PERCEIVED STRESS AND ADHERENCE TO PREVENTION MEASURES DURING PANDEMIC COVID-19 PHASE AMONG MIDWIVES IN HOSPITAL UNIVERSITI SAINS MALAYSIA

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by

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CERTIFICATE

This is to certify that the dissertation entitled "Perceived Stress and Adherence to Prevention Measures During Pandemic Covid-19 Phase Among Midwives in Hospital Universiti Sains Malaysia is the bona fide record of research work done by Ms. Nur Shafiqah binti Mohamad Rosle during the period from September 2020 to June 2021 under my supervision. I have read this dissertation and that in my opinion it conforms to acceptable standards of scholarly presentation and is fully adequate, in scope and quality, as a dissertation to be submitted in partial fulfilment for the degree of Bachelor of Nursing (Honours).

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DECLARATION

I hereby declare that this dissertation is the result of my own investigations, except where otherwise stated and duly acknowledged. I also declare that it has not been previously or concurrently submitted as a whole for any other degrees at Universiti Sains Malaysia or other institutions. I grant Universiti Sains Malaysia the right to use the dissertation for teaching, research, and promotional purposes.

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LIST OF ABBREVIATIONS

CDC	Centers of Disease Control and Prevention
COVID-19	Coronavirus 2019
HCWs	Healthcare Workers
NI	Nosocomial Infection
PPE	Personal Protective Equipment
PSS	Perceived Stress Scale
RAM	Roy Adaptation Model
SARS-CoV-2	Severe Acute Respiratory Syndrome Coronavirus 2
SOP	Standard Operational Procedure
USM	Universiti Sains Malaysia
WHO	World Health Organization

PERSEPSI SKALA TEKANAN DAN KEAKURAN LANGKAH PENCEGAHAN SEMASA FASA PANDEMIK COVID-19 DALAM KALANGAN BIDAN DI HOSPITAL UNIVERSITI SAINS MALAYSIA

ABSTRAK

Persepsi skala tekanan dalam kalangan bidan mempengaruhi keakuran terhadap langkah-langkah pencegahan terutamanya semasa pandemik. Status kesihatan mental bidan juga berkait rapat dengan persepsi skala tekanan. Kajian keratan rentas telah dilakukan dalam kalangan 63 orang bidan di Hospital USM. Borang soal selidik telah diberikan kepada peserta yang memenuhi kriteria pengambilan sampel kajian. Objektif umum bagi kajian ini adalah untuk mengetahui tahap persepsi skala tekanan dan tahap keakuran langkah-langkah pencegahan semasa fasa pandemik COVID-19 dalam kalangan bidan di Hospital USM. Selain itu, kajian ini juga bertujuan untuk mengetahui hubungkait tahap persepsi skala tekanan dan tahap keakuran langkah-langkah pencegahan semasa fasa pandemik COVID-19 serta hubungkait di antara sosio-demografi (tahap pengajian, pengalaman bekerja dan mempunyai anak) dengan tahap persepsi skala tekanan semasa fasa pandemik COVID-19. Data telah dianalisa menggunakan statistik deskriptif dan *'Pearson Chi-Square test'*, dengan menggunakan '*Statistical Package for Social Sciences* (SPSS)' versi 26.0. Hasil kajian menunjukkan bidan di Hospital USM mempunyai tahap persepsi skala tekanan yang sederhana (n=52, 82.5%). Mereka juga mempunyai tahap keakuran langkah-langkah pencegahan yang bagus (n=52, 82.5%). Seterusnya, dari segi hubungan pula, terdapat hubungkait di antara tahap keakuran langkah-langkah pencegahan dengan tahap persepsi skala tekanan semasa fasa pandemik COVID-19 (nilai-p <0.05). Walau bagaimanapun, tiada hubungkait di

antara sosio-demografi (tahap pengajian, pengalaman bekerja dan mempunyai anak) dengan tahap persepsi skala tekanan semasa fasa pandemik COVID-19 (nilai-*p* >0.05). Sehubungan dengan itu, tindakan yang sesuai seperti program kesedaran dan pendidikan haruslah dilakukan bagi membantu mengurangkan tahap tekanan dan mengekalkan tahap keakuran langkah-langkah pencegahan yang baik.

