0.27	0.29	0.27	0.29
Control over working time	0.01	-0.27	-0.01	-0.09
Meaning of work	0.39*	0.47**	0.41**	0.44**
Interpersonal relation and leadership				
Predictability	0.34*	0.26	0.34*	0.33*
Role clarity	0.50**	0.46**	0.57**	0.54**
Role conflict	0.39*	0.15	0.34*	0.31*
Quality of leadership	0.50**	0.29	0.49**	0.45**
Social support from superior	0.07	0.10	0.05	0.07
Social support from colleagues	0.23	0.21	0.18	0.21
Sense of community at work	0.51**	0.42**	0.51**	0.51**
Recognition	0.37*	0.32*	0.41**	0.39*
Illegitimate tasks	0.25	-0.01	0.31	0.20

Work individual interface				
Job Insecurity	0.12	0.08	0.12	0.11
Insecurity over working conditions	0.17	0.15	0.23	0.19
Quality of work	0.50**	0.33*	0.56**	0.49**
Job Satisfaction	0.51**	0.40**	0.53**	0.51**
Work Life Conflict	0.10	0.08	0.10	0.09
Social capital				
Horizontal Trust	0.43**	0.55**	0.42**	0.48**
Vertical Trust	0.40**	0.29	0.41**	0.39*
Organizational Justice	0.59**	0.40**	0.61**	0.57**
Health and well-being				
Self-rated Health	0.40**	0.24	0.33*	0.34*

*Correlation is significant at the 0.050 level (2-tailed). **Correlation is significant at the 0.010 level (2-tailed).

With regard to work engagement, age and years of experience were negatively related to all dimensions of UWES-17 (Vigor, Dedication and Absorption) and overall engagement score mean; however, the correlation was poor and insignificant (Table 4-6). Therefore, age and years of experience are appeared to have limited impact to the work engagement among nurses.

Independent t-test and one-way ANOVA were conducted to investigate the effect of five categorical independent variables on work engagement level. The findings showed that there were no statistically differences among the dimensions of UWES-17 in all the demographic variables: gender, ethnicity, marital status, highest educational qualification and working department (Table 4-6).

Table 4-5

Psychosocial work environment according to sociodemographic characteristics of Registered Nurse in Serdang Hospital (n=41)

Socio-demographic characteristics	Psychosocial work environment aspects (COPSOQ III)												
	QD	WP	ED	HE	IN	PD	CT	MW	PR	RE	CL	CO	IT
Age	-0.27	-0.16	-0.17	-0.10	-0.17	-0.01	-0.24	-0.03	-0.05	-0.03	-0.20	-0.13	-0.32*
p-value	0.086	0.331	0.280	0.556	0.289	0.944	0.128	0.831	0.753	0.861	0.218	0.435	0.040
Years of experience	-0.28	-0.26	-0.32*	-0.16	-0.20	-0.19	-0.31*	-0.04	-0.08	-0.07	-0.26	-0.19	-0.29
p-value	0.077	0.105	0.040	0.304	0.205	0.233	0.048	0.787	0.636	0.654	0.101	0.227	0.068
Gender													
Male	3.13	4.05	3.13	3.57	3.23	4.17	3.13	3.90	3.80	3.50	3.83	3.75	3.20
	(±0.79)	(±0.45)	(±0.67)	(±0.52)	(±0.89)	(±0.71)	(±0.87)	(±0.74)	(±0.63)	(±1.08)	(±0.74)	(±0.59)	(±0.63)
Female	3.06	3.76	3.16	3.23	3.25	3.99	2.63	4.16	3.89	3.48	3.92	3.50	3.32
	(±0.65)	(±0.68)	(±0.86)	(±0.73)	(±0.63)	(±0.91)	(±0.65)	(±0.88)	(±0.89)	(±0.85)	(±0.78)	(±0.86)	(±0.91)
p-value	0.783	0.213	0.925	0.182	0.922	0.578	0.060	0.402	0.777	0.961	0.750	0.397	0.695

Ethnicity													
Malay	3.07	3.92	3.18	3.28	3.26	4.05	2.90	4.08	3.94	3.69	3.96	3.66	3.38
	(±0.63)	(±0.57)	(±0.84)	(±0.70)	(±0.68)	(±0.88)	(±0.72)	(±0.83)	(±0.84)	(±0.86)	(±0.78)	(±0.81)	(±0.75)
Chinese	2.42	3.13	2.58	3.00	2.69	4.00	2.25	4.13	3.63	2.75	3.50	2.88	3.00
	(±0.69)	(±1.03)	(±0.42)	(±0.72)	(±0.80)	(±1.36)	(±0.54)	(±1.44)	(±1.25)	(±0.96)	(±1.04)	(±0.85)	(±1.15)
Indian	3.33	4.50	3.67	4.67	3.75	4.00	1.25	5.00	3.50	2.00	3.67	3.50	1.00
Others	3.75	3.63	3.42	3.50	3.56	3.92	2.44	4.00	3.63	3.00	3.92	3.50	3.50
	(±0.50)	(±0.25)	(±0.74)	(±0.33)	(±0.52)	(±0.17)	(±0.13)	(±0.00)	(±0.25)	(±0.00)	(±0.17)	(±0.58)	(±0.58)
p-value	0.040	0.064	0.427	0.177	0.264	0.993	0.035	0.764	0.788	0.035	0.723	0.340	0.031
Marital Status													
Single	3.13	3.90	3.20	3.41	3.18	4.12	2.85	4.16	3.92	3.52	3.62	3.99	3.44
	(±0.67)	(±0.68)	(±0.82)	(±0.66)	(±0.67)	(±0.75)	(±0.75)	(±0.80)	(±0.79)	(±0.96)	(±0.78)	(±0.74)	(±0.82)
Married	3.00	3.72	3.08	3.15	3.34	3.90	2.59	4.00	3.78	3.44	3.47	3.77	3.06
	(±0.70)	(±0.58)	(±0.81)	(±0.74)	(±0.72)	(±1.02)	(±0.69)	(±0.93)	(±0.91)	(±0.81)	(±0.85)	(±0.80)	(±0.85)
p-value	0.543	0.382	0.657	0.235	0.464	0.424	0.276	0.561	0.608	0.778	0.561	0.382	0.165

Highest education qualification														
Bachelor Degree	3.10	3.95	3.32	3.50	3.40	4.18	2.70	4.18	3.93	3.45	4.00	3.45	3.20	
	(±0.79)	(±0.67)	(±0.70)	(±0.71)	(±0.64)	(±0.76)	(±0.75)	(±0.80)	(±0.71)	(±0.89)	(±0.62)	(±0.78)	(±0.89)	
Post basic	3.33	3.75	3.83	3.17	3.50	4.00	3.00	3.75	4.00	3.50	3.33	3.50	3.00	
	(±0.00)	(±0.35)	(±0.71)	(±0.24)	(±0.71)	(±1.41)	(±0.71)	(±1.06)	(±1.41)	(±0.71)	(±0.47)	(±0.71)	(±0.00)	
Diploma	3.04	3.71	2.91	3.12	3.05	3.88	2.78	4.05	3.79	3.53	3.86	3.68	3.42	
	(±0.59)	(±0.63)	(±0.87)	(±0.68)	(±0.72)	(±0.94)	(±0.74)	(±0.91)	(±0.93)	(±0.96)	(±0.90)	(±0.85)	(±0.84)	
p-value	0.832	0.507	0.140	0.234	0.255	0.552	0.844	0.765	0.860	0.967	0.482	0.666	0.642	
Current working department														
Medical	3.36	3.77	3.26	3.15	3.37	3.77	3.04	3.69	3.58	3.46	3.74	3.46	3.23	
	(±0.58)	(±0.63)	(±0.87)	(±0.92)	(±0.63)	(±1.04)	(±0.75)	(±0.93)	(±1.02)	(±0.88)	(±0.88)	(±0.99)	(±0.83)	
Surgical	2.33	3.38	3.08	3.50	3.50	4.33	2.81	4.38	4.25	3.25	3.92	3.88	3.50	
	(±0.82)	(±1.03)	(±0.57)	(±0.19)	(±0.35)	(±0.61)	(±0.55)	(±0.75)	(±0.87)	(±0.96)	(±0.42)	(±0.48)	(±0.58)	

Rehabilitation	3.67	3.50	3.67	3.67	3.50	4.00	3.75	4.00	4.00	4.00	4.33	3.50	4.00
Orthopaedic	3.00 (±0.33)	4.00 (±0.00)	3.11 (±0.38)	2.89 (±0.51)	2.75 (±0.25)	4.33 (±0.58)	2.50 (±0.90)	4.67 (±0.29)	4.17 (±0.76)	3.67 (±0.58)	4.33 (±0.58)	3.83 (±1.04)	3.33 (±0.58)
Cardiology	3.22 (±0.51)	3.17 (±0.29)	2.67 (±1.20)	3.78 (±0.38)	3.17 (±0.52)	3.67 (±1.15)	3.08 (±0.52)	4.00 (±1.00)	4.33 (±0.29)	4.00 (±1.00)	4.56 (±0.77)	4.17 (±0.29)	3.67 (±0.58)
Cardiothoracic	2.67	3.50	2.67	3.33	2.75	3.67	2.25	3.50	3.50	2.00	3.00	3.50	3.00
Paediatric	1.67	4.50	3.67	4.00	2.50	4.00	2.25	3.50	3.50	4.00	3.67	3.00	3.00
General Intensive Care	2.89 (±0.62)	4.06 (±0.53)	2.89 (±0.85)	3.22 (±0.82)	3.06 (±1.02)	4.07 (±1.00)	2.56 (±0.80)	4.28 (±1.00)	3.78 (±0.83)	3.33 (±1.12)	3.81 (±0.69)	3.33 (±0.87)	3.11 (±1.27)
Obstetrics and Gynaecology	3.44 (±0.50)	4.17 (±0.61)	3.56 (±0.86)	3.44 (±0.34)	3.54 (±0.60)	4.44 (±0.50)	2.33 (±0.58)	4.50 (±0.45)	4.08 (±0.74)	3.67 (±0.82)	3.94 (±0.93)	3.58 (±0.66)	3.33 (±0.82)
p-value	0.032	0.261	0.796	0.792	0.665	0.870	0.400	0.500	0.822	0.763	0.718	0.875	0.979

*Correlation is significant at the 0.050 level (2-tailed).

Abbreviation: COPSQIII, Copenhagen Psychosocial Questionnaire III; QD, quantitative demands; WP, work pace; ED, emotional demands; HE, demands for hiding emotions; IN, Influence at work; PD, possibilities for development; CT, control over working time; MW, meaning of work; PR, predictability; RE, recognition; CL, role clarity; CO, role conflicts; IT, illegitimate tasks.

