PERCEIVED STRESS, RESILIENCE AND COPING MECHANISM AMONG HEALTHCARES IN EMERGENCY DEPARTMENT HOSPITAL SHAH ALAM DURING COVID-19

ENDA NURAIN