PERCEIVED STRESS AND ADHERENCE TO PREVENTION MEASURES DURING PANDEMIC COVID-19 PHASE AMONG MIDWIVES IN HOSPITAL UNIVERSITI SAINS MALAYSIA

ABSTRACT

Perceived stress among midwives influences the adherence to prevention measures, especially during a pandemic. Midwives' mental health status is also associated with perceived stress. A cross-sectional study was conducted on 63 midwives in Hospital USM. A self-administered questionnaire was distributed to midwives that fit the inclusion criteria. The general objective of this study is to determine the level of adherence to prevention measures and level of perceived stress during pandemic COVID-19 among midwives in Hospital USM. Besides, to determine the association between level of adherence to prevention measures with level of perceived stress during pandemic COVID-19 phase and association between socio-demographic characteristics (level of education, year of work experiences, and having children) with level of perceived stress during pandemic COVID-19 phase. The data were analysed by descriptive statistics and Pearson Chi-Square test, using Statistical Package for Social Sciences (SPSS) version 26.0. The findings showed that midwives in Hospital USM have moderate level of perceived stress (n=52, 82.5%). In addition, they also have good level of adherence to prevention measures (n=52, 82.5%). In term of the association, there was a significant association between level of adherence to prevention measures with level of perceived stress during pandemic COVID-19 phase (*p*-value <0.05), while there was no significant association between socio-demographic characteristics (level of education, year of work experiences, and having children) with level of perceived stress during pandemic COVID-19 phase (*p*-value >0.05). Thus, suitable action such as awareness and

educational program must be done to help reduce the stress level with maintaining good compliance to prevention measures.

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

COVID-19 is a pandemic disease that emerges worldwide and causes a serious problem to health status. COVID-19 or Coronavirus 2019 is known as the fourth viral pandemic disease after Severe Acute Respiratory Syndrome Coronavirus in 2002 to 2003, Influenza H1N1 in 2009, and recently the Middle-East Respiratory Syndrome Coronavirus, that identified in Saudi Arabia in 2012 (Ngwewondo et al., 2020). Malaysia is currently entering third waves of COVID-19 that were driven from clusters in Sabah and Kedah. In Sabah, the phenomenon started to show up when there is a sharp increase on 7 September due to Benteng Lahad Datu (LD) cluster while in Kedah, the number of cases shot up since 8 September. It started with Sungai cluster with recorded cases of more than 20 in the same day (Ahmad & Pfordten, 2020). The cluster originally came from a 39 years old healthcare worker at a private medical center.

World Health Organization (WHO) stated the main way of Severe Acute Respiratory Syndrome Coronavirus 2 (SARS-CoV-2) spread is by droplets either in the form of respiratory or aerosols (WHO, 2020). A study done by Malta, Rimoin & Strathdee (2020), suggested that COVID-19 is primarily transmitted from person to person through respiratory droplets. When someone infected with SARS-CoV-2 coughed or sneezed, they produce infective respiratory droplets that can be inhaled by someone close to them. In addition, an individual will get affected once the virus gets into their mouth, nose, and eyes. This is due to droplets landing on nearby surfaces and transmitted through contact transmission.

The signs and symptoms of COVID-19 can be either symptomatic or asymptomatic and still be the main debate in discussing the clinical characteristics. However, many studies suggested that COVID-19 is symptomatic (Wu, Wu, Liu & Yang, 2020; Guan et al., 2020). This is because, during the screening process, an individual is tested positive when she or he shows signs and symptoms of respiratory problems such as cough and fever. WHO (2020) stated that the incubation period of COVID-19, starting from the exposure time to symptoms onset is five to six days and may last until day 14. Regarding this, Lauer et al., (2020) agreed the virus incubation period is estimated to be between five to six days and the clinical characteristics will be developed within 12 to 16 days.

This current outbreak of disease is affecting worldwide from many aspects, especially those who work in a medical line. This is because the infected patient will need medical equipment such as medications and specific medical equipment to combat the virus. There are a lot of published articles on healthcare workers (HCWs) burnout especially the nurses or midwives as they are the closest persons to patient (Aksoy & Koçak, 2020; Shaukat, Ali & Razzak, 2020). HCWs play a vital role in helping the authorities to reduce the spread rate. In this context, WHO and Centers for Disease Control and Preventions (CDC) has released guideline or standard operational procedure (SOP) that must be followed by HCWs for them to take care of the infected person (WHO, 2020; CDC, 2020). This means they have a higher chance of getting infected and spreading the disease. One of the most important SOP is to wear full personal protective equipment (PPE).

A study done by Shaukat et al., (2020), cited that battling with COVID-19 causes the HCWs become vulnerable, physiological and psychological suffering. Long duty hours, lack of PPE, and working in high-risk situations are the main causes of their

misery. Similar in a study done by Talaee et al., (2020) also stated that the stress level is higher in HCWs. American Psychological Association (2015), stated that stress eventually will influence the behaviour. Thus, the stress faced by the HCWs can cause them to uncomplying the SOP. The situation is bothering as this can be one of the causes of the formation of a new cluster COVID-19.