Table 4-5 (Continued)*Psychosocial work environment according to sociodemographic characteristics of Registered Nurse in Serdang Hospital (n=41)*

Socio-demographic characteristics	Psychosocial work environment aspects (COPSOQ III)												
	QL	SS	SC	SW	JI	IW	QW	JS	WF	TE	TM	JU	GH
Age	-0.18	-0.16	0.01	-0.05	0.30	-0.06	-0.33*	-0.02	-0.17	-0.14	-0.18	-0.22	-0.05
p-value	0.252	0.305	0.939	0.779	0.055	0.724	0.036	0.919	0.297	0.379	0.253	0.170	0.760
Years of experience	-0.27	-0.16	-0.09	-0.02	0.06	-0.07	-0.34*	0.15	-0.23	-0.12	-0.33*	-0.26	0.004
p-value	0.091	0.318	0.599	0.917	0.729	0.651	0.032	0.358	0.153	0.444	0.033	0.101	0.978
Gender													
Male	3.67 (±0.79)	3.50 (±0.82)	3.80 (±0.67)	3.85 (±0.97)	3.35 (±1.16)	3.13 (±1.18)	3.50 (±0.71)	3.43 (±0.63)	3.55 (±0.93)	3.50 (±0.85)	3.90 (±0.74)	3.40 (±0.91)	3.50 (±0.97)
Female	3.57 (±0.81)	3.10 (±0.71)	3.51 (±0.88)	3.76 (±0.68)	3.27 (±1.15)	3.54 (±0.90)	3.55 (±1.03)	3.60 (±0.55)	3.16 (±0.95)	3.35 (±1.08)	3.35 (±0.78)	3.44 (±0.92)	3.35 (±0.84)
p-value	0.742	0.141	0.357	0.741	0.857	0.260	0.891	0.422	0.266	0.701	0.059	0.916	0.649

Ethnicity													
Malay	3.68	3.27	3.73	3.88	3.39	3.42	3.63	3.56	3.27	3.34	3.58	3.52	3.44
	(±0.75)	(±0.74)	(±0.84)	(±0.75)	(±1.17)	(±0.99)	(±0.91)	(±0.58)	(±1.00)	(±1.07)	(±0.78)	(±0.90)	(±0.91)
Chinese	3.25	3.13	2.75	3.13	2.13	2.92	3.25	3.67	2.75	3.50	3.17	3.13	3.25
	(±0.96)	(±0.85)	(±0.50)	(±0.85)	(±0.63)	(±1.07)	(±0.96)	(±0.61)	(±0.50)	(±1.00)	(±1.00)	(±0.85)	(±0.50)
Indian	1.67	2.00	3.00	3.00	4.50	5.00	1.00	2.67	5.00	5.00	2.00	1.50	2.00
Others	3.75	3.00	3.38	3.88	3.38	3.75	3.75	3.67	3.25	3.00	3.42	3.50	3.50
	(±0.50)	(±0.71)	(±0.63)	(±0.25)	(±0.48)	(±0.17)	(±0.50)	(±0.38)	(±0.29)	(±0.00)	(±0.42)	(±0.58)	(±0.58)
p-value	0.061	0.382	0.121	0.196	0.128	0.253	0.040	0.447	0.213	0.385	0.202	0.149	0.426
Marital Status													
Single	3.57	3.30	3.56	3.78	3.18	3.60	3.76	3.51	3.40	3.56	3.56	3.44	3.28
	(±0.79)	(±0.76)	(±0.81)	(±0.78)	(±1.15)	(±0.83)	(±0.93)	(±0.59)	(±0.91)	(±0.96)	(±0.77)	(±0.83)	(±0.84)
Married	3.63	3.03	3.63	3.78	3.47	3.19	3.19	3.65	3.03	3.13	3.38	3.41	3.56
	(±0.82)	(±0.72)	(±0.90)	(±0.73)	(±1.12)	(±1.15)	(±0.91)	(±0.54)	(±0.99)	(±1.09)	(±0.84)	(±1.04)	(±0.89)
p-value	0.842	0.268	0.812	0.996	0.434	0.190	0.059	0.453	0.230	0.187	0.475	0.909	0.312

Highest education qualification													
Bachelor	3.47	3.20	3.48	3.60	2.93	3.28	3.45	3.50	3.33	3.60	3.52	3.28	3.20
Degree	(±0.84)	(±0.71)	(±0.79)	(±0.70)	(±1.13)	(±0.85)	(±0.89)	(±0.57)	(±0.88)	(±0.82)	(±0.73)	(±0.82)	(±0.89)
Post basic	3.50	3.00	4.00	3.75	4.00	4.00	3.00	3.67	3.50	3.00	3.17	3.25	4.00
	(±0.71)	(±0.00)	(±0.00)	(±0.35)	(±1.41)	(±1.41)	(±0.00)	(±0.47)	(±0.71)	(±0.00)	(±0.24)	(±0.35)	(±1.41)
Diploma	3.74	3.21	3.66	3.97	3.61	3.54	3.68	3.61	3.16	3.21	3.49	3.61	3.53
	(±0.77)	(±0.84)	(±0.93)	(±0.81)	(±1.05)	(±1.08)	(±1.06)	(±0.60)	(±1.07)	(±1.23)	(±0.91)	(±1.02)	(±0.77)
p-value	0.573	0.933	0.623	0.306	0.114	0.511	0.544	0.802	0.810	0.433	0.845	0.514	0.302
Current working department													
Medical	3.62	3.04	3.23	3.73	3.50	3.46	3.46	3.54	3.38	3.00	3.51	3.23	3.54
	(±0.95)	(±0.85)	(±0.95)	(±0.70)	(±1.04)	(±0.90)	(±0.97)	(±0.50)	(±0.94)	(±1.08)	(±0.96)	(±0.95)	(±0.66)
Surgical	3.58	3.13	3.50	3.38	2.75	3.00	3.75	3.67	3.00	3.75	3.75	3.63	2.75
	(±0.50)	(±0.25)	(±0.71)	(±0.48)	(±1.71)	(±1.36)	(±0.50)	(±0.38)	(±0.00)	(±0.50)	(±0.50)	(±0.25)	(±0.50)
Rehabilitation	4.33	4.50	4.50	4.00	3.50	4.33	4.00	2.67	4.00	3.00	3.67	4.00	4.00

Orthopaedic	4.00 (±0.67)	3.67 (±0.58)	4.17 (±0.29)	4.33 (±0.58)	3.50 (±1.50)	4.11 (±1.02)	4.33 (±1.15)	3.33 (±0.67)	3.50 (±1.32)	3.67 (±1.15)	3.78 (±1.07)	4.00 (±0.87)	3.00 (±1.73)
Cardiology	4.00 (±0.00)	3.33 (±0.76)	3.67 (±1.53)	4.17 (±1.04)	4.00 (±1.00)	3.44 (±1.26)	3.00 (±1.00)	3.56 (±0.77)	2.50 (±1.50)	3.00 (±1.73)	3.22 (±0.84)	3.83 (±1.26)	3.67 (±1.15)
Cardiothoracic	3.33	2.50	3.00	2.50	4.00	4.33	3.00	4.00	3.50	2.00	3.00	2.50	3.00
Paediatric	3.00	2.50	3.00	2.50	2.00	2.67	3.00	3.00	3.00	3.00	2.33	2.00	3.00
General Intensive Care	3.30 (±0.93)	3.44 (±0.81)	3.78 (±0.83)	3.78 (±0.87)	3.00 (±1.12)	3.15 (±1.07)	3.44 (±1.24)	3.52 (±0.78)	3.56 (±1.01)	4.00 (±0.87)	3.48 (±0.90)	3.28 (±1.12)	3.67 (±1.00)
Obstetrics and Gynaecology	3.61 (±0.77)	2.92 (±0.58)	3.83 (±0.26)	4.08 (±0.49)	3.25 (±1.17)	3.61 (±0.80)	3.67 (±0.82)	3.89 (±0.27)	2.83 (±0.93)	3.50 (±0.84)	3.50 (±0.46)	3.75 (±0.42)	3.17 (±0.75)
p-value	0.853	0.404	0.563	0.222	0.799	0.737	0.850	0.603	0.744	0.405	0.907	0.505	0.713

*Correlation is significant at the 0.050 level (2-tailed).

Abbreviation: QL, quality of leadership; SS, social support from supervisor; SC, social support from colleagues; SW, sense of community at work; JI, job insecurity; IW, Insecurity over working conditions; QW, quality of work; JS, job satisfaction; WF, work life conflicts; TE, horizontal trust; TM, vertical trust; JU, organizational justice; GH, self-rated health.

Table 4-6*Work engagement according to sociodemographic characteristics of Registered Nurse in Serdang Hospital (n=41)*

Socio-demographic characteristics	Work Engagement				Overall Score Mean
	Vigor	Dedication	Absorption		
Age	-0.19	-0.01	-0.26		-0.17
p-value	0.233	0.956	0.095		0.283
Years of experience	-0.16	-0.09	-0.25		-0.18
p-value	0.313	0.596	0.122		0.265
Gender					
Male	3.45(±1.17)	3.68(±1.30)	3.48(±1.31)		3.53(±1.23)
Female	3.69(±0.98)	4.15(±1.04)	3.91(±1.13)		3.90(±0.99)
p-value	0.529	0.244	0.325		0.335
Ethnicity					
Malay	3.77(±0.98)	4.05(±1.11)	3.93(±1.16)		3.91(±1.05)
Chinese	2.92(±1.04)	3.85(±1.50)	3.08(±1.29)		3.25(±1.24)

Indian	2.67	5.20	2.33	3.29
Others	3.50(±1.35)	3.85(±0.96)	3.88(±1.11)	3.74(±1.12)
p-value	0.335	0.737	0.333	0.660
Marital Status				
Single	3.55(±1.13)	3.97(±1.13)	3.81(±1.24)	3.76(±1.14)
Married	3.76(±0.84)	4.15(±1.11)	3.79(±1.10)	3.89(±0.94)
p-value	0.521	0.615	0.955	0.724
Highest education qualification				
Bachelor Degree	3.37(±1.01)	3.99(±1.20)	3.59(±1.16)	3.63(±1.06)
Post basic	3.50(±0.71)	3.80(±0.00)	3.50(±0.47)	3.59(±0.42)
Diploma	3.92(±1.02)	4.11(±1.10)	4.06(±1.22)	4.03(±1.09)
p-value	0.239	0.899	0.437	0.486
Current working department				
Medical	3.24(±1.08)	3.46(±0.89)	3.46(±1.12)	3.38(±1.01)

Surgical	3.42(±0.48)	3.60(±0.52)	3.54(±0.42)	3.51(±0.42)
Rehabilitation	3.17	4.20	4.00	3.76
Orthopaedic	4.22(±0.84)	4.73(±0.42)	4.72(±0.48)	4.55(±0.57)
Cardiology	3.83(±1.45)	3.67(±1.97)	3.83(±2.17)	3.78(±1.85)
Cardiothoracic	4.00	4.00	4.17	4.06
Paediatric	3.17	3.40	3.00	3.18
General Intensive Care	3.80(±1.16)	4.80(±1.21)	3.89(±1.41)	4.12(±1.20)
Obstetrics and Gynaecology	4.06(±1.06)	4.37(±1.08)	4.17(±1.22)	4.19(±1.09)
p-value	0.796	0.205	0.854	0.696

CHAPTER 5

DISCUSSION

5.0 Introduction

This chapter discuss the findings of the research, explore the meaning and how the findings fit into the pre-existing studies.

5.1 Summary of statistical analysis

5.1.1 Descriptive analysis

This study was performed on a sample of 41 registered nurses who working in a public hospital to investigate the relationship between psychosocial work environment and work engagement level and the effect of socio-demographic characteristics on these variables. The majority of nurses in this study was comprised of women (75.6%). This finding was similar to other studies conducted in China (Cao & Chen, 2019; Fan et al., 2016), Spain (Allande-Cussó et al., 2021), Belgium (Van Bogaert et al., 2017) and Brazil (da Silva et al., 2019), indicating that nursing still remains as a female-dominated profession. In addition, of the sample, majority of the respondents were either Degree holder (48.8%) or Diploma holder (46.3%). This can

be explained by the effort of Malaysia Nursing Board to produce a statistical database of nurses with degree qualification and above by the means of offering degree course to whoever with Diploma, Matriculation, STPM/A-level background (Sowtali, 2019).

With regards to the psychosocial work environment, the finding indicated that respondents had satisfactory rating for all work-related psychosocial factors, ranging from 2.75 to 4.10. Of the 26 psychosocial factors provided, 'meaning of work' scored the highest mean among respondents while 'control over working time' scored the lowest, indicating that the respondents were satisfied for the meaning bought by their work but having poor control over working time. This phenomenon may be explained by the increasing workload and demands resulted by pandemic which then forcing the nurse to work overtime in order to complete the work. In general, the respondents in this study had medium level of work engagement with UWES-17 score of 3.81, comparable to the previous study (Fan et al., 2016; Van Bogaert et al., 2017). This is also in line with the findings of the previous study in Malaysia (Hew et al., 2013) that showing medium to high work engagement ranging from 3.43 to 4.17 among hospital-based nurses conducted in public and private hospitals. The work engagement level of nurses was showing not much discrepancy even in the period of COVID-19 pandemic as compared to the previous study which conducted in 2013 (Hew et al., 2013). However, this result contradicts the claims of Allande-Cussó et al. (2021) that the work engagement level increased during COVID-19 pandemic. According to the findings of Allande-Cussó et al. (2021), the mean work engagement score obtained among nurses in Spain was higher than the engagement score obtained in the other studies prior to COVID-19 pandemic. This phenomenon may be due to the confidence and self-esteem resulted by the high commitment to work, more meaning of work they

develop, and the positive social image of nurses created by social media during pandemic which eventually encouraging the work engagement level among nurses.



