# WORK-RELATED STRESS AND TURNOVER INTENTION DURING THE COVID-19 PANDEMIC AMONG NURSES IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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**by**

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## TABLE OF CONTENTS

# LIST OF TABLES

# LIST OF FIGURES

# TEKANAN KERJA DAN NIAT PUSING GANTI SEMASA COVID-19 DALAM KALANGAN JURURAWAT HOSPITAL USM

## ABSTRAK

Wabak COVID-19 telah memberi kesan ketara kepada sistem penjagaan kesihatan. Hal ini meletakkan sistem kesihatan dalam tekanan yang luar biasa. Jururawat menunjukkan telah mengalami tekanan susulan wabak COVID-19, mencadangkan trauma dan dianggarkan niat pusing ganti yang besar dalam kalangan jururawat di seluruh dunia. Oleh itu, kajian ini bertujuan untuk menilai tahap tekanan berkaitan kerja dan niat pusing ganti dalam kalangan jururawat di Hospital USM. Seramai 365 jururawat telah mengambil bahagian dalam kajian ini dengan menjawab soal selidik tadbir sendiri melalui Borang Google yang dihantar kepada mereka. Data yang dikumpul dianalisis menggunakan SPSS versi 26.0. Ciri sosiodemografi, prevalens tekanan berkaitan kerja dan niat pusing ganti dibentangkan dalam statistik deskriptif. Ujian korelasi Pearson digunakan untuk menganalisis hubungan antara tekanan berkaitan kerja dan niat pusing ganti. Untuk menganalisis perkaitan antara ciri sosiodemografi dengan tekanan berkaitan kerja dan niat pusing ganti, ujian Chi-square dan ujian tepat Fisher telah digunakan dengan tahap signifikan $p<0.05$. Majoriti jururawat mengalami tekanan berkaitan kerja tahap rendah ke sederhana; namun, mereka tidak mempunyai niat pusing ganti yang tinggi. Kajian ini menunjukkan korelasi yang signifikan dan positif antara tekanan berkaitan kerja dengan niat pusing ganti. Namun begitu, dapatan kajian tidak menunjukkan perkaitan yang signifikan antara ciri-ciri sosiodemografi dengan tekanan berkaitan kerja dan niat pusing ganti dalam kalangan jururawat di Hospital USM semasa pandemik COVID-19. Penemuan kajian ini dapat memberikan kesedaran kepada kakitangan penjagaan kesihatan mengenai tekanan berkaitan kerja dan niat pusing ganti. Justeru itu, cadangan atau tindakan proaktif perlu dilaksanakan supaya meningkatkan

kepuasan jururawat, dan menangani isu-isu berkaitan yang menyelubungi persekitaran amalan kejururawatan untuk meningkatkan kualiti penjagaan yang disampaikan dan keselamatan pesakit, selain mengekalkan jururawat berkemahiran tinggi.

# WORK-RELATED STRESS AND TURNOVER INTENTION DURING COVID-19 AMONG NURSES IN HOSPITAL USM.

## ABSTRACT

The outbreak of the COVID-19 had a significant impact on the healthcare system. This puts the healthcare system under tremendous pressure. Nurses are reported to be under stress following the Covid-19 outbreak, and estimated a mass turnover intention among nurses globally due to the pandemic. Therefore, this study aims to assess the level of work-related stress and turnover intention among nurses in Hospital USM. A total of 365 nurses participated in this study by answering self-administered questionnaire through Google Forms sent to them. The collected data were analyzed by SPSS version 26.0. Sociodemographic characteristics, the prevalence of work-related stress and turnover intention was presented in descriptive statistics. The Pearson correlation test was used to analyze the relationship between work-related stress and turnover intention. To analyze the association between sociodemographic characteristics with work-related stress and turnover intention, the Chi-square test and Fisher exact test were utilized with a significance level of $p<0.05$. The majority of the nurses experience little to moderate levels of work-related stress; however, they do not have the intention to leave. This study showed a significant and positive correlation between work-related stress and turnover intention. Nevertheless, there were no significant associations between socio-demographic characteristics with work-related stress and turnover intention among nurses in Hospital USM during the COVID-19 pandemic. The findings of the study alert healthcare personnel regarding the issues and consequences related to work-related stress and turnover intention. Therefore, appropriate proactive strategies or recommendations should be done to improve nurses' satisfaction and address issues related that surround

the nursing practice environment to improve the quality of care delivered and patient safety, besides retaining highly skilled nurses.

# CHAPTER 1

# INTRODUCTION

## 1.1 Introduction

This dissertation aimed to assess work-related stress and turnover intention among nurses during COVID -19 in Hospital Universiti Sains Malaysia (Hospital USM). First, this chapter discusses the background of the study, followed by the problem statement, research questions and objectives, the hypothesis of the study, the significance of the study and lastly, the operational definition of key terms used in the study.