1.2 Problem Statement

COVID-19 is a life-threatening event. There is a lot of articles that discussed the impact of COVID-19 (Ngwewondo et al., 2020; Wu et al., 2020; Israel et al., 2020). Apart from that, those who work in the medical profession are the mainspring in fighting the virus. They are the frontliner, helping to treat the infected patients. However, the long term of being in close contact with infected patients may affect the HCWs from all aspects, especially their mental health status. In Malaysia, the authority has released the guidelines that must be followed by all people to help the frontlines overcome this unfavourable virus outbreak. In that way, the frontliner can get a good rest after a long battle in the first and second wave of COVID-19 outbreak (Ministry of Health Malaysia, 2020).

In the context of midwives, their roles are known as the specialty nurses that helping in the birth process. Midwives' work environment (labour room) can be defined as a "rushing" and "chaos" place and requires skill full and competent person when helping in the birth process. Sometimes, they do not have enough time to do the screening tests for all patients that are going to deliver baby/babies or even wearing a full PPE in an emergency. This state of affairs enlarged the risk of getting infected by the pregnant women who run into COVID-19. In other words, the pregnant women's immune system is low compared to unpregnant women. They have a higher tendency of getting infected.

For example, there were a few cases where the baby was diagnosed with COVID-19 after being delivered as the virus was passed from the mother to baby through the placenta (Tanne, 2020).

Besides, this condition eventually will increase the stress level among the midwives due to fear of getting infected. A low level of perceived stress during pandemic COVID-19 phase among midwives is essential to make sure the midwives work in optimal health so that they can provide the care with effectiveness; therefore, they need mentally not in stress. WHO (2020) stated that the lack of quality care provided by midwives along with conditions and diseases faced by the newborn is one of the causes of newborn death. Other than that, it also will influence the midwives' adherence to prevention measures in combatting the disease. It is well known that stress will affect behaviour and cause prevention measures could not be complied appropriately and efficiently (Aksoy & Koçak, 2020).

There is much scientific evidence showing that midwives' mental health is affected by life-threatening events (Aksoy & Koçak, 2020; Eckert, 2020). The midwives' behaviour will be influenced and cause the compliance to prevention measures to become weak. The researcher intended to assess the level of perceived stress and adherence to prevention measures during pandemic COVID-19 phase among midwives in Hospital Universiti Sains Malaysia (USM) since there are no studies been done yet.

1.3 Research Questions

1. What is the level of perceived stress during pandemic COVID-19 phase among midwives in Hospital USM?
2. What is the level of adherence to prevention measures during pandemic COVID-19 phase among midwives in Hospital USM?
3. Is there any association between level of adherence to prevention measures with level of perceived stress COVID-19 among midwives in Hospital USM?
4. Is there any association between selected socio-demographic characteristics (level of education, year of work experiences, and having children) with level of perceived stress COVID-19 among midwives in Hospital USM?

1.4 Research Objectives

The research objectives are divided into two, general and specific objectives.

1.4.1 General Objective

To determine level of perceived stress and adherence to prevention measures during pandemic COVID-19 phase among midwives in Hospital USM.

1.4.2 Specific Objectives

1. To determine level of perceived stress during pandemic COVID-19 phase among midwives in Hospital USM.

2. To determine level of adherence to prevention measures during pandemic COVID-19 phase among midwives in Hospital USM.

3. To determine association between level of adherence to prevention measures with level of perceived stress COVID-19 among midwives in Hospital USM.

4. To determine association between selected socio-demographic characteristics (level of education, year of work experiences, and having children) with level of perceived stress COVID-19 among midwives in Hospital USM.

1.5 Research Hypothesis

Null Hypothesis (H_0): There is no significant association between level of adherence to prevention measures with level of perceived stress COVID-19 among midwives in Hospital USM.

Alternative Hypothesis (H_A): There is a significant association between level of adherence to prevention measures with level of perceived stress COVID-19 among midwives in Hospital USM.

Null Hypothesis (H_0): There is no significant association between selected socio-demographic characteristics (level of education, year of work experiences, and having children) with level of perceived stress COVID-19 among midwives in Hospital USM.

Alternative Hypothesis (H_A): There is a significant association between selected socio-demographic characteristics (level of education, year of work experiences, and having children) with level of perceived stress COVID-19 among midwives in Hospital USM.

1.6 Significance of the Study

COVID-19 transmission may be started from the HCWs. For example, in Kedah, the first cluster of COVID-19 outbreaks during the third wave started from the HCWs and spread among colleagues. Even though the authorities have released the guidelines in managing the COVID-19, the intervention was unsuccessfully being complied under this circumstance. A study done by Wan et al., (2020), showed the prevalence of positive cases among HCWs is 0.3%. Thus, this study is significant to identify the stress level and the confidence in managing current situation and also the adherence of prevention measures of pandemic COVID-19 among midwives in Hospital USM.