5.1.2 Inferential analysis

5.1.2.1 Psychosocial work environment and work engagement

The findings of Pearson Correlation showed that certain work-related psychosocial factors were positively and significantly related to work engagement level among respondents. Of the 26 work-related psychosocial factors, 'meaning of work', 'role clarity', 'sense of community at work', 'recognition', 'quality of work', 'job satisfaction', 'horizontal trust' and 'organizational justice' showed a moderate positive significant correlation with all the characteristics (Vigor, Dedication and Absorption) and overall engagement level, indicating that the improvement of these work-related factors is related with the willingness to put effort in work, involvement and immersion in work and engagement level among respondents.

The positive association between 'meaning of work' and work engagement built on the existing evidence of study conducted by Beukes & Botha (2013). According to Beukes & Botha (2013), the nurses who have high sense of meaning in work perceived their job as a calling instead of just a financial source. They gained sense of fulfilment in their job and thus are found more likely to detach and engaged to the organization. This claim is also supported by other study by DiNapoli et al. (2016) which indicated that psychosocial empowerment that comprised of 'meaning of work' was positively correlated with work engagement among nurses.

With regards to the positive association between 'recognition' and work engagement, the cross-sectional study conducted by Haizlip et al. (2020) had showing the similar finding, as well. According to the narrative response from nurses (Haizlip et al., 2020), the recognition can be either from patient or organization. The small gesture or motivating words from patient can help the nurses to realise their value to

others and become more engaged to the upcoming task. In addition, the rewards and annual awards from nursing department can also instil the sense of mattering among the nurses. The nurses would feel appreciated and valued in which their effort and commitment are not unseen by their superior and go in vain. This result is in line with the VCR (Visibility, Communication, Recognition) strategy proposed by George & Massey (2020) with the attempt to improve work engagement. In this strategy, the nurse leader should acknowledge and highlight the subordinates' excellence with compliment and promotion. These action not only can improve the work engagement among those nurses who get the rewards, yet this can foster the positive competitive ambiance among the nurse to achieve their best. With the internal and external recognition, the work engagement of nurses will be improved and thus reducing the turnover rate.

Of the sample, high rating of 'job satisfaction' and 'quality of work' is significantly positively related to the work engagement. Both 'job satisfaction' and 'quality of work' is under the 'work-individual interface' domain in COPSOQIII. This result does not fit with the study conducted by Hassona et al. and argued by its finding (2021) that there was no statistically significant correlation between quality of work-life and work engagement.

In addition, the increases of 'horizontal trust' and 'organizational justice' were significantly related to the increase of work engagement. In this study, 'horizontal trust' and 'organizational justice' are under the domains of 'social capital' in COPSOQIII. The results are in line with the finding of test and retest questionnaire survey conducted by Norokoshi et al. (2020) which involve 309 nurses (1st survey) and 105 nurses (2nd survey) from four hospitals in Japan. From its finding, relational workplace social capital is positively correlated with work engagement.

Albeit 'social support from superior' and 'social support from colleagues' in this study had showed positive poorly and insignificant correlation with work engagement, but they had been found significantly positively related with work engagement in many existing studies. According to the cross-sectional study by Cao & Chen (2019), support from others had a positive significant predictive effect on work engagement. This claim was also supported by other researchers in India (Gupta et al., 2016) that perceived organizational support is positively associated with work engagement. Since the studies were all cross-sectional study, there is no cause-and-effect relationship can be identified between psychosocial work environment and work engagement, instead, only correlation can be found. The positive correlation between work engagement and the factor 'social support' can be also studied in a cross-sectional study conducted by Adriaenssens et al. (2017) which involved 318 nurse managers in 11 Belgian hospitals. According to Adriaenssens et al. (2017), engaged staff nurses were more likely to create a positive work environment that foster respect, understanding, teamwork and social support among colleagues. Hence, the correlation between 'social support' and work engagement still requires further study which involve larger sample size to achieve higher accuracy.

Moreover, of the sample, decreases in emotional demands and demands for hiding emotions did not appear to be associated with the increases of nurses' work engagement level. This is not parallel to the Job-Demands Resources Model proposed by Hakanen et al. (2006) which indicating that the decrease of job demands such as emotional demands, demands for hiding emotion and work demands are related with the increase of work engagement.

5.1.2.2 Socio-demographic characteristics and psychosocial work environment

The findings of Pearson correlation showed that increase of age was significantly correlated with the decreases in rating of 'illegitimate task'. This is parallel to the study conducted by Stahl et al. (2017) that the older responders have more positive assessment on their workload and scheduling compared to the younger nurses. However, this claim is argued by Raso et al. (2020) with their cross-sectional study finding which involve 254 nurses that the age and years of experience does not have significant association with nurses' perception on work environment. Besides, in this study, older nurses were significantly related with low rating of 'quality of work', indicating that they are unsatisfied of the quality of work in their organization. This may be explained by the high expectation of experienced nurses from their workplace compared to younger nurses as they have acquired enough knowledge to have their own insight and clinical judgement.

The one-way ANOVA test presented that there is significantly difference of assessment on work environment between different ethnicity and working department. Malay nurses had significantly higher score in psychosocial factor 'control over working time' and 'recognition' than other ethnics; while Chinese nurses had significantly lower score in 'Quantitative demands' and Indian had lower score in subdomains 'Illegitimate task' and 'quality of work' when compared to other ethnic. However, there is limited access of relevant study in Malaysia which showing the association between ethnicity and their assessment on work environment, hence, further study is required.

With regards to the working department, the one-way ANOVA showed that the perception of work environment was significantly different among nurses from

different departments. Those nurses from rehabilitation wards had significantly higher score in psychosocial factor ‘quantitative demands’ compared to the paediatric ward nurses who had scored the statistically significant lowest. This finding is in line with the study conducted by Alperovitch-Najenson et al. (2014) that rehabilitation nurse has higher work demands compared to other department. According to Waters and Rockefeller (Alperovitch-Najenson et al., 2014), the rehabilitation nurses have to perform high energy consuming ‘therapeutic’ task in which intend to improve patient’s physical mobility and independency compared to the ‘traditional’ task that only provide required help to patients. Thus, the high physical and psychosocial demands of rehabilitation department resulted in high rating of ‘work demands ’among rehabilitation nurses.

5.1.2.3 Socio-demographic characteristics and work engagement

The Pearson Correlation presented that age and years of experience are appeared to have limited impact to the work engagement among nurses, comparable with finding of study conducted by Cao and Chen (2019) indicating that age is not significant related to work engagement. However, in the same study, the finding of the insignificant association between occupational tenure and work engagement is argued. In the study by Cao and Chen (2019), occupational tenure was significantly associated with work engagement. This is supported by other previous studies (Da Silva et al., 2019; Wan et al., 2018) that age is significantly associated with work engagement. In addition, the finding of a questionnaire that involved 949 nurses in three large tertiary hospitals in Hanoi, Vietnam (Tran et al., 2020) presented that there is significant negative correlation between occupational tenure and work engagement. According to Tran et al. (2020), work engagement is reduced with increased of working experience due to greater work demands, low social support and high risk for mental disease.

The findings of independent t-test and one-way ANOVA showed that there were no statistically differences in all the engagement characteristics (Vigor, Dedication and Absorption) and overall engagement score among nurses with the different demographic variables: gender, ethnicity, marital status, highest educational qualification and working department. This is comparable with the findings of cross-sectional study (Da Silva et al., 2019), however, the claim is argued by the previous literature (Guo & Zhu, 2018) that engagement level is associated with the gender, work department, highest educational qualification, and professional titration.

CHAPTER 6

CONCLUSION

6.0 Introduction

This chapter discusses about the major implication of research, limitation, recommendation for future research and conclusion of the study.

6.1 Major Implication

Based on the findings obtained by this study, work engagement is positively associated with these eight work-related psychosocial factors: meaning of work, role clarity, sense of community at work, recognition, quality of work, job satisfaction, horizontal trust and organizational justice. Hence, in order to improve work engagement among nurse, the manager should be aware of these eight factors when managing their subordinates and task designation to ensure that the work environment is conducive for the nurse to develop and foster bond between each other.

The role of nurse leader and human resource management system are pivotal in all of the eight psychosocial factors. In the aspects of meaning of work, the human resource management should institutionalize the recruitment policy by taking into

consideration of the perception of candidates on the career of nursing. The human resources management should recruit more nurses who perceived nursing as a calling and a noble profession instead of just a financial resource as this can high potentially reduce the nursing turnover rate in future. Besides, the nurse leader should always organize meeting or conference with their subordinate to inspire them with the true story so that they can be inspired and imitate the good behaviour.

It is of importance that the nurse leader should designate task fairly and clearly to their subordinates. The job scope should be well designated and in fair manner so that the nurses do not get confused and have misunderstanding between each other. Role ambiguity are high likely to create blaming culture in nursing field while biased over certain subordinate can cause disappointment in other nurses which eventually caused the turnover.

Moreover, the nurse leader should highlight and appreciate the excellence of subordinate to improve their sense of accomplishment. The individual is high engaged to their job and organization if their effort and time are valued and appreciated. The nurse leader should organize ceremony such as Nursing day, promotion ceremony, farewell ceremony to appreciate the nurses for their hardwork with small gift and appreciation cards. The promotion and chance for further studying also deemed as one of the pulling factors for nurse retention.

Lastly, to foster good rapport and mutual respect between co-workers, the nurse leader should always put themselves in their subordinates' shoes and ask their opinion. The nurse leader should encourage their subordinate to voice out their true feeling so that the hindrances they are facing can be solved. Besides, the nurse leader should mix all the subordinates by allocating them in different group alternatively so

that they can know the whole team and work together regardless of the ethnic and religion. By doing this, horizontal and vertical trust can be fostered and eventually the work engagement is improved.

6.2 Limitation of this study

There are few limitations needed to be highlighted in this study. First, limited journal database access is one of the limitations. Due to financial constraints, the researcher could not able to access some of relevant and reliable studies as those studies are needed to be charged before reading.

Second, the limitation of this study is the small sample size. Due to the COVID-19 pandemic, the feedback for online self-administered questionnaire is poor. Even with the hard work of the researcher to distribute in person, the final sample size only reached 41 candidates who are eligible for the research. This may be explained by the research setting of the research. The research setting is located at Serdang Hospital, Selangor, a full COVID-19 hospital which resulted high work load on the candidate working inside and less time to respond to the questionnaire.

The third limitation is related to the small sample size, as well. Due to the small sample size, the amount of sample is hardly enough for pilot study. With the consideration of the final sample size, pilot study is omitted in this research and only Content validity index is done for the validation purpose.

Fourth, due to the poor feedback of response, the sampling method is changed from the probability method, stratified random sampling to the non-probability method, convenient sampling which resulted in higher biased response and low representative of the true population.

Fifth, due to the small sample size, some of the levels of variable only involve one respondent which resulted in zero standard deviation. The research may not be accurate and representative for the true population due to the sacred and discrete grouping.

Last, the limitation of this study is the amount of question in questionnaire. The questionnaire of this study is consisted of 77 questions without inclusion of socio-demographic information. This may reduce the patience of respondents to finish filling the questionnaire and quit on the half way.

6.3 Recommendation for future study

In order to get the whole picture of psychosocial work environment and the work engagement of the nurses in public setting, the future researchers are encouraged to conduct further studies with wider area coverage which involve more state or in all state. This is because the work environment of public setting may vary greatly in different area which then influence the work engagement among nurses.

In addition, to attain more representative finding, the researchers in future are encouraged to use probability sampling instead of non-probability to reduce bias response.

The researchers should lengthen the time frame and duration of study so that more response can be obtained and achieve greater sample size. The researchers should also use more time to interpret the data obtained to produce more precise and accurate analysis.

Last, the researchers in future should modified the questionnaire into more precise and short questionnaire yet with high reliability. The short questionnaire can

increase the response rate from respondents, especially when the respondents are hospital-based nurses who have limited time to interpret each question slowly.

6.4 Conclusion

This study has shown that the nurses worked in public setting are having moderate level of work engagement even when in the period of pandemic. The work engagement among nurses is found high likely correlated with their work environment which include the factors such as meaning of work, role clarity, sense of community at work, recognition, quality of work, job satisfaction, horizontal trust and organizational justice. Future empirical studies should include more work-related psychosocial factors so that future users can gain benefit from it.