## 1.2 Background of the Study

The Coronavirus disease 2019 (COVID-19) was first reported in late 2019 in Wuhan, Hubei province, China and later spread globally. In March 2020, the highest prevalence of COVID-19 was recorded in Italy, the United States, Spain, France, Iran and Germany (Rauf et al., 2020). This outbreak was declared a pandemic, a health emergency by the World Health Organization (WHO) (Liu et al., 2020).

The disease's breakout has significantly impacted the healthcare system, placing it under tremendous strain and stretching it beyond its capability. Job demand, long and insecure working hours, team instability, tight safety requirements, and concern about the future are among healthcare professionals' burdens worldwide. Previous research has linked these burdens to an increase in depression, stress, and anxiety prevalence. According to research, nurses were shown to have suffered the impact of the pandemic more than medical doctors and healthcare workers in terms of psychological symptoms (Kunz et al., 2021).

Stress played a crucial role in turnover intention. Prior studies presented an array

of factors that contributed to stress among nurses. This includes burnout due to physical and psychological load, psychological violence and aggression from patients and relatives, contact with patient's blood and bodily fluids, infectious disease agents, work environment pollution, high responsibilities, and stressful and noisy working environment. Other stressors include insufficient support from colleagues, authorities and senior nurses, lack of professional relations between nurses and physicians as well as among nurses themselves, insufficient preparation for work and short working experience (Dagget et al., 2016; Riklikienė et al., 2015; Sasso et al., 2019). In addition, in the COVID-19 pandemic, work-related stress has been an indicator of mental illness as it can lead to anxiety and depression (Said & El-Shafei, 2021).

Nursing is a critical part of healthcare and makes up the largest section of the health profession. However, the nursing shortage has been a global issue and is a major symptom of the high turnover rate in the healthcare industry. The prevalence of nursing shortage was highest in South East Asia and Africa (WHO et al., 2020). Turnover can be voluntary, by own request, or involuntary initiated by the company (Micheal et al., 2010). The turnover intention was acknowledged as an indicator of actual turnover as it is expected to have an increased turnover rate when the turnover intention also increases (Laureen J et al., 2012; Mervi et al., 2010). The WHO indicated a global shortage of 5.9 million nurses, with 17% expected to retire in the next ten years. In order to achieve the Sustainable Development Goal 3 on health and wellness, an additional 9 million nurses are required by 2030.

## 1.3 Problem Statement

Various studies showed an adverse impact since the start of the COVID-19 pandemic on the nursing workforce. Reports from the National Nurses Associations (NNAs) indicated nurses had suffered emotionally and physically from months of caring for COVID-19 patients. Up to 90% of the nurses reported that high work demands, inadequate resourcing, burnout and stress had been the push factors for nurses' intention to leave (ICN, 2021).

The International Council of Nurses (ICN) suggested mass traumatization in the nursing workforce and estimated a mass turnover intention among nurses globally due to the pandemic (ICN, 2020). This posed a threat to the healthcare system. Shortage of nurses, high turnover rates, and poor retention of nurses require healthcare organizations to spend a high cost on replacing turnover nurses, including recruitment, selection of candidates, orientation, and training. A study revealed the post-hire-process (67.9%) and the lower productivity of the newly hired professionals (63.6%) were the greatest burdens in replacing skilled nurses (De Oliveira Ruiz et al., 2016).

Besides, the nursing shortage was also linked to a lower nurses-to-patient ratio which often being the predicament of errors, burnout, increased workplace injury and illness rate and lower dissatisfaction among nurses (Haddad et al., 2020; Leigh et al., 2015; Qureshi et al., 2019) whereas patients facing lower quality of care and safety (Mu'taman Jarrar et al., 2015)

However, little research is available assessing work-related stress and turnover intention among Malaysian nurses, especially during the COVID-19 pandemic. By addressing the factors related to turnover intention, actions can be taken to retain and strengthen the nursing workforce. Evidence shows that a nursing staff shortage could lead to poor healthcare service, quality of care and patient safety (Jarrar et al., 2018).

## 1.4 Research Questions

The research questions for this study were as follows:

i. What were the prevalence of work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM?
ii. What was the correlation between work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM?
iii. Were there any associations between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and work-related stress during the COVID-19 pandemic among nurses in Hospital USM?
iv. Were there any associations between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and turnover intention during the COVID-19 pandemic among nurses in Hospital USM?