The main aim of this study is to advocate the midwives on how to reduce their stress level which can cause a behavioural deficit. Apart from that, the results of this study can be used to conduct a prevention program towards pandemic disease among midwives to enhance the changes in behaviour. The program also may be used in other professions such as teachers. Besides, the midwife's mental health can be secured in a good condition even though the current situation may leave a big impact. Otherwise, this action will be taken for granted and lead to worse conditions within the time. In addition, the research data may be used in the future as a reference to another author.

1.7 Conceptual and Operational Definitions

Table 1.1: Conceptual and operational definitions

Terms	Conceptual Definition	Operational Definition
Perceived Stress	Perceived stress is defined as emotions and feelings that a person thought about their stress within a period of time (Phillips, 2013).	In this study, level of perceived stress will be assessed using a questionnaire. The questionnaire will focus on the midwives' level of perceived stress during pandemic COVID-19 phase. Scoring with 'low', 'moderate', and 'high' stress will be based on the level of perceived stress.
Adherence	Adherence is defined as an act, action, or quality of oneself to bide the rules (Merriam-Webster's unbridged dictionary, 1996)	In this study, midwives' level of adherence in following the SOP provided by the government/WHO/CDC to break down the COVID-19 will be assessed using a questionnaire. Scoring with 'poor', 'moderate' and 'good' compliance will be based on the level of adherence to prevention measures.
Prevention Measures	Prevention measures are defined as an act or step taken to keep from happening or existing of something unfavoured (Merriam-Webster's unbridged dictionary, 1996)	In this study, prevention measures are used to define the midwives' actions or use material following guidelines to prevent pandemic COVID-19 disease-infected nurses or others.
Pandemic	Pandemic is defined as an outbreak of a new disease, crossing boundaries of countries that affected a large number of people (WHO, 2010).	In this study, pandemic is used to define the outbreak of COVID-19 disease that affected more than 200 countries worldwide.
COVID-19	COVID-19 refers to an outbreak of disease in December 2019 called as novel coronavirus (nCoV) that origin from Wuhan City of Hubei Province of China (X. Wang et al., 2020).	In this study, pandemic COVID-19 phase is a situation that affects the stress level and adherence of midwives in prevention measures of COVID-19.

Table1.1: Continued

Midwives	A person who has been regularly admitted to a midwifery educational program, duly recognized in the country in which it is located, has completed the prescribed course of studies in midwifery and has acquired the requisite qualifications to be registered and/or legally licensed to practice midwifery (International Confederation of Midwives, 2005)	In this study, midwifery is referred to the nurses who worked as a midwife in antenatal ward, postnatal ward, labour room and antenatal clinic in Hospital USM.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

The literature review is used to critically review the important published scholarly literature regarding a specific topic. In this chapter, the researcher explains the literature related to perceived stress and adherence to prevention measures among midwives. In addition, the detail of the conceptual framework chosen will be discussed in this chapter.

2.2 Review of Related Literature

2.2.1 Pandemic COVID-19 Phase

At the end of 2019, a significant disease called novel Coronavirus 2019 (nCov-19) started to emerge in Wuhan, China. Following this, the disease has spread to at least around 200 countries and has been announced as a global pandemic by WHO on 11th March 2019 (Azlan, Hamzah, Sern, Ayub & Mohamad, 2020). To date, around 61.2 million positive cases and 1.4 million deaths have been recorded worldwide (Department of Statistics Malaysia, 2020). In Malaysia, the first case confirmed on 25th January 2020 related to three tourists from China that were tested positive by Singapore Health Science authority (Reuters, 2020). To control the rapid spread of the ongoing COVID-19 outbreak in Malaysia, several measures were adopted by the government such as the enforcement of Movement Control Order on 18th March 2020 that known to be similar to lockdowns in China and Italy (Azlan et al., 2020).

The clinical symptoms caused by SARS-Cov-2 are known as COVID-19 (WHO, 2020). According to a study done by Larsen, Martin, Martin, Kuhn & Hicks (2020), COVID-19 symptoms are similar to common illnesses such as fever and cough. WHO stated the most common symptoms that COVID-19 patient will undergo are fever, dry cough and tiredness. Other than that, COVID-19 patient also might have other less common symptoms such as aches and pains, sore throat, diarrhea, conjunctivitis, headache, loss of taste or smell, and a rash on the skin. In some severe cases, the patient will face difficulty breathing or shortness of breath, chest pain or pressure, and loss of speech or movement that will lead to death.