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Appendix I: Summary of literature review

Reference	Purpose/Aim	Method	Findings
Adriaenssens, J., Hamelink, A., & Bogaert, P. Van. (2017). Predictors of occupational stress and well-being in First-Line Nurse Managers: a cross-sectional survey study. <i>International Journal of Nursing Studies</i> . doi:10.1016/j.ijnurstu.2017.05.007	To investigate the relationship between job characteristics and interdisciplinary conflicts with physician as indicator of occupational well-being.	Cross-sectional study: 318 nurse managers from 11 Belgian hospital	Job control and social support of staff members are positively related with work engagement.
Buckley. L., Berta, W., Cleverley, K., Medeiros, C., & Widger, K. (2020). What is known about paediatric nurse burnout: a scoping review. <i>Human Resources for Health</i> , 18(9). https://doi.org/10.1186/s12960-020-0451-8	To investigate (1) the burnout level, (2) factors causing burnout, (3) outcome of burnout and (4) intervention to mitigate burnout among paediatric nurses	Scoping review	Factors causing burnout: nurse demographic, work environment, work attitude, work outcome. Organizational commitment is reduced by high burnout level in healthcare provider.
Cao, X., & Chen, L. (2019). Relationships among social support, empathy, resilience and work engagement in haemodialysis nurses. <i>International Nursing Review</i> . doi:10.1111/inr.12516	To determine the levels of work engagement and to investigate the reciprocal relationships among social support, empathy, resilience and work engagement experienced by haemodialysis nurses in China.	Cross-sectional study: 345 haemodialysis nurses in China	Predictors for nurses' work engagement comprised the following: (1) general characteristics (e.g. age, gender and educational level); (2) work-related characteristics (e.g. workplace stressor and supervisor or peer support); and (3) individual characteristics (e.g. coping strategies and personality) (Keyko et al., 2016). Age is not significantly related with work engagement.

			Occupational tenure is significantly associated with work engagement.
			Support from others had a positive significant predictive effect on work engagement.
Carthon, B. J. M., Hatfield, L., Plover, C., Dierkes, A., Davis, L., Hedgeland, T., Sanders, A. M., Visco, F., Holland, S., Ballinghoff, J., Del Guidice, M., & Aiken, L. H. (2018). Association of Nurse Engagement and Nurse Staffing on Patient Safety. <i>Journal of Nursing Care Quality</i> . doi:10.1097/NCQ.0000000000000334	To investigate the association of work engagement and nurse staffing on patient safety.	Cross-sectional study: 26 960 nurses across 599 hospitals in California, Florida, New Jersey, and Pennsylvania	High level of nurse engagement and more favourable nurse-to-patient staffing ratio are associated with positive rating of patient safety.
Da Silva, A. G., Cabrera, E. M. S., Gazetta, C. E., Sodr�, P. C., Castro, J. R., Cordioli Junior, J. R., Cordioli, D. F. C., & Louren�o, L. G. (2019). Engagement in primary health care nurses: A cross - sectional study in a Brazilian city. <i>Public Health Nursing</i> . doi:10.1111/phn.12694	To study about the level of engagement among nurses in primary health care units.	Cross-sectional study: 75 nurses in Sao Paulo, Brazil	In China, hospital nurses showed average levels of engagement among professionals, with levels varying by gender, education, and place of work (Cao & Chen, 2019; Guo & Zhu, 2018). Age is significantly associated with work engagement of nurses.
D�derman, A. M., & Basinska, B. A. (2016). Job Demands, Engagement, and Turnover Intentions in Polish	To investigate the extent of both job demands and work engagement on the turnover intention.	Cross-sectional study: 188 female registered nurses	High job demands and low vigor are significantly associated with turnover intention.

<p>Nurses: The Role of Work-Family Interface. <i>Frontiers in Psychology</i>, 7. doi:10.3389/fpsyg.2016.01621</p>			
<p>DiNapoli, J. M., O'Flaherty, D., Musil, C., Clavelle, J. T., & Fitzpatrick, J. J. (2016). The Relationship of Clinical Nurses' Perceptions of Structural and Psychological Empowerment and Engagement on Their Unit. <i>JONA: The Journal of Nursing Administration</i>, 46(2), 95–100. doi:10.1097/nna.0000000000000302</p>	<p>To investigate the relationship between structural empowerment, psychological empowerment and work engagement among nurses.</p>	<p>Cross-sectional study: 280 nurses in national conference</p>	<p>Structural and psychological empowerment are positively associated with work engagement among clinical nurses.</p>
<p>Fan, Y. Y., Zheng, Q. L., Liu, S. Q., & Li, Q. J. (2016). Construction of a new model of job engagement, psychological empowerment and perceived work environment among Chinese registered nurses at four large university hospitals: implications for nurse managers seeking to enhance nursing retention and quality of. <i>Journal of Nursing Management</i>, 24(5), 646–655. doi:10.1111/jonm.12369</p>	<p>To investigate the relationship between work environment, psychological empowerment and work engagement.</p>	<p>Cross-sectional study: 923 nurses from 4 large university hospitals in China</p>	<p>Work environment is significantly related with work engagement among nurses.</p> <p>Psychological empowerment mediates the relationship between work environment and work engagement.</p>
<p>Giordano-Mulligan, M., & Eckardt, S. (2019). Authentic Nurse Leadership Conceptual Framework. <i>Nursing Administration Quarterly</i>, 43(2), 164–</p>	<p>To determine nurses' perceived authentic nurse leader attributes that support healthy work environment and promote work engagement.</p>	<p>Crossover study: 309 registered nurses</p>	<p>Authentic nurse leadership is positively related with work engagement.</p>

<p>Green, S., Markaki, A., Baird, J., Murray, P., & Edwards, R. (2020). Addressing Healthcare Professional Burnout: A Quality Improvement Intervention. <i>Worldviews on Evidence-Based Nursing</i>, 1-8. doi:10.1111/wvn.12450</p>	<p>To address the burnout level, job-related stress and job satisfaction prior to and after the implementation of engagement intervention.</p>	<p>Pre- and post-test which involved nurse, physician assistant and medical assistant in an infusion centre in large paediatric hospital</p>	<p>Work environment that is poor fit to healthcare worker can result in increased burnout level.</p> <p>The conduction of an engagement intervention should consider the (1) work environment and its connection with worker and (2) ideals of the worker and organization.</p> <p>Engagement interventions such as team huddle and peer recognition program reduced the burnout level and job-related stress and increase job satisfaction of majority of the respondents.</p>
<p>Gupta, V., Agarwal, U. A., & Khatri, N. (2016). The relationships between perceived organizational support, affective commitment, psychological contract breach, organizational citizenship behaviour and work engagement. <i>Journal of Advanced Nursing</i>. doi:10.1111/jan.13043</p>	<p>To study about the factors that mediate and moderate the relationship between perceived organizational support with work engagement and organizational citizenship behaviour.</p>	<p>Questionnaire survey: 475 nurses from 9 large hospitals in India</p>	<p>Perceived organizational support is positively associated with work engagement.</p>
<p>Holland, P. J., Tham, T. L., & Gill, F. J. (2018). What nurses and midwives want: Findings from the</p>	<p>Discussion about nationwide study of workplace and well-being of Australian nurses and midwives.</p>	<p>Discussion paper: involve Australian Nursing and Midwifery Federation members</p>	<p>Occupational turnover intention is caused by: high workload, inadequate permanent position,</p>

<p>national survey on workplace climate and well-being. <i>International Journal of Nursing Practice</i>. doi:10.1111/ijn.12630</p>			<p>unfavourable work condition, job insecurity and ineffective voice mechanism.</p>
<p>Huang, X. X., Wang, L. M., Dong, X., Li, B., & Wan, Q. Q. (2020). Effects of Nursing Work Environment on Work-Related Outcomes among Psychiatric Nurses: A Mediating Model. <i>Journal of Psychiatric and Mental Health Nursing</i>. doi:10.1111/jpm.12665</p>	<p>To study about work environment, work engagement, quality of care and turnover intention among psychiatric nurses.</p>	<p>Cross-sectional study: questionnaire survey which involve psychiatric nurses from 43 clinical units</p>	<p>Nursing work environment is deemed as key predictor of work-related outcomes, such as higher quality of care and lower turnover intention (Lake et al., 2016; Wan, Li, Zhou, & Shang, 2018). A healthy nursing work environment (WE) could contribute to higher engagement among nurses (Nayback-Beebe et al., 2013).</p> <p>Favourable work environment (WE) is a determinant factor for high quality of care (Copanitsanou et al., 2017) and reduced missed care (Lake et al., 2020).</p> <p>Favourable nursing work environment is beneficial to reduce nurse' turnover intention (Li, Li, & Wan, 2019; Van Bogaert, Clarke, Willems, & Mondelaers, 2013; Aiken, 2002).</p>

			Work engagement could partly mediate the effects of nursing work environment on work-related outcomes among nurses (Li et al., 2019; Wan et al., 2018; Van Bogaert et al., 2017)
Hung, M. S. Y., & Lam, S. K. K. (2020). Antecedents and Contextual Factors Affecting Occupational Turnover among Registered Nurses in Public Hospitals in Hong Kong: A Qualitative Descriptive Study. <i>International Journal of Environmental Research and Public Health</i> , 17(11), 3834. doi:10.3390/ijerph17113834	To investigate the factor causing occupational turnover among nurses in public hospital, Hong Kong.	Qualitative study: 18 nurses resigned from public hospital, Hong Kong	Three factors result in organizational turnover: (1) job dissatisfaction due to tense work environment; (2) limited career opportunities and (3) ineffective leadership.
Kester, K. M., Lindsay, M., & Granger, B. B. (2019). Development and Evaluation of a Prospective Staffing Model to Improve Retention. <i>Journal of Nursing Management</i> . doi:10.1111/jonm.12945	To improve predictability and accuracy in hiring nurse.	Five years longitudinal study: 388 nurses in Cardiothoracic Intensive Care Unit	Nurse retention in Cardiothoracic Intensive Care Unit (CTICU) improved by the means of AACN Healthy Work Environment (HWE) standard and Prospective Staffing Model.
Kim, K. J., & Yoo, M. S. (2018). The Influence of Psychological Capital and Work Engagement on Intention to Remain of New Graduate Nurses. <i>JONA: The Journal of Nursing Administration</i> , 48(9), 459–465. doi:10.1097/NNA.0000000000000649	To explore the influence of new graduate nurses' psychological capital (PsyCap) and work engagement (WE) on their intention to remain in nursing.	Cross-sectional study: 156 new graduate nurses from 2 tertiary hospitals and 1 university hospital in South Korea	New graduate nursing resignations are related to negative psychological responses during the transition into professional nurses (Shin et al., 2014).