## 1.5 Research Objectives

Research objectives indicate more details about the specific research topic or issues the project plans to investigate, hence paving the way in deciding the research project's design (Thomas & Hodges, 2010).

### 1.5.1 General Objective

The general objective of this study was to determine the work-related stress and turnover intention during COVID-19 among nurses in Hospital USM.

### 1.5.2 Specific Objectives

The specific objectives for this study were as follows:

i. To determine the prevalence of work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

ii. To identify the correlation between work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

iii. To identify the associations between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and work-related stress during the COVID-19 pandemic among nurses in Hospital USM.

iv. To identify the associations between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

## 1.6 Research Hypotheses

**Hypothesis 1** **($H_0$):** There was no association between work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

**($H_1$):** There was an association between work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

**Hypothesis 2** **($H_0$):** There was no correlation between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and work-related stress during the COVID-19 pandemic among nurses in Hospital USM.

**($H_2$):** There was a correlation between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and work-related stress during the COVID-19 pandemic among nurses in Hospital USM.

**Hypothesis 3** **($H_0$):** There was no association between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

**($H_3$)** There was an association between socio-demographic characteristics (age, marital status, level of education, years of working experience, area of work, involvement with COVID patient's care) and turnover intention during the COVID-19 pandemic among nurses in Hospital USM.

## 1.7 Significance of the Study

The findings from this study addressed the level of work-related stress, turnover intention and socio-demographic factors associated with work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM. This could help intervene recommendations, strategies, and even policies in reducing work-related stress and eventually reduce the turnover intention among nurses, improving quality of care and patient safety.

## 1.8 Conceptual and Operational Definitions

There operational terms used in this research proposal are shown below：

| | |
|---|---|
| Work-related stress | Harmful physical and emotional responses occur when the work demands and pressure that do not match worker's knowledge, capabilities, resources, or needs challenge their ability to cope (Jick & Payne, 2014; WHO, 2020). This study will assess work-related stress among nurses using a self-administered questionnaire adopted from Harris, 1989. |
| Turnover intention | The likelihood of an employee leaving the current job they are doing (Ngamkroeckjoti et al., 2012). This study will assess turnover intention among nurses using a self-adapted questionnaire adopted from Bothma & Roodt, 2013. |
| Nurses | A nurse is a group of people whose job is to care for ill or injured people, especially in a hospital (Cambridge Dictionary, 2018). In this study, nurses are registered nurses with grades U29 and U32 that provide holistic nursing care for patients in the Hospital. |

# CHAPTER 2

# LITERATURE REVIEW

## 2.0 Introduction

This chapter provided a general review of the literature about COVID-19 on the healthcare system, work-related stress, turnover intention, and the association between socio-demographic characteristics and turnover intention. The final section of this chapter described the theoretical and conceptual framework used in this study.

## 2.1 COVID-19 in Healthcare System

COVID-19 was first discovered in Wuhan, China, in December 2019 and has spread globally. As a result, COVID-19 was declared a pandemic by the World Health Organization (WHO) in March 2020 (Liu et al., 2020). As of 5 November 2021, a total of 248,467,363 confirmed COVID-19 cases, including 5,027,183 deaths, had been reported to WHO, where the United States of America had the highest number of confirmed (45,968,940) and death (744,398) cases, followed by India (34,333,754 confirmed, 459873 deaths); and Brazil (21,835,785 confirmed, 608235 deaths) (WHO, 2021).

In Malaysia, the first three COVID-19 cases were imported, confirmed on 25 January 2020, when 3 Chinese nationals had close contact with positive infected individuals in Singapore (Borneo Post, 2020). Since then, the Malaysia Ministry of Health (MoH) has developed guidelines for handling COVID-19 cases, including the definition, management of suspected, probable, and confirmed COVID-19 cases and a list of hospitals and screening facilities that handles COVID-19 patients. The COVID-19 Management Guidelines in Malaysia No.5/2020 contain 52 annexes that have been

regularly amended and updated (MoH Malaysia, 2021). In addition, free COVID-19 vaccines were provided to all Malaysians to combat the pandemic under the National COVID-19 Immunization Programme implemented in February 2021 (Jawatan Kuasa Khas Jaminan Akses Bekalan Vaksin COVID-19, 2021). As of 7 November 2021, 2,506,309 COVID-19 cases were confirmed, with 29,291 deaths recorded.

The Malaysia Ministry of Health categorized hospitals into Fully COVID Hospitals (Full C19), Hybrid COVID Hospitals, and Non-COVID Hospitals. As of 7 November 2021, there were eight Full C19 hospitals and 92 hybrid hospitals managing COVID-19 cases in Malaysia. Hospital Universiti Sains Malaysia is now categorized as a hybrid hospital, managing COVID and non-COVID cases. Table 2.1 shows brief summarization of each classification of the hospital (Ministry of Health Malaysia, 2021).