In a study done by Pathak et al., (2020), SARS-CoV-2 infection may be related to COVID-19, presents with signs and symptoms of fever, dry cough, dyspnea, pulmonary edema, and acute respiratory distress syndrome. Evidence-based on a study done by D. Wang et al., (2020), from 138 patients in Wuhan, China, the prevalence clinical manifestations which is fever is 98.6%, fatigue is 69.6% and dry cough is 59.4%. As stated by Israel et al., (2020), other clinical manifestation such as headache, sore throat, and diarrhea should not be overlooked, and need thorough clinical investigation. A study done by Poncet-Megemont et al., (2020), found that headaches have a high prevalence which is 59.0% especially during acute phase of COVID-19, while the prevalence of loss of smell is 60.4% and loss of taste is 58.3%. Even after one month of recovery, the headache, loss of smell, and taste still present with the prevalence of 3.6%, 14.4%, and 11.5%, respectively.

The transmission of COVID-19 was declared as zoonotic in the early pandemic phase (Lin et al., 2020). However, a recent study done by Huang et al., (2020), stated that many patients had infected without a history of going to the

market place in Wuhan, China, that indicates the infection can occur between human to human. The mode of transmission is the same as Severe Acute Respiratory Syndrome and Middle-East Respiratory Syndrome which are by respiratory droplets in a close contact range (Malta et al., 2020). In addition, even though COVID-19 is not mainly an airborne virus, the aerosols that came from the infected person through sneeze or cough can be the source of transmission (Goh & Anaes, 2020). In a close system of air ventilation, the virus may stay long-lasting in the air and increase tits concentration as increases the rate of transmission (Wu et al., 2020).

2.2.2 Impact of COVID-19 on Midwives

American College of Nurse-Midwives defined midwifery as a profession in a healthcare setting that provides care to women from adolescence phase through menopause (American College of Nurse-Midwives, 2012). The care can be divided into several cares such as primary care, gynae includes during and after pregnancy care, family planning, childbirth, and newborn care. In addition, there is also treatment of male partners, who have sexually transmitted infections. Worldwide, women during labour and birth will be attended by midwives. According to the Association of Women's Health and Nurses, the midwife role and obstetric nurse role are same, especially in the hospital setting (Association of Women's Health and Nurses, 2016).

Midwives play a significant role in delivering care in primary health especially in an area with limited health workers (Bakibinga, Forbech Vinje & Mittelmark, 2012). As the first people that encountered a situation where there is a birth process, they must ensure the safety of the child and the mother and the

quality care given (Pallangyo, Mbekenga, Källestål, Rubertsson & Olsson, 2017). During COVID-19 phase, midwives are at the core of the response as women are still getting pregnant, give birth, and need midwifery in the process of giving birth (Furuta, 2020). The situation changed as there will be some of the standard precautions that must be obeyed such as social distancing of one meter. Apart from that, PPE must be worn before the birth process. However, due to fear of COVID-19, the midwives encounter difficulty in providing care.

Despite the rise of number cases, midwives are advisable to keep on working as usual due to the frequency of continuous antenatal seek and intrapartum services in healthcare facilities (Pallangyo, Grace, Maina & Fleming, 2020). Even though they face the risk of getting infected with COVID-19 from the women's family members such as their husband in the labour room, yet the pregnant women still need someone close to get support during giving birth (UNICEF, 2020). Besides, when some emergency occurred, the midwives rarely have time to rest and need to work fast. For example, in a situation where the pregnant women arrived at hospital urgently to give birth, they do not have enough time to do the screening test. This exposure will increase the risk cause midwives to face unfavourable pressure and mental distress (Kang et al., 2020).

Other than that, nosocomial infection (NI) of COVID-19 may occur to HCWs. There are several ways on how the NI can lead to life-threatening among the HCWs (Wang, Wang, Chen & Qin, 2020). Study done by Y. Wang et al., (2020), stated that clusters of NI have occurred in hospitals. However, to minimize the risk of getting infected, the SOP must be followed strictly in a real-life situation, midwives can't secure distance within one meter from the patient as midwives' role need to be closed with patient. In example, when the mother needs

to push the baby during second labour or when the baby needs to be feeding by the new mother.

2.2.3 Midwives' Perceived Stress during COVID-19

Midwives are the frontlines healthcare professional who works across acute care hospitals and government healthcare agencies. They have multiple roles and functions to deliver quality care to patients. When newly identified infectious diseases came, they face a greater potential risk of infection as well as work-related anxiety and mental health problems such as mental distress (Khalid, Khalid, Qabajah, Barnard & Qushmaq, 2016). Mental distress is related to stress and emotional changes. Midwives that work in distress situation may have emotional burden, physiological and physical fatigue (Hunter & Warren, 2014). Study done by Aksoy & Koçak (2020), stated that it is possible for midwives experiences negative emotions as the have to work in the pandemic due to fear. This is because there is possibility that the midwives contact the patient with suspect COVID-19 or that already being infected.