			<p>Psychological capital is the antecedent for work engagement (Bonner, 2016).</p> <p>Psychological capital and work engagement are factors that can affect intention to remain.</p>
<p>Lewis, L., Barnes, C., Roberts, L., McLeod, L., Elliott, A., & Hauck, Y. L. (2019). The practice reality of ward-based midwifery care: An exploration of aspirations and restrictions. <i>Women and Birth</i>. doi:10.1016/j.wombi.2019.08.010</p>	<p>To explore the processes and practices around ward based clinical engagement and its impact in an Australian public tertiary obstetric unit.</p>	<p>Qualitative study: Focus group which involve 40 midwives in public tertiary maternity hospital</p>	<p>Workplace imbalance is problematic and bring psychological impact to midwives.</p> <p>Workplace imbalance is the incongruence between the midwives' value and organization constraints.</p> <p>Camaraderie in workplace is perceived important by the midwives, yet is found lacking in their workplace.</p>
<p>Li, Y., Xie, W., & Huo, L. A. (2020). How Can Work Addiction Buffer the Influence of Work Intensification on Workplace Well-Being? The Mediating Role of Job Crafting. <i>International Journal of Environmental Research and Public Health</i>, 17(13), 4658-. doi:10.3390/ijerph17134658</p>	<p>To investigate the mediating role of job-crafting behaviour between work intensification and work place well-being.</p>	<p>Questionnaire survey: 356 health care professionals from 3 public tertiary hospitals in Shanghai</p>	<p>Work intensification result in low workplace well-being.</p> <p>Behaviour of seeking resources when in face with work intensification is correlated with work addiction.</p> <p>The association between job crafting behaviour and work intensification is moderated by work addiction.</p>

<p>Moloney, W., Fieldes, J., & Jacobs, S. (2020). An Integrative Review of How Healthcare Organizations Can Support Hospital Nurses to Thrive at Work. <i>International Journal of Environmental Research and Public Health</i>, 17, 8757. 10.3390/ijerph17238757</p>	<p>To synthesize international evidence on organizational factors that support hospital nurse wellbeing and to identify how the Social Embeddedness of Thriving at Work Model can support health managers to develop management approaches that enable nurses to thrive.</p>	<p>Literature review</p>	<p>A work environment which promotes professional development is vital in ensuring commitment and motivation to nurses. Nurses who work in positive work environment reported low level of turnover.</p> <p>Nurse tends to face with vast of stressor which have negative effect on their engagement level. Promoting engagement is a method for nurse retention.</p>
<p>Muhammad Awais Bhatti, Norazuwa Mat & Ariff Syah Juhari. (2018). "Effects of Job Resources Factors on Nurses Job Performance (Mediating Role of Work Engagement)". <i>International Journal of Health Care Quality Assurance</i>. https://doi.org/10.1108/IJHCQA-07-2017-0129</p>	<p>To investigate the role of work engagement as mediator in the relationship between job resources and job performance among nurses.</p>	<p>Questionnaire survey: involve 380 nurses and supervisors</p>	<p>Work engagement mediates the relationship between job resources and job performance among nurses.</p>
<p>Naughton, C., & O'Shea, Katie. L., & Hayes, N. (2019). Incentivising a career in older adult nursing: The views of student nurses. <i>International Journal of Older People Nursing</i>. doi:10.1111/opn.12256</p>	<p>To explore student nurse's perception on incentive when choosing specialty.</p>	<p>Qualitative study: Focus group interview (n=27 student nurses)</p>	<p>Four elements can incentivise student nurse when choosing future workplace: (1) leadership; (2) relational care with patient; (3) work environment and (4) education-career pathway.</p>

<p>Nguyen, D. T. N., Teo, S. T. T., Pick, D., & Jemai, M. (2018). Cynicism about Change, Work Engagement, and Job Satisfaction of Public Sector Nurses. <i>Australian Journal of Public Administration</i>, 77(2), 172–186. doi:10.1111/1467-8500.12270</p>	<p>To investigate the effect of organizational change on work environment of nurses. To investigate the relationship between organizational change with work engagement and job satisfaction.</p>	<p>Two-wave longitudinal study: 220 public sector nurses in Australia</p>	<p>Cynicism about organizational change is negatively associated with work engagement. Work engagement is significantly associated with job satisfaction. Work engagement mediates the relationship between cynicism about organizational change and job satisfaction.</p>
<p>Norikoshi, K., Kobayashi, T., Tabuchi, K., & Oriyama, S. (2020). Development of a relational workplace social capital scale for Japanese nurses. <i>Environmental Health and Preventive Medicine</i>, 25(1), 40. doi:10.1186/s12199-020-00879-0</p>	<p>To develop a scale which study the relational workplace social capital for Japanese nurse and test for its validity and reliability.</p>	<p>Test and re-test questionnaire survey: 309 nurses (1st survey) and 105 nurses (2nd survey) from four hospitals in Japan</p>	<p>Relational workplace social capital is positively correlated with work engagement.</p>
<p>Raso, R., Fitzpatrick, J. J., Masick, K. (2020). Clinical Nurses' Perceptions of Authentic Nurse Leadership and Healthy Work Environment. <i>JONA: The Journal of Nursing Administration</i>, 50(9), 489–494. doi:10.1097/nna.0000000000000921</p>	<p>To determine the relationship between clinical nurses' perception of the authentic nurse leadership of their manager and their perception of the work environment on their unit.</p>	<p>Cross-sectional study: 254 clinical nurses at national conference</p>	<p>Authentic leadership (AL) and healthy work environment (HWE) are correlated moderately. The demographic characteristic such as age and year of experience does not have significant correlation with either AL or HWE.</p>
<p>Stahl, K., Schirmer, C., & Kaise, L. (2017). Adaption and Validation of the Picker Employee Questionnaire With Hospital Midwives. <i>Journal of</i></p>	<p>To study the adaptation of Picker Employee Questionnaire in measuring work environment, work</p>	<p>Expert interview, cognitive testing and online survey</p>	<p>Increasing age of midwives improve the assessment on workload, scheduling, stress, option of</p>

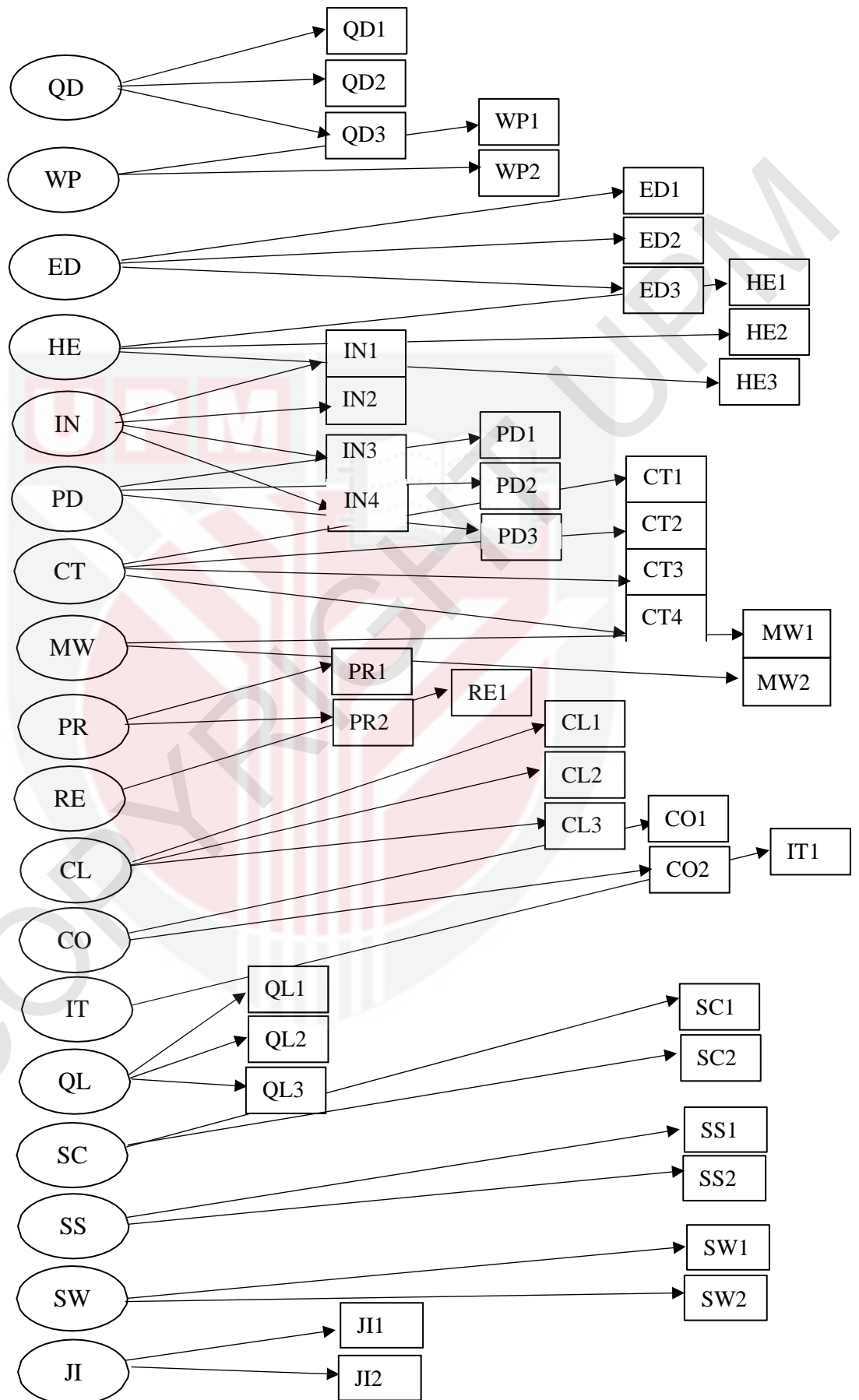
<p><i>Obstetric, Gynecologic & Neonatal Nursing.</i> doi:10.1016/j.jogn.2016.12.005</p>	<p>experience and work engagement among midwives.</p>	<p>education and training and interpersonal relationship.</p>
<p>Stone, L., Arneil, M., Coventry, L., Casey, V., Moss, S., Cavadino, A., Laing, B., & McCarthy, A. L. (2019). Benchmarking nurse outcomes in Australian Magnet® hospitals: cross-sectional survey. <i>BMC Nursing</i>, 18(1), 62–. doi:10.1186/s12912-019-0383-6</p>	<p>To benchmark educational preparation, occupational burnout, job satisfaction, intention to leave and working environment of nurses in Australian Magnet®-designated facilities To investigate the reliability of Practice-Environment Scale-Australia</p>	<p>Cross-sectional survey: 2004 nurses from three Magnet designated hospitals in Australia Work environment (WE) is strongly associated with low job dissatisfaction, low intention to leave and low level of burnout.</p>
<p>Tadić Vujčić, M. (2019). Personal Resources and Work Engagement: A Two-Wave Study on the Role of Job Resources Crafting among Nurses. <i>Drustvena istrazivanja</i>, 5–24. doi:10.5559/di.28.1.01</p>	<p>To investigate the role of job crafting behaviour in the relationship between personal resources and work engagement.</p>	<p>Two-wave longitudinal study: 107 nurses Job crafting behaviour is positively related with work engagement.</p>
<p>Tran, T. T. T., Watanabe, K., Imamura, K., Nguyen, H. T., Sasaki, N., Kuribayashi, K., Sakuraya, A., Nguyen, N. T., Bui, T. M., Nguyen, Q. T., Truong, T. Q., Nguyen, G. T. H., Minas, H., Tsustumi, A., Shimazu, A., & Kawakami, N. (2020). Reliability and validity of the Vietnamese version of the 9-item Utrecht Work Engagement Scale. <i>Journal of Occupational Health</i>, 62(1). doi:10.1002/1348-9585.12157</p>	<p>To investigate the Utrecht Work Engagement Scale in Vietnam version.</p>	<p>Questionnaire survey: 949 nurses in large tertiary hospital in Hanoi, Vietnam Researches that work on Work Engagement (WE) among nurses in low- or middle- income countries in South East Asia is few. Work engagement (WE) is negatively correlated with work demands (WD) which is different from a study conducted in Japan which show positive correlation between WE and WD (Inoue et al., 2014).</p>