**Table 2.1** Categorization of hospitals during COVID-19

| Categorization of Hospital | Description |
|---|---|
| Fully COVID Hospital<br>(Full C19) | - A hospital designated for managing COVID-19 patients exclusively, except for emergencies.<br>- Elective surgical cases, regular procedures and operations and outpatient treatments, including specialist clinics that are not fully engaged in treating COVID patients in Full C19 hospitals, will be postponed or performed in non-COVID hospitals. |
| Hybrid COVID Hospital | - A hospital is designated for managing COVID-19 patients while the hospital provides specialist services in treating and managing patients with non-COVID cases.<br>- Hospitals set up isolation wards or buildings designated to manage COVID cases. |
| Non-COVID Hospital | - Hospitals that do not involve in screening or treating COVID-19 cases. |

| | |
|---|---|
| | - Hospitals receive non-COVID cases from Hospital Fully COVID and Hospital Hybrid that were halted temporarily. |

## 2.2 Work-related Stress

Work-related stress is the negative physical and emotional responses when the job demands do not match the capabilities, resources, or needs. Work-related stress can result in ill health and even harm (Jick & Payne, 2014). The COVID pandemic had significantly impacted employers and employees in many sectors forcing them to adapt to changes in times of crisis. For instance, schools resumed using a variety of in-person, hybrid, and remote learning approaches. Teachers across the globe were forced to adapt to unusual circumstances, teaching in unprecedented ways, and employing synchronous and asynchronous instruction. At the same time, attempt to form bonds with students, families and co-workers. As a result, stress and burnout among teachers had been significant throughout these atypical periods. (Zamarro et al., 2021)

Frontline healthcare workers (HCW) played a crucial role in providing care to the infected persons during the pandemic. However, evidence reported that overall stress levels in HCWs increased during the pandemic, with more than 40% of HCWs suffering from moderate-to-extreme stress levels (Dosil et al., 2020). According to research conducted in India, understaffing, working with limited resources, long working hours and frequent changes of duties, and working with an unfamiliar team and environment contribute to high-stress levels during the pandemic (Gupta & Sahoo, 2020). Working in such unprecedented situations, often beyond their capabilities and at risk of getting infected, put HCWs at increased risk for mental health issues. Despite this, the mental health issues of front-liners and other HCWs were often disregarded.

Since the start of the pandemic, nurses have been in a highly stressful working environment at the same time, risking their lives in carrying out their duties under the fear of being infected or unknowingly infecting others (Pappa et al., 2020). During the COVID-19 pandemic, nurses continue to be on the front lines of patient care in hospitals and actively involved in community assessment and monitoring. In addition, nurses are prepared for potential COVID-19 outbreaks that might overload systems, ensure sufficient supply and usage of protective equipment, and provide screening information, confinement rules, and triage protocols based on the latest guidelines (Fawaz et al., 2020).

According to studies conducted worldwide, burnout and exhaustion among nurses were expected to worsen. Around half of the Chinese nurses said they were experiencing moderate to severe work burnout, emotional tiredness and depersonalization (Hu et al., 2020). According to a poll by Mental Health America, 93% of nurses were stressed, 86% were anxious, and around 75% were fatigued, burnt out, and overwhelmed (Mental Health America, 2020). Since the epidemic, 25% of nurses in Brazil, 28% in Australia, and 20% in Africa had experienced depressive symptoms. COVID-19's long-term effects, according to ICN, might include post-traumatic stress disease. This concluded that nurses who fought against COVID-19 were generally stressed. (Mo et al., 2020).

## 2.3 Turnover Intention

A study shows communication in the workplace, environment, responsibility, salary, and benefits are factors that cause an employee to leave an organization voluntarily (Qureshi et al., 2013). During the COVID pandemic, tourism and hospitality-related business were the most impacted sectors. Due to the steps taken to lessen the spread of the pandemic, airline company such as Cathay Pacific, Jetstar, Singapore Airlines, and Malaysia Airlines sent their employees on unpaid leave (Foo et al., 2020). The impact of

COVID-19 led to emotional exhaustion and organizational distrust especially having unpaid leave during a crisis, which can lead to employee turnover (Abdalla et al., 2021; Elshaer & Saad, 2016).

The increased stress and mental health difficulties among healthcare professionals, notably during the COVID-19 pandemic, were consistent with the predictors of turnover intention (Nashwan et al., 2021). Other investigations undertaken during outbreaks of viral diseases such as severe acute respiratory syndrome (SARS), avian influenza (AV), and MERS Syndrome have found similar results (MERS-CoV) (Heeja et al., 2020). In high-income nations, such as the United States, the number of turnover intentions doubled compared to low-income ones like Ghana (Bonenberger et al., 2014), Iraq (Wang et al., 2017), South Africa (Delobelle et al., 2011) and the Philippines (Labrague et al., 2018).