In fact, midwives' perceived stress may be worse and lead to depression if not being taken well. Evidence showed by study done by Yörük & Güler (2021), where the nurses and midwives have faced depression during the crisis. It is thought that there are a lot of factors that affect the development of depression as they work directly with patient without knowing the patient's health status. As example, increase in number of patients per day that congruent with increase of positive cases of COVID-19 per day, mortality and morbidity among healthcare workers due to COVID-19 and also poor of PPE and staff availability.

The stress may be associated factors in worsening the midwives' health (Khamisa, Oldenburg, Peltzer & Ilic, 2015). Thus, maintaining the midwives' health is very important especially during this pandemic phase to reduce disease spread (Kang et al., 2020). In the view of the researcher, midwives with good health conditions able to follow the SOP that is provided by the government as an initiative to overcome the outbreak. For example, always performing hand rub before and after touching the patient, always wear complete PPE, and keep social distancing at least 1 meter from each other (WHO, 2020; CDC, 2020). Kadoya et al., (2020) stated that the confidence level of HCWs especially non-physician HCWs is low towards COVID-19 care. This condition happens due to lack of knowledge regarding standard infection prevention measures guidelines provided by the authorities.

McEachan et al., (2016) stated that knowledge is a prerequisite in providing health care, at the same time approving the attitudes are influenced by the knowledge. Evidence showed in a study done by Kadoya et al., (2020), the greater knowledge, the greater confidence level of HCWs in controlling and defeating the coronavirus disease. Other than that, poor knowledge on prevention measures correlates with the low training program by the hospital. The previous study was done by Zahoor, Muhammad & Mustafa (2020), suggest that training program played an important role in the development of confidence, skill, and competencies of HCWs. Thus, an appropriate training program might be helpful for HCWs in managing infectious diseases.

2.2.4 Adherence to Prevention Measures of COVID-19

A previous study done by Lai et al., (2020), stated that HCWs played a vital role in preventing the risk of infection even though being exposed to infectious disease. There are several guidelines provided by WHO (2020) and CDC (2020) such as keep the social distancing and wearing a mask or full PPE when being around other people or patients. Besides, apply 3C's (crowded, confined, closed space) of safer environment anywhere and anytime. There are study showed outstanding pieces of evidences that proper prevention measures management during the outbreak phase can change the course of outbreak respectively (El Bushra et al., 2017). A study done by Lai, Wang, Qin, et al., (2020), stresses the appropriate use of PPE is essential among HCWs to avoid an increase in COVID-19 cases.

However, midwife's adherence to prevent an outbreak may be impossible in some cases. For example, when providing health care, it is impossible to keep social distancing as the midwives must touch the patient. Other than that, the midwives also need to work in a team. Within a space that is crowded with a lot of people that cooperate with each other, it seems to be difficult to follow the SOP. When this situation out of control, only then it will lead to an increase of positive cases and mortality rate. Ye, Yang & Liu (2020), stated that inadequate PPE, overload of patient or staff burnout may be causes of inadequate compliance of HCWs in prevention measures, thus lead to healthcare infections.

In addition, the midwives' standard quality care must be achieved optimally. A study done by Fashafsheh, Ayed, Koni, Hussein & Thultheen (2016), stated there are several measures that must be followed even in a life-threatening

situation. For example, midwives must provide care with dignity and respect, promoting skin to skin between mother and child and supporting women's mental health (WHO, 2020). In this context, the infection rate can be increased if the mother and child are separated. In return, if the measures are not being complied with to prevent the infection, the workload, anxiety, and stress faced by midwives increased gradually. Thus, this condition will lead to midwives' burnout and deteriorating workplace behaviour (O'Connell, Crowther, Ravaldi & Homer, 2020).

2.2.5 Selected Socio-demographic Characteristics and Perceived Stress COVID-19

There is a significant association between demographic data and infection prevention measures (Tang, Kwong, Chen & Cheng, 2020). In a study done by Powell-Jackson et al., (2020), the demographic data such as age are negatively significant with compliance of appropriate PPE. Nofal, Subih & Al-Kalaldeh (2017), stated that HCWs' characteristics influence compliance. For example, higher years of work experience had a positive impact on compliance to prevention measures (Nofal et al., 2017). Kim & Choi (2016), stated that there is no evidence showing the association between the religion of the HCWs with the compliance of prevention measures. However, Al-Amri, Bharti, Alsaleem, Al-Musa, Chaudhary & Al-Shaikh (2017) successfully showed that there is significant between education level and compliance to the prevention of infection. For example, lot of HCWs emphasized the need to attend programs related to prevention measures of infection. This indicates the higher education level, the more compliance percentage (Nofal et al., 2017).