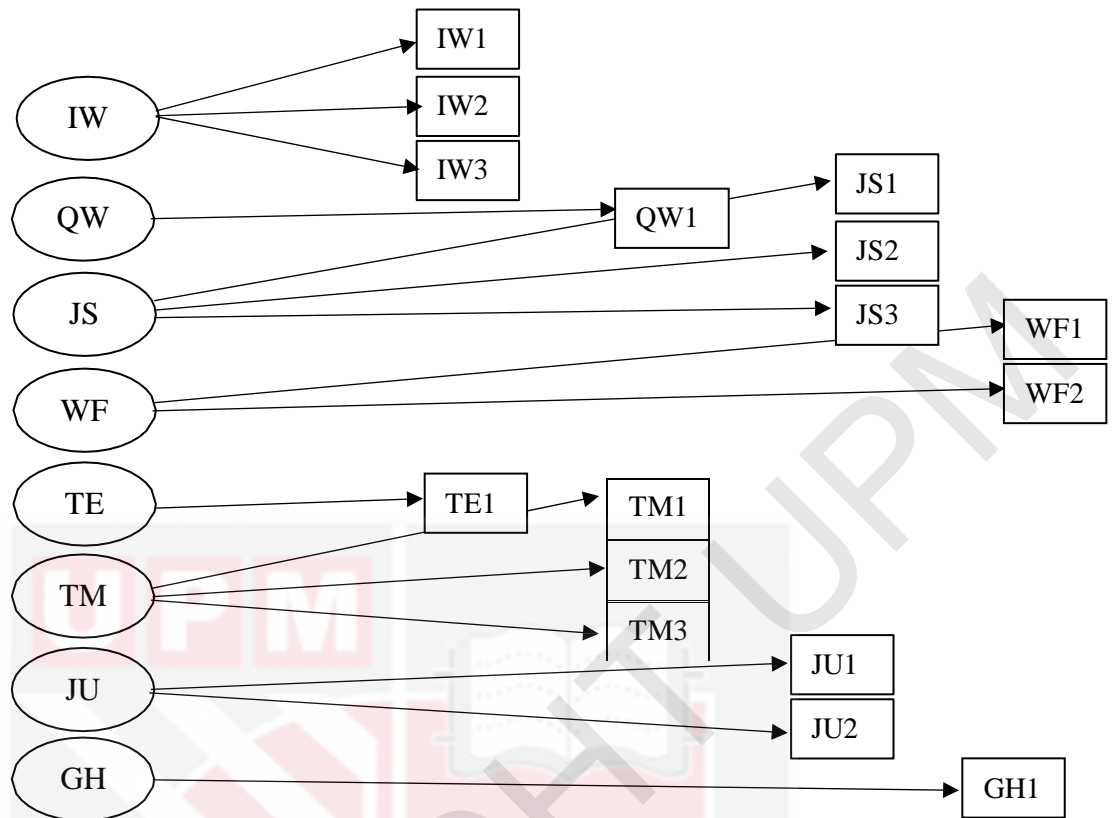
			WE is reduced with increased of working experience due to greater WD, low social support and high risk for mental disease which different from other studies in Nepal and Iran (Panthee et al., 2014; Torabinia et al., 2017)
Van Bogaert, P., Peremans, L., Van Heusden, D., Verspuy, M., Kureckova, V., Van de Cruys, Z., & Franck, E. (2017). Predictors of burnout, work engagement and nurse reported job outcomes and quality of care: a mixed method study. <i>BMC Nursing</i> , 16(1), 5–. doi:10.1186/s12912-016-0200-4	To confirm two structural equation models exploring the association between practice environment and job characteristics as predictors to burnout and engagement as well as nurse-reported job outcome and quality of care.	Mixed-method study	Work engagement acts as the mediating outcome variables in association between independent variables (practice environment and job characteristic) and dependent variables (job outcome and quality of care).
van Mol, M. M. C., Nijkamp, M. D., Bakker, J., Schaufeli, W. B., & Kompanje, E. J. O. (2017). Counterbalancing work-related stress? Work engagement among intensive care professionals. <i>Australian Critical Care</i> . doi:10.1016/j.aucc.2017.05.001	To investigate the relationship between work engagement, job demands and job resources.	Cross-sectional study	Job demands are negatively related with work engagement. Job resources are positively with work engagement.
Waltz, L. A., Munoz, L., Weber J. Holly., & Rodriguez, T. (2020). Exploring Job Satisfaction and Workplace Engagement in Millennial Nurses. <i>Journal of Nursing Management</i> . doi:10.1111/jonm.12981	To study about job satisfaction and work engagement among millennial nurses.	Qualitative study: Focus group which involve 33 nurses	Five themes that enhance job satisfaction and engagement: 1) professional relationships; 2) rewards; 3) communication; 4) professional development; and 5) workload/staffing

<p>Wan, Q. Q., Zhou, W. J., Li, Z. Y., Shang, S.M., & Yu, F. (2018). Work engagement and its predictors in registered nurses: A cross-sectional design. <i>Nursing & Health Sciences</i>. doi:10.1111/nhs.12424</p>	<p>To investigate the predictors of work engagement among nurses in China</p>	<p>Cross-sectional study: 1065 nurses in China</p>	<p>Age, job characteristics and practice environment are significant predictors for work engagement.</p>
<p>Wei, H., Sewell, K. A., Woody, G., & Rose, M. A. (2018). The state of the science of nurse work environments in the United States: A systematic review. <i>International Journal of Nursing Sciences</i>. doi:10.1016/j.ijnss.2018.04.010</p>	<p>To summarize the major foci of nursing work environment in United States and identify the strategies to improve work environment.</p>	<p>Systematic review</p>	<p>Nursing work environment is important for nurses' psychological health, job satisfaction and job retention.</p> <p>Nurse interpersonal relationship is positively related with work environment.</p> <p>Healthy work environment is positively related with patient's quality of care.</p> <p>Hospital accident is negatively related with healthy work environment.</p> <p>Authentic nurse leadership is pivotal element in promoting healthy work environment for nurses.</p>
<p>Xu, J. M., Kunaviktikul, W., Akkadechanunt, T., Nantsupawat, A., & Stark, A. T. (2019). A Contemporary Understanding of Nurses' Workplace Social Capital: A</p>	<p>To provide updated definition of social capital in current nursing workforce.</p>	<p>Literature review</p>	<p>Five attributes of social capital: Relational network, trust, shared understanding, reciprocity and social cohesion.</p>

<p>Response to the Rapid Changes in the Nursing Workforce. <i>Journal of Nursing Management</i>. doi:10.1111/jonm.12914</p>			<p>Relational network can contribute to healthy work environment, with the fortification by effective communication, active engagement and supportive leadership.</p>
<p>Ziedelis, A. (2018). Perceived Calling and Work Engagement Among Nurses. <i>Western Journal of Nursing Research</i>. doi:10.1177/0193945918767631</p>	<p>To explore the relationship of perceived calling and work engagement in nursing over and above major work environment factors.</p>	<p>Questionnaire survey: 351 nurses from different healthcare institutions</p>	<p>Work environmental factors such as (1) conflicts with physician; (2) inadequate preparation; (3) problems with peers; (4) problems with superior and (5) inadequate workload are significantly related to work engagement.</p>

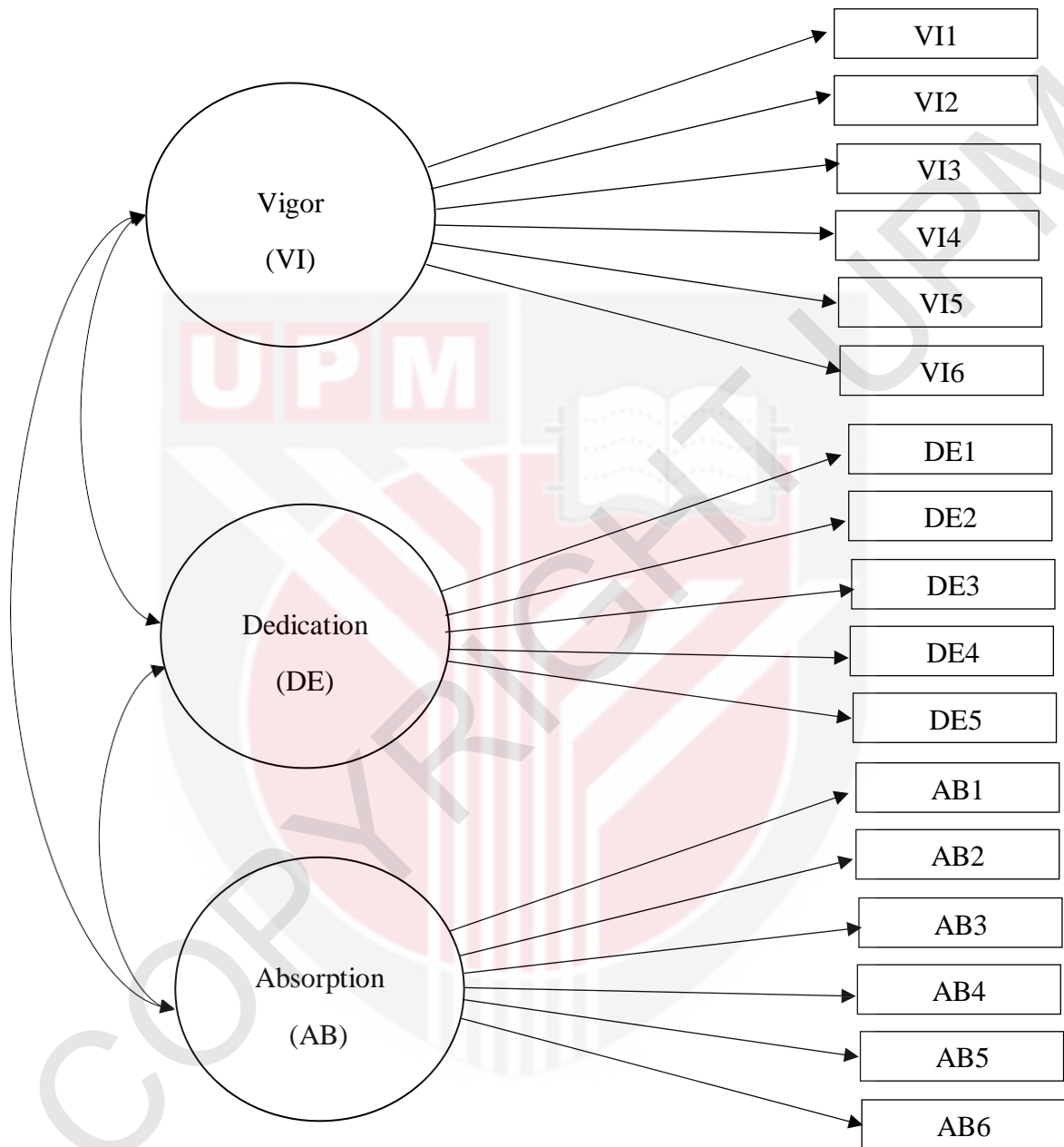
Appendix II: Structural model of COPSOQ III





Note. Structural model of confirmatory factor analysis (CFA) for COPSOQIII. QD= Quantitative Demands; WP=Work Pace; ED= Emotional Demands; HE=Demands for Hiding Emotion; IN= Influence at work; PD=Possibilities for development; CT=Control over working time; MW=Meaning of work; PR= Predictability; RE= Recognition; CL=Role Clarity; CO= Role Conflicts; IT= Illegitimate Tasks; QL=Quality of Leadership; SS=Social Support from supervisor; SC= Social Support from Colleague; SW= Sense of community at work; JI=Job Insecurity; IW=Insecurity over working condition; QW=Quality of Work; JS=Job Satisfaction; WF= Work Life Conflict; TE= Horizontal Trust; TM= Vertical Trust; JU= Organizational Justice; GH= Self-rated Health. Adapted from “Validation of the Copenhagen Psychosocial Questionnaire Version III and Establishment of Benchmarks for Psychosocial Risk Management in Sweden”, by H. Berthelsen, H. Westerlund, G. Bergström, & H. Burr, 2020, *International Journal of Environmental Research and Public Health*, 17, 3179; doi:10.3390/ijerph17093179

Appendix III: Structural model of UWES-17



Note. Structural model of confirmatory factor analysis (CFA) for UWES-17. Adopted from “Exploratory and Confirmatory Factor Analysis of the 9-Item Utrecht Work Engagement Scale in a Multi-Occupational Female Sample: A Cross-Sectional Study”, by M. Willmer, J. W. Jacobson, & M. Lindberg, 2019, *Frontiers in Psychology*, 10, 2771, doi:10.3389/fpsyg.2019.02771

Appendix IV: Reliability test for COPSOQ III

Domains	Number of items	Cronbach's alpha
Demands at work	11	0.796
Quantitative demands	3	
Work Pace	2	
Emotional Demands	3	
Demands for Hiding Emotion	3	
Work organization and job content	13	0.781
Influence at work	4	
Possibilities for Development	3	
Control over working time	4	
Meaning of work	2	
Interpersonal relations and leadership	18	0.924
Predictability	2	
Recognition	1	
Role Clarity	3	
Role Conflicts	2	
Illegitimate Tasks	1	
Quality of Leadership	3	
Social support from supervisor	2	
Social support from colleagues	2	
Sense of community at work	2	
Work individual interface	11	0.832
Job insecurity	2	
Insecurity over working conditions	3	
Quality of work	1	
Job Satisfaction	3	
Work Life Conflict	2	
Social Capital	6	0.886
Horizontal trust	1	
Vertical trust	3	
Organizational justice	2	
Health and well being	1	
Self-rated health	1	

Note. Reliability test for COPSOQ III by internal consistency with the measure of Cronbach's alpha in each domains. The internal consistency is deemed acceptable if Cronbach's alpha ≥ 0.70 . Adapted from "The Third Version of the Copenhagen Psychosocial Questionnaire", by H. Burr, H. Berthelsen, S. Moncada, M. Nubling, E. Dupret, Y. Demiral, J. Oudyk, T. S. Kristensen, C. Llorens, A. Navarro, H. J. Lincke, C. Bocerean, C. Sahan, P. Smith, A. Pohrt, International COPSOQ Network, 2019, *Safety and Health at work*, 10(4), 482-503.