Nurses' turnover is a challenge that many healthcare organizations are dealing with. According to a 2017 systematic analysis, high turnover intentions among nurses were mostly linked to stress and burnout, work dissatisfaction, and commitment (Pagilagan, 2017). The International Council of Nurses (ICN) suggested there would be mass traumatization in the nursing workforce. It estimated a mass turnover intention among nurses globally due to the pandemic, which threatens the healthcare system (ICN, 2020). This statement was consistent with a study conducted in Mumbai, which reported a strong relationship between stress level and turnover intention with r=0.7, where 52.42% of the nurses responded having moderate stress, and a majority of 66.39% of the nurses had moderate turnover intentions (Quazi N et al., 2021).

### 2.4 Socio-demographic Characteristics

Socio-demographic characteristics have been a predictor of work-related stress among nurses. In this study, socio-demographic characteristics such as age, marital status,

level of education, years of experience and involvement with COVID patients' care are included in studying work-related stress, and turnover intention among nurses includes

### 2.4.1 Socio-demographic Characteristics and Work-related Stress

Age and years of experience have been linked to work-related stress among nurses. It was reported that senior nurses had a lower level of work stress as they were more experienced (Anshasi et al., 2020; Chu & Kuo, 2015; Kunz et al., 2021). However, other research revealed that age was not significantly related to work stress (Faraji et al., 2019; Sharma et al., 2014).

Department of posting revealed to be statistically significant among nurses. Nurses working in emergency / intensive care units (ICU) had a higher level of stress than nurses posted in medicine, surgery, paediatrics, and obstetrics/gynaecology. Reasons associated with a higher level of stress among emergency/ICU nurses were insufficient regular breaks, work shifts, workloads, and staff shortage (Sharma et al., 2014).

In terms of work-related variables, it was reported that there was no significant evidence reporting marital status and monthly income influence work stress. However, a study conducted in Dammam, Eastern Saudi Arabia, showed that work stress was more common among married nurses and those with three or more children (Al-Makhaita et al., 2014).

Besides, the level of education was not statistically significant to work-related stress. However, nurses with master's degrees reported having a higher level of occupational stress compared to nurses with bachelor's degrees nurses with a higher level of education expected a better performance from themselves, creating and increasing job stress in nurses (Faraji et al., 2019; Sabzi et al., 2017; Yim et al., 2017).

Lastly, nurses working directly with COVID-19 patients reported higher work-

related stress attributed to the fear of COVID-19, causing higher levels of anxiety, depression, and stress (Abid et al., 2021; Kameg, 2021).

### 2.4.2 Socio-demographic Characteristics and Turnover Intention

Previous studies showed age and level of education played a role in turnover intention. Older nurses had lower turnover intention than younger nurses (Chiang & Chang, 2012; Engeda et al., 2014; Leone et al., 2015). Nurses with a higher level of education tend to have higher work expectations, thus intend to seek better job opportunities (Ayalew et al., 2015). However, these findings were justified by other researchers that age and level of education were not the basis of turnover. Individuals' mindsets in planning and achieving goals in their careers are (Rahmawati et al., 2014).

Another socio-demographic factor influencing turnover intention was work placement, which was highly related to perceived work stress. For example, nurses working in in-patient emergency rooms, hemodialysis and neonatal units reported a higher turnover intention rate due to stress than nurses working in the out-patient unit (Chiang & Chang, 2012).

As for factor income, Omar and his team (2015) showed that income significantly influenced turnover intention. This can be explained that low salaries disproportionate to the high workload and work pressure in hospitals have been the main reason for turnover intention. This kind of inequality leads to job dissatisfaction, subsequently, turnover among healthcare workers (Fogarty et al., 2014; Wen et al., 2018).

## 2.6 Theoretical and Conceptual Framework

The NIOSH Model of Job Stress (Figure 2.1) further explains work-related stress. This model points out that the work environment is a significant contributor to work stress; on the other hand, individual aspects are not overlooked. Exposure to a stressful working situation (also known as job stressors) can directly impact workers' safety and health. However, an individual and other situational factors can intervene to strengthen or weaken this influence.