In addition, Zhu et al., (2020), stated that there is an association between socio-demographic characteristics and perceived stress. Especially in women HCWs, they are having a difficult situation where they need to work and at the same time, they scare they will bring the infectious disease to their family member (Li et al., 2020). This shows that having a child can increase the stress level due to fear of COVID-19. A recent study done by Wang, Horby, Hayden & Gao (2020), found that women are associated with anxiety and Post-Traumatic Stress Disorder in the crisis of COVID-19. This means, midwives also have the tendency to face the same thing as most of the midwives are women.

2.3 Theoretical and Conceptual Framework

This study will be guided by Roy Adaptation Model (RAM). Nowadays, RAM is one of the most frequently conceptual frameworks that are always being applied in research (Naga & Al-Khasib, 2014).

2.3.1 An Overview of Roy Adaptation Model (RAM)

Roy Adaptation Model (RAM) contains five main concepts of the nursing theory which are adaptation systems represented by a person, the health and environment, and the goal of nursing practice (Jennings, 2017). Roy, Whetsell & Frederickson (2009) stated that a person is defined as a whole community, while the environment is defined as a condition that influences the person's development and behaviour. Health is defined as a process of integration to a normal and complete person. The goal of nursing is defined as an application of the scientific knowledge about the nursing practice on a person and with an adaptation of the integrated process. Thus, in this study, RAM will be used as a

conceptual framework to investigate the relationship between perceived stress and adherence to prevention measures during the pandemic phase and to help the researcher to predict the results by correlating research variables with the RAM theory concept. Figure 2.1 shows the overall components of RAM.

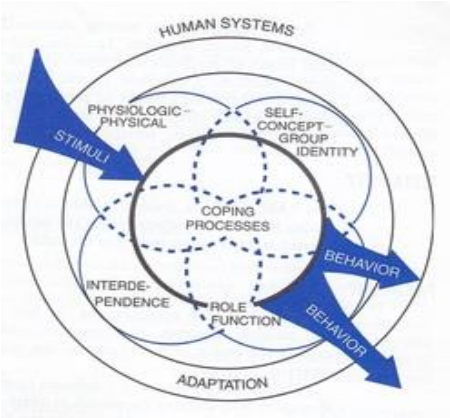

Figure 2.1: Human Adaptive Systems (Roy et al. 2009)

2.3.2 Conceptual Framework

RAM stated that stimuli cause the active coping response. This means the adaptation is the core of RAM theory (X. Wang et al., 2020). The life-threatening situation faced by the first proposition which is midwives may affect the midwives negatively or positively from the aspect of behaviour. In this study, COVID-19 is the stimuli that make the midwives adapt to produce the great behaviour that in turn promotes health. When the midwives are able to contribute to the goals of adaptation, the results steer the effective responses. In fact, the environment is vital in promoting adaptation. Midwives need to interact well with the environment so that behaviour responses will benefit both, midwives and the environment. Apart from that, developing theories of intervention is essential for the management of patients. In this context, midwives may use all the knowledge

in the form of nursing process to the manage patient as well as to promote adaptation (Frederickson, 2000).

From this study, the researcher wants to observe how the stimuli which are pandemic COVID-19 phase influence the behaviour of the midwives in providing the care. With the presence of active forces in the adaptation process, the positive or negative behaviour can be identified. The selected socio-demographic characteristics which are known as the environment of the midwives may influence the process of adaptation. As a result, the midwives' perceived stress may be measured in form of level. The instrument that the researcher use to identify the level was Perceived Stress Scale (PSS) by (Cohen & Williamson, 1988; Sandhu, Ismail & Rampal, 2015). As a consequence of stress, midwives' adaptation to compliance of prevention measures or infection control prevention also will be affected. To identify the compliance level, the researcher use questionnaire on prevention measures that develop from guidelines provided by (WHO, 2020; CDC, 2020). Figure 2.2 illustrate the conceptional framework for this study.