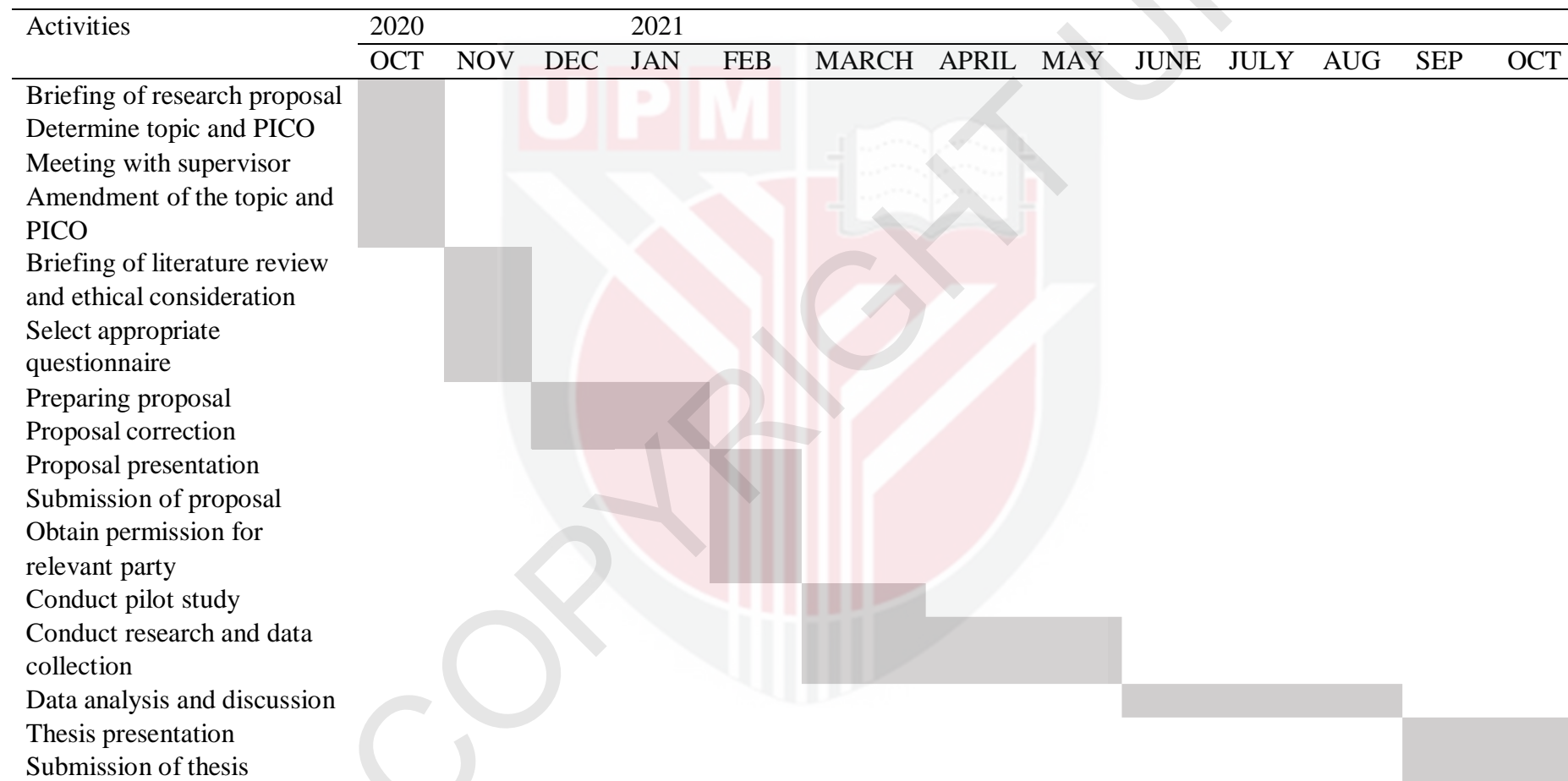
<https://doi.org/10.1016/j.shaw.2019.10.002>

Appendix V: Reliability test for UWES-17

Constructs	Number of items	Cronbach's alpha
Vigor	6	0.874
Dedication	5	0.904
Absorption	6	0.911

Note. Reliability test for UWES-17 by internal consistency with the measurement of Cronbach's alpha. The internal consistency is deemed acceptable if Cronbach's alpha ≥ 0.70 . Adapted from "The Third Version of the Copenhagen Psychosocial Questionnaire", by H. Burr, H. Berthelsen, S. Moncada, M. Nubling, E. Dupret, Y. Demiral, J. Oudyk, T. S. Kristensen, C. Llorens, A. Navarro, H. J. Lincke, C. Bocerean, C. Sahan, P. Smith, A. Pohrt, International COPSOQ Network, 2019, *Safety and Health at work*, 10(4), 482-503. <https://doi.org/10.1016/j.shaw.2019.10.002>

Appendix VI: Gantt Chart





UNIVERSITI PUTRA MALAYSIA
FACULTY OF MEDICINE AND HEALTH SCIENCES
DEPARTMENT OF NURSING AND REHABILITATION
BACHELOR OF NURSING

RESEARCH TITLE:

**THE PSYCHOSOCIAL WORK ENVIRONMENT AND WORK
ENGAGEMENT AMONG NURSES IN PUBLIC HOSPITAL, SELANGOR.**

QUESTIONNAIRE

RESEARCHER: CHONG SHIN WEN

CO/SUB SUPERVISOR: PROF. DR SOH KIM LAM

INSTRUCTION:

This study is conducted for academic purposes only. All information will be kept private and

confidential. Thank you for your cooperation in answering this questionnaire.

Section A: Socio-demographic information

Instruction:

All the answers given are to complete your background information. Please answer each question appropriately by ticking (✓) or writing down in the box or at the space provided respectively.

1. Age: _____

Male Female

2. Gender:

3. Ethnicity:

Malay Chinese India Others

4. Marital status:

Single Married Divorced Widowed Others

5. Highest education qualification:

Doctor of Philosophy (PhD)
 Master Degree
 Bachelor Degree
 Post Basic
 Diploma
 Skill Certificate

6. Current working department:

<input type="checkbox"/>	Medical (Ward 7B, 7C, 7D, 8B)	<input type="checkbox"/>	Cardiothoracic (Ward 6F, CHDW, CICU)
<input type="checkbox"/>	Surgical (Ward 6B, 6C)	<input type="checkbox"/>	Paediatric (Ward 5A, 5B, 6D, NICU, PCICU)
<input type="checkbox"/>	Rehabilitation (Ward 6G)	<input type="checkbox"/>	Ophthalmology/ Otorhinolaryngology (Ward 6A)
<input type="checkbox"/>	Orthopaedic (Ward 7E, 7F)	<input type="checkbox"/>	General Intensive Care (GICU1, GICU2)
<input type="checkbox"/>	Cardiology (Ward 6E, CHDW, CCU)	<input type="checkbox"/>	Obstetric and Gynaecology (Ward 5E, 5F, 6B)

7. Years of experience in current department: _____ months/years



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Section B: COPSOQ III

Instruction:

This assessment asks how you perceive about your psychosocial work environment. Please answer all the questions. If you are unsure about which response to give to a question, please choose the one that appears most appropriate.

Please read each question, assess your feelings, and choose the number on the scale for each question that gives the best answer for you.

		Never (1)	Seldom (2)	Sometimes (3)	Often (4)	Always (5)
1.	Is your workload unevenly distributed so it piles up?					
2.	How often do you not have time to complete all your work tasks?					
3.	Do you get behind with your work?					
4.	Do you have to work very fast?					
5.	Do you have to deal with other people's personal problems as part of your work?					
6.	Does your work put you in emotionally					

	disturbing situations?					
7.	Does your work require that you do not state your opinion?					
8.	Do you have a large degree of influence on the decisions concerning your work?					
9.	Can you influence the amount of work assigned to you?					
10.	Do you have any influence on what you do at work?					
11.	Do you have any influence on HOW you do your work?					
12.	Can you decide when to take a break?					
13.	Can you take holidays more or less when you wish?					
14.	Can you leave your work to have a chat with a colleague?					

15.	If you have some private business is it possible for you to leave your place of work for half an hour without special permission?					
16.	How often is your immediate superior willing to listen to your problems at work, if needed?					
17.	How often do you get help and support from your immediate superior, if needed?					
18.	How often do you get help and support from your colleagues, if needed?					
19.	How often are your colleagues willing to listen to your problems at work, if needed?					
20.	Is there a good atmosphere between you					

	and your colleagues?					
21.	Do you feel part of a community at your place of work?					
		To a very small extent (1)	To a small extent (2)	Somewhat (3)	To a large extent (4)	To a very large extent (5)
22.	Do you work at a high pace throughout the day?					
23.	Is your work emotionally demanding?					
24.	Does your work require that you hide your feelings?					
25.	Are you required to be kind and open towards everyone – regardless of how they behave towards					
26.	Do you have the possibility of learning new things through your work?					
27.	Can you use your skills or					

	expertise in your work?					
28.	Does your work give you the opportunity to develop your skills?					
29.	Is your work meaningful?					
30.	Do you feel that the work you do is important?					
31.	At your place of work, are you informed well in advance concerning for example important decisions, changes or plans for the future?					
32.	Do you receive all the information you need in order to do your work well?					
33.	Is your work recognized and appreciated by the management?					
34.	Does your work have clear objectives?					

35.	Do you know exactly which areas are your responsibility?					
36.	Do you know exactly what is expected of you at work?					
37.	Are contradictory demands placed on you at work?					
38.	Do you sometimes have to do things which ought to have been done in a different way?					
39.	Do you sometimes have to do things which seem to be unnecessary?					
40.	To what extent would you say that your immediate superior makes sure that the members of staff have good development opportunities?					
41.	To what extent would you say that your immediate superior is good					

	at work planning?					
42.	To what extent would you say that your immediate superior is good at solving conflicts?					
43.	Are you worried about becoming unemployed?					
44.	Are you worried about it being difficult for you to find another job if you became unemployed?					
45.	Are you worried about being transferred to another job against your will?					
46.	Are you worried about the timetable being changed (shift, weekdays, time to enter and leave ...) against your will?					
47.	Are you worried about a decrease in					

	your salary (reduction, variable pay being introduced ...)?					
48.	Are you satisfied with the quality of the work performed at your workplace?					
49.	Do you feel that your work drains so much of your energy that it has a negative effect on your private life?					
50.	Do you feel that your work takes so much of your time that it has a negative effect on your private life?					
51.	Do the employees in general trust each other?					
52.	Does the management trust the employees to do their work well?					
53.	Can the employees trust the information					

	that comes from the management?					
54.	Are the employees able to express their views and feelings?					
55.	Are conflicts resolved in a fair way?					
56.	Is the work distributed fairly?					

		Very unsatisfied (1)	Unsatisfied (2)	Neither/Nor (3)	Satisfied (4)	Very satisfied (5)
57.	Regarding your work in general. How pleased are you with your work prospects?					
58.	Regarding your work in general. How pleased are you with your job as a whole, everything taken into consideration?					
59.	Regarding your work in general. How					

	pleased are you with your salary?					
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		Poor (1)	Fair (2)	Good (3)	Very Good (4)	Excellence (5)
60.	In general, would you say your health is:					



Section C: UWES-17

The following 17 statements are about how you feel at work. Please read each statement carefully and decide if you ever feel this way about your job. If you have never had this feeling, choose the '0' (zero) in the space after the statement. If you have had this feeling, indicate how often you feel it by choosing the number (from 1 to 6) that best describes how frequently you feel that way.

	0	1	2	3	4	5	6
Scale	Never	Almost never A few times a year or less	Rarely Once a month or less	Sometimes A few times a month	Often Once a week	Very often A few times a week	Always Every day

No.	Statement	Scale							
1.	At my work, I feel bursting with energy.	0	1	2	3	4	5	6	
2.	I find the work that I do full of meaning and purpose.	0	1	2	3	4	5	6	
3.	Time flies when I'm working.	0	1	2	3	4	5	6	
4.	At my job, I feel strong and vigorous.	0	1	2	3	4	5	6	
5.	I am enthusiastic about my job.	0	1	2	3	4	5	6	
6.	When I am working, I forget everything else around me.	0	1	2	3	4	5	6	
7.	My job inspires me.	0	1	2	3	4	5	6	
8.	When I get up in the morning, I feel like going to work.	0	1	2	3	4	5	6	
9.	I feel happy when I am working intensely.	0	1	2	3	4	5	6	

10.	I am proud on the work that I do.	0	1	2	3	4	5	6
11.	I am immersed in my work.	0	1	2	3	4	5	6
12.	I can continue working for very long periods at a time.	0	1	2	3	4	5	6
13.	To me, my job is challenging.	0	1	2	3	4	5	6
14.	I get carried away when I'm working.	0	1	2	3	4	5	6
15.	At my job, I am very resilient, mentally.	0	1	2	3	4	5	6
16.	It is difficult to detach myself from my job.	0	1	2	3	4	5	6
17.	At my work I always persevere, even when things do not go well.	0	1	2	3	4	5	6

THE END

Thanks for your cooperation

Appendix VIII: Permission to use COPSOQ-III

chgate.net/messages/55703842

Archive

Saya, Chong Shin Wen, pelajar Tahun Akhir Bachelo Kejururawatan, UPM sedang mengusahakan projek ilmiah sebelum graduasi.

2. Tujuan surat ini adalah untuk mendapatkan kebenaran daripada Dr. Ahmad Nizam Shahrul Nizam untuk instrumen Malaysia-validated COPSOQ .

3. Untuk makluman Dr, tajuk projek ilmiah saya adalah The psychosocial work environment and work engagement among nurses in public hospital, Selangor: A cross-sectional study. Projek ini akan dipantau oleh Profesor Dr Soh Kim Lam.

Dengan ini, saya juga melampirkan proposal saya sebagai rujukan Dr Ahmad Nizam Shahrul Isha.

Akhir sekali, saya ingin mengucapkan ribuan terima kasih atas pertolongan daripada Dr Ahmad Nizam Shahrul Isha untuk menjayakan projek ilmiah saya.

Sekian terima kasih.

 Study Protocol.docx

**Ahmad Nizam Shahrul Isha** to you

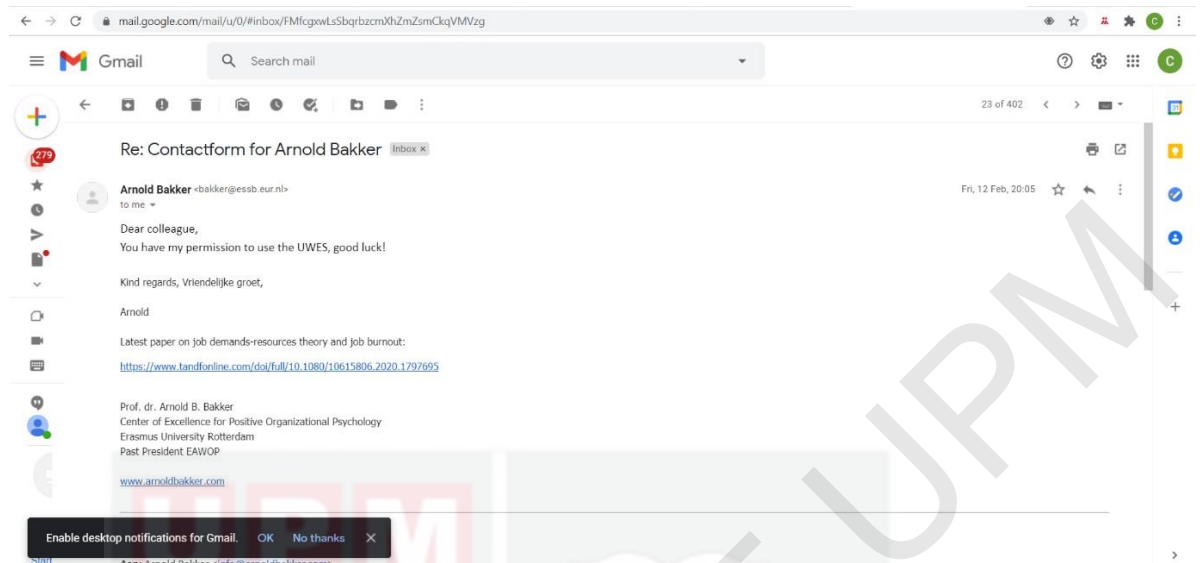
10 days ago

Hi, You are free to cite my work with a proper acknowledgement and referencing, I am full support of your study. Any further communication pls contact me by email shahrul.nizam@utp.edu.my

**Shin Wen Chong**

6 days ago

Appendix IX: Permission to use UWES-17



- s.k. Ketua Jabatan Kejururawatan, UPM
Ketua Jabatan Anaesthesia dan Rawatan Rapi, Hospital Serdang
Ketua Jabatan Anaestologi Kardiorasik & Perfusi, Hospital Serdang
Ketua Jabatan Bedah Mulut dan Maksilofasial, Hospital Serdang
Ketua Jabatan Kardiologi, Hospital Serdang
Ketua Jabatan Kardiorasik, Hospital Serdang
Ketua Jabatan Nefrologi, Hospital Serdang
Ketua Jabatan Obstetrik & Ginekologi, Hospital Serdang
Ketua Jabatan Oftalmologi, Hospital Serdang
Ketua Jabatan Ortopedik, Hospital Serdang
Ketua Jabatan Otorinolaringologi, Hospital Serdang
Ketua Jabatan Pediatrik, Hospital Serdang
Ketua Jabatan Pembedahan Am, Hospital Serdang
Ketua Jabatan Perubatan Am, Hospital Serdang
Ketua Jabatan Perubatan Rehabilitasi, Hospital Serdang

Surat Kebenaran MREC

Protokol (full protocol)

Ringkasan Projek Penyelidikan**Tajuk Penyelidikan:**

The psychosocial work environment and work engagement among nurses in a public hospital, Selangor: A Cross-Sectional Study

Nama dan Jabatan Ketua Penyelidik:

Chong Shin Wen, Pelajar Bachelo Kejururawatan, Jabatan Kejururawatan, Fakulti Perubatan dan Sains Kesihatan, Universiti Putra Malaysia

Nombor pendaftaran NMRR: NMRR-21-67-57890

Rujukan kelulusan MREC: KKM/NIHSEC/ P21-224 (4)

Tarikh mula penyelidikan: 1 Mac 2021

Tarikh tamat penyelidikan: 1 Jun 2021

Objektif penyelidikan:

Tujuan penyelidikan ini dilakukan adalah mengetahui persekitaran psikosocial kerja dan penglibatan kerja dalam kalangan jururawat di HospitalSerdang, Selangor.

Ringkasan metodologi penyelidikan:

Kajian ini adalah kajian berbentuk kajian rentas silang. Oleh itu, setiap peserta akan menerima satu set soal selidik melalui Google Form yang terdiri daripada tiga bahagian iaitu bahagian maklumat latar belakang, bahagian persepsi tentang persekitaran psikosocial kerja dan bahagian penilaian tentang penglibatan kerja sendiri. Semua peserta dikehendaki untuk menjawab semua soalan yang terdapat dalam setiap bahagian. Ia akan mengambil masa selama 10 hingga 15 minit. Penyertaan peserta dalam kaji selidik ini adalah scara sukarela dan mereka berhak untuk menarik diri daripada kajian ini pada bila-bila masa.

LAMPIRAN 3

Jabatan	Fasiliti
Jabatan Anaesthesia dan Rawatan Rapi	Unit Rawatan Rapi (ICU), Dewan Bedah, Unit Rawatan Harian
Jabatan Anaestologi Kardiotorasik & Perfusi	Unit Rawatan Intensif Kardiotorasik (CICU)
Jabatan Bedah Mulut dan Maksilofasial	Wad 6A, Klinik Pembedahan Mulut
Jabatan Kardiologi	Wad 6E, Klinik Kardiologi, Unit Rawatan Jantung (CCU), Cardiology High Dependency Ward (CHDW)
Jabatan Kardiotorasik	Wad 6F, Klinik Kardiotorasik
Jabatan Nefrologi	Wad 7A, Klinik Nefrologi & Urologi, Unit Hemodialisis
Jabatan Obstetrik & Ginekologi	Wad 5E, Wad 5F, Dewan Bersalin, Klinik Obstetrik & Ginekologi
Jabatan Oftalmologi	Wad 6A, Klinik Oftalmologi
Jabatan Ortopedik	Wad 7E, Wad 7F, Klinik Ortopedik
Jabatan Otorinolaringologi	Wad 6A, Klinik Otorinolaringologi
Jabatan Pediatrik	Wad 5A, Wad 5B, Wad 6D, Unit Rawatan Rapi Neonatal (NICU), Unit Rawatan Rapi Kardiologi pediatrik (PCICU)
Jabatan Pembedahan Am	Wad 6B, Wad 6C, Klinik Pembedahan
Jabatan Perubatan Am	Wad 7B, Wad 7C, Wad 7D, Wad 8B, Wad 8C, Klinik Perubatan, Klinik Dermatologi
Jabatan Perubatan Rehabilitasi	Jabatan Rehabilitasi

Appendix XII: Ethical approval from MREC



JAWATANKUASA ETIKA & PENYELIDIKAN PERUBATAN
(Medical Research & Ethics Committee)
KEMENTERIAN KESIHATAN MALAYSIA
d/a Kompleks Institut Kesihatan Negara
Blok A, No 1, Jalan Setia Murni U13/52,
Seksyen U13, Bandar Setia Alam,
40170 Shah Alam, Selangor.



Tel: 03-3362 8888/8205

Ref : KKM/NIHSEC/ P21-224 (4)
Date: 25-Feb-2021

Miss CHONG SHIN WEN
UNIVERSITY PUTRA MALAYSIA (UPM)

Dear Sir / Mdm,

ETHICS INITIAL APPROVAL: NMRR-21-67-57890 (IIR)

The psychosocial work environment and work engagement among nurses in public hospital, Selangor: A Cross-Sectional Study

This letter is made in reference to the above matter.

2. The Medical Research and Ethics Committee (MREC), Ministry of Health Malaysia (MOH) has provided ethical approval for this study. Please take note that all records and data are to be kept strictly **CONFIDENTIAL** and can only be used for the purpose of this study. All precautions are to be taken to maintain data confidentiality. Permission from the District Health Officer / Hospital Administrator / Hospital Director and all relevant heads of departments / units where the study will be carried out must be obtained prior to the study. You are required to follow and comply with their decision and all other relevant regulations, including the Access to Biological and Benefit Sharing Act 2017.

3. The investigators and study sites involved in this study are:

HOSPITAL SERDANG

Associate Professor Dr Soh Kim Lam
Miss CHONG SHIN WEN (Penyelidik Utama)

4. The following study documents have been received and reviewed with reference to the above study:

Documents received and reviewed with reference to the above study:

1. Study Protocol_Version 4, dated 03-Feb-2021
2. Information Sheet & Implied Consent_English_Version 2, dated 03-Feb-2021
3. Information Sheet & Implied Consent_Malay_Version 2, dated 03-Feb-2021
4. Questionnaire_Version 2, dated 03-Feb-2021
5. Investigator's documents : Declaration of Conflict of Interest (COI), IA-HOD-IA, and CV:
 - a) Associate Professor Dr Soh Kim Lam
 - b) Miss CHONG SHIN WEN (Penyelidik Utama)

5. Please note that ethical approval is valid until 24-Feb-2022. The following are to be reported upon receiving ethical approval. Required forms can be obtained from the National Medical Research Register (NMRR) website.

- i. **Continuing Review Form** has to be submitted to MREC within 2 month (60 days) prior to the expiry of ethical approval.
- ii. **Study Final Report** upon study completion to the MREC.
- iii. Ethical approval is required in the case of **amendments / changes to the study documents/ study sites/ study team**. MREC reserves the right to withdraw ethical approval if changes to study documents are not completely declared.