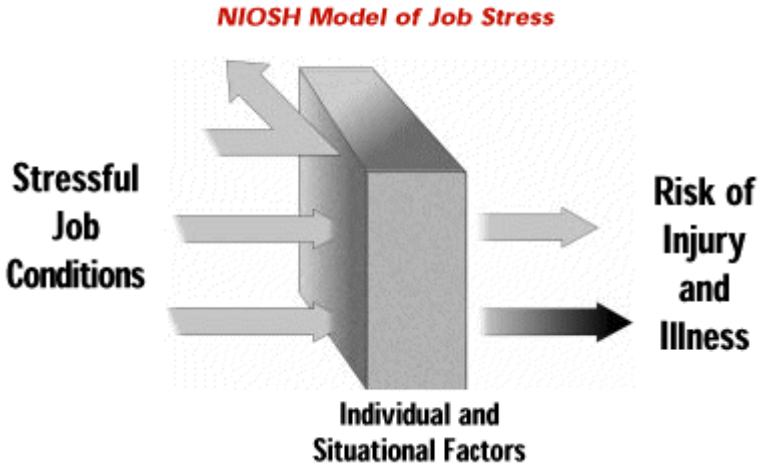


Figure 2.1: NIOSH Model of Job Stress. Adopted from Jick, T. D., & Payne, R. (2014). *Stress At Work*. National Institute for Occupational Safety and Health (NIOSH); National Institute for Occupational Safety and Health (NIOSH). https://www.cdc.gov/niosh/docs/99-101/ What Is Job Stress?

Turnover intention can be predicted using the Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB) (Figure 2.2). In TRA, it is argued that an individual's level of intention increases the effort required to carry out actual conduct (Ajzen, 1985). Still, TPB suggests that the intention to do an action is the more direct precursor to actual behaviour. The presence or absence of elements that promote or impede behaviour performance is referred to as behavioural control. Thus in the context of turnover, turnover intentions may only lead to turnover if an individual believes that

they have control over the decision to leave (Ajzen, 1991).

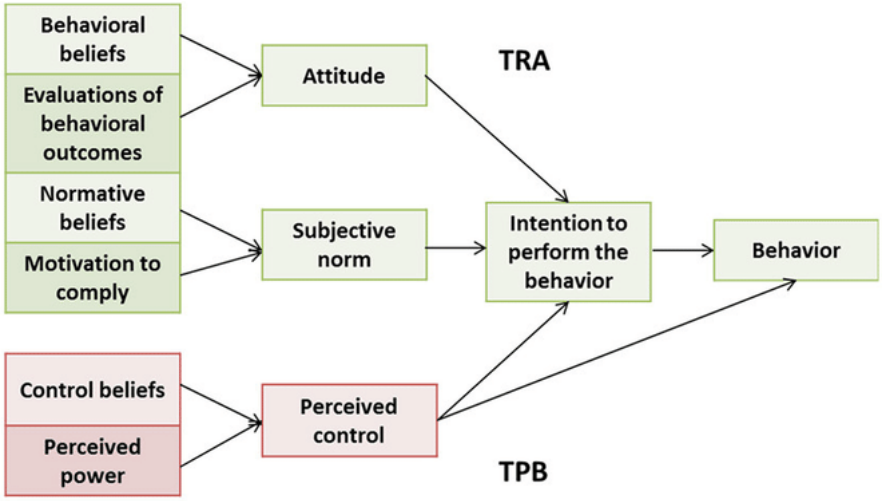


Figure 2.2: Theory of Reasoned Action (TRA) and Theory of Planned Behavior (TPB). Adapted from DeNicola et al., (2016). Road Traffic Injury as a Major Public Health Issue in the Kingdom of Saudi Arabia: A Review. *Frontiers in Public Health*, *4*(SEP). https://doi.org/10.3389/FPUBH.2016.00215

The current study investigates the relationship between work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM and the role of socio-demographic characteristics in this content. Figure 2.3 shows a conceptual framework adapted from the NIOSH Model, TRA and TPB theories that will guide the research process. According to NIOSH Model, working in an unprecedented situation during the COVID-19 pandemic (situational factor) can be related as a source of stressful job conditions and socio-demographic characteristics (individual factor) that will be explored. Through TRA and TRB, the researcher was able to reason the intention of nurses to perform the behaviour of turnover through analyzing the relationship of turnover intention with socio-demographic characteristics and work-related stress. Overall, the turnover intention is the dependent variable in this study that is affected by the independent variable, work-related stress; at the same time, study the association between socio-demographic characteristics with work-related stress and turnover intention among nurses.

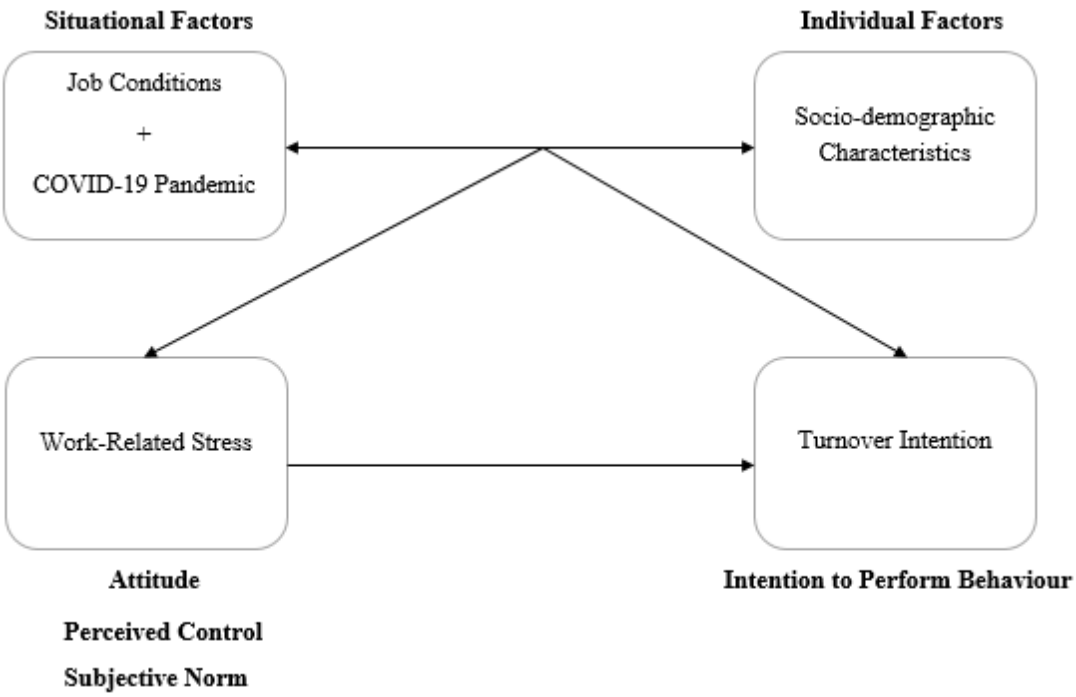


Figure 2.3: Conceptual Framework of Study: Turnover Intention Model. Adapted from NIOSH Model of Job Stress, Theory of Reasoned Action and Theory of Planned Behaviour.

# CHAPTER 3

# METHODOLOGY AND METHODS

## 3.1 Introduction

This chapter explains the approach and rationale used to support the chosen research methodology. Determining and understanding an appropriate research design is crucial for achieving the aims of the study. The chapter begins with a description of a cross-sectional design and a justification for using this approach. The section is followed by a description of the study setting, population, participant selection criteria, sampling plan, sample size determination, and instrumentation, including ethical consideration right through data collection methods. This chapter also involves a section that explains the proposed statistical analyses used with the quantitative data.

## 3.2 Research Design

A cross-sectional study design was used in this study. The cross-sectional study design measures the outcome and the exposures of the study participants at the same time. The researcher is then able to study the association between these variables. Cross-sectional study designs can be conducted relatively faster and inexpensively (Setia, 2016).

## 3.3 Study setting and population

### 3.3.1 Study setting

The study was at the Hospital USM in Kubang Kerian, Kelantan. This hospital is a teaching hospital with 830 beds and offers various specialties. This hospital is also recognized as Hybrid COVID Hospital in managing patients.

### 3.3.2 Research Duration

This study commenced in February 2022 until April 2022 after obtaining approval from the Human Ethics Committee, USM.

### 3.3.3 Research Population

The target population in this cross-sectional study was the in-patient nurses in Hospital USM. The wards of Hospital USM were categorized into four domains which were: medical/surgical wards, pediatric wards, obstetrics and gynecology wards and critical care wards as shown in Table 3.1. There were a total of 865 in-patient nurses in Hospital USM.

**Table 3.1** List of wards in Hospital Universiti Sains Malaysia.

| **Medical/ Surgical Wards** | **Pediatric Wards** | **Obstetrics & Gynecology Wards** | **Critical Care Wards** |
|---|---|---|---|
| 1 Selatan<br>1 Timur Belakang<br>2 Utara<br>2 Intan<br>2 Zamrud<br>3 Selatan<br>3 Utara<br>4 Selatan<br>4 Utara<br>4 Timur Depan<br>5 Selatan<br>5 Utara<br>7 Selatan<br>7 Utara | 1 Timur Depan<br>2 Selatan<br>6 Utara<br>6 Selatan | 1 Utara<br>1 Berlian<br>2 Akik<br>2 Baiduri<br>2 Topaz | 1 Nilam<br>1 Fairuz<br>1 Mutiara<br>2 Delima<br>4 Timur Belakang<br>8 Selatan<br>8 Intan<br>Ward Kristal<br>ICU Surgical<br>ICU Trauma<br>A&E |

## 3.4 Sampling Plan

A sampling plan is a detailed outline of which measurements will be taken at what times and by whom the selected sample reflects the characteristics of the total population (Stimson, 2018).

### 3.4.1 Sampling Criteria

Several criteria were set to ensure the subject's data were suitable for the research purposes and hence able to reach the targeted goals at the end of the study.

**Inclusion Criteria**

The specific eligibility requirements for inclusion in this study required that each participant must be:

- Registered nurses (U29 or U32) in Hospital USM.
- Nurses with at least 1-year work experience (Schmitt & Schiffman, 2019)

**Exclusion Criteria**

Subjects are excluded from this study if they are:

- Nurses who were on permanent extended leave exceeding six weeks duration during the time of the study (Said & El-Shafei, 2020).
- Nurses who are working in private wings wards (USAINS) and staff wards (8 Timur Depan).
- Nurses who are working in outpatient clinics (Chiang & Chang, 2012).

### 3.4.2 Sample Size Estimation

The sample size for the first objective (to determine the level of work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM) was determined using a single proportion formula. The anticipated proportion of this study was 82.8%, according to a similar survey conducted in Saudi Arabia (Al-Mansour, 2021).

$$n = \left(\frac{z}{\Delta}\right)^2 p(1-p)$$

Whereby, n = required sample size

z = value representing the desired confidence level, $Z_{0.05} = 1.96$

Δ= desired level of precision, ± 5%

*p* = anticipated population proportion 73.4% (0.734)

Calculation: $n = (\frac{1.96}{0.05})^2 0.734 (1-0.734)$

n = 300.02

n = 300 participants

The calculated sample size was 300, and after considering a 20% drop out, the sample size was:

n = 300 + 20%

n = 300 + 60

n = 360 participants

Hence, the sample size needed for the first objective was 360 participants.

The second objective (to identify the association between work-related stress and turnover intention during the COVID-19 pandemic among nurses in Hospital USM) was determined using two means formula:

$$n = \frac{\left(\sigma_1^2 + \sigma_2^2\right)\left(z_{1-\alpha/2} + z_{1-\beta}\right)^2}{\Delta^2}$$

Whereby, n = required sample size

$б_1$ = standard deviation of population 1 (σ = 0.70) (Ochieng, 2021)

$б_2$ = standard deviation of population 2 (σ = 0.78) (Ochieng, 2021)

$Z_{1-\alpha/2}$ = alpha in one tail for one-sided alternatives ($Z_a$ = 1.96)

$Z_{1-\beta}$ = power of study, 80% ($Z_b$ = 0.84)

$\Delta^2$ = $|\mu_2 - \mu_1|$ (difference between means of group 1 and group 2) (Ochieng, 2021)

Calculation: $$n = \frac{(0.70+0.78)^2 \times (1.96+0.84)^2}{(|3.47-2.98|)^2}$$

n = 21.91

n = 22 participants per group

The minimal sample size was 22, and after considering a 20% drop out, the sample size calculated was:

n = 22 + 20%

n = 22 + 4

n = 26 participants per group,

n = 52 participants per 2 group.

Hence, the sample size required for the second objective in this study was 52 participants who fulfilled the inclusion and exclusion criteria.

For the third (to identify the association between socio-demographic characteristics and work-related stress during the COVID-19 pandemic among nurses in

Hospital USM) and fourth objective (to identify the association between socio-demographic characteristics and turnover intention), the sample size was calculated by using double proportion formula.

$$n = \frac{P_1(1-P_1) + P_2(1-P_2)}{(P_1 - P_2)^2} \quad (z_\alpha + z_\beta)^2$$

Whereby, n = required sample size

p = anticipated population proportion

$P_1$ = nurses involve with COVID-19 patient's care 60.4% (0.604) (Nashwan et al., 2021a)

$P_2$ = nurses does not involve with COVID-19 patient's care 39.6% (0.396) (Nashwan et al., 2021a)

$Z_a$ = value of the standard normal distribution curve cutting off probability alpha in one tail for one-sided alternatives ($Z_a = 1.96$)

$Z_b$ = power of study, 80% ($Z_b = 0.84$)

Calculation: $n = \frac{[0.604\ (1 - 0.604) + 0.396\ (1 - 0.396)] \times (1.96+0.84)^2}{(0.604 - 0.396)^2}$

n = 48.87

n = 49 participants per group

The minimal sample size was 49, and after considering a 20% drop out, the sample size calculated was:

n = 49 + 20%