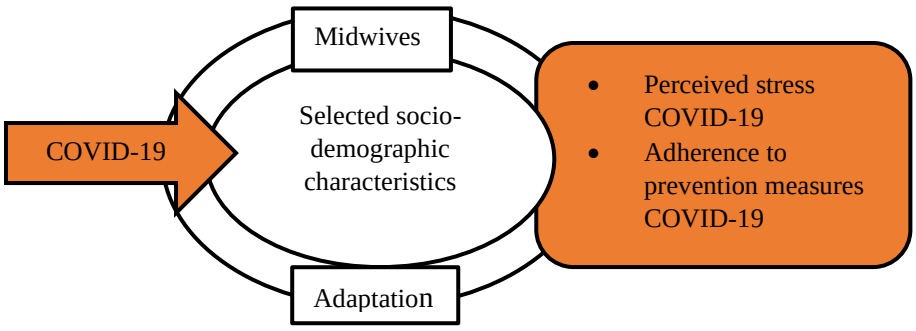

Figure 2.2: The adapted Roy Adaptation Model (RAM) by Roy et al., (2009)

CHAPTER 3

METHODOLOGY

3.1 Introduction

In this chapter, the researcher explained the methodology used in conducting this study including research design, sample size selection, data collection, and analysis. Apart from that, the detail of ethical consideration of the study which was one of the requirements to conduct the study also was explained.

3.2 Research Design

The research design used was a cross-sectional study. A cross-sectional study is a study that measures the exposure and outcome at the same time within the specific time that faster and low cost and only select the midwives based on the inclusion and exclusion criteria. This questioned subject once and can represent the population if the sample is properly chosen (Setia, 2016). This was a useful way to gather information on level of perceived stress and adherence to prevention measures during pandemic COVID-19 phase among midwives. This study was conducted by a questionnaire-based survey for midwives in Hospital USM.

3.3 Study Setting and Population

The population of nurses who worked in the Obstetrics & Gynaecology department was 118 in Hospital USM. However, the target of this population study was 63 nurses which were qualified midwives or known as midwives which were relevant to this population study. All the midwives were from the antenatal ward (2 Akik and 2 Baiduri), postnatal ward (2 Topaz), labour room (1 Berlian), and the antenatal clinic was chosen by using purposive sampling. Figure 3.1 illustrated the work placement of midwives in Hospital USM.

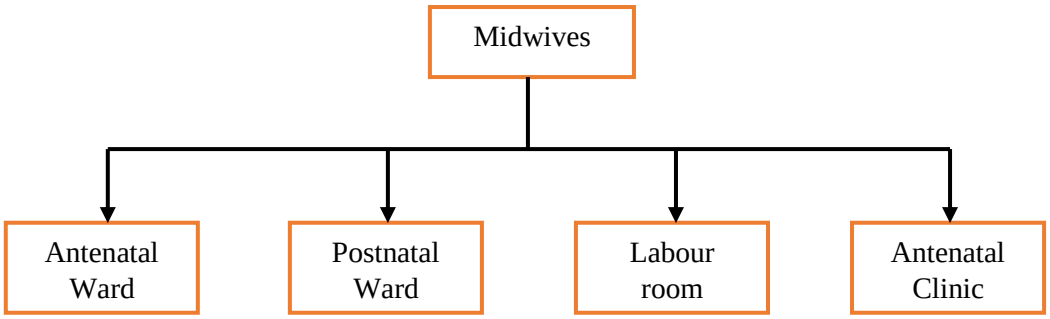

Figure 3.1: Midwives' placement work in Hospital USM.

The location of the study was the antenatal ward, postnatal ward, labour room, and antenatal clinic in Hospital USM, Jalan Raja Perempuan Zainab 2, 16150, Kubang Kerian. The location was selected because Hospital USM was known as a teaching and referral hospital that excels in quality services and the latest technology. Apart from that, it was perfect to be done where midwives were available and achievable to be approached. This study was conducted from January to March 2021.

3.4 Sampling Plan

This subtopic described and explained specifically the criteria of sample size, calculation of sample size, and sampling method.

3.4.1 Sample Criteria

Considering in selecting the participants:

a) Inclusion criteria:

- Qualified midwives.
- Midwives who have been working in antenatal ward, postnatal ward, labour room, and antenatal clinic in Hospital USM during this study period.

b) Exclusion criteria:

- Decline to participate in this study.
- Midwives who were on personal leave or not around during the time frame of collection the participants.
- Medical staff and nursing students.

3.4.2 Sample Size Estimation

The sample size estimation was calculated for each objective. In this study, the first objective was determined by using single proportion formula.

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

Whereby,

n = sample size

Z = value representing desired confidence level

Δ = precision (value from 1-0; i.e. %)

p = anticipated population proportion

The parameter in this study are as follows:

Z = 1.96

Δ = 0.05

p = 0.013 from (Purnami, Suwondo, Sawitri, Sumarni, Hadisaputro & Lazuardi, 2019)

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

$= \left(\frac{1.96}{0.05}\right)^2 (0.013)\,(1-0.013)$

$= 19.7$

$= 20$

The minimal sample size was 20 and after considering 10% drop out, the calculation sample size was:

n = 20 + 10% drop out

n = 20 + 2

n = 22 midwives in Hospital USM.

The sample size for the second objective was determined by using the single proportion formula. The parameter in this study are as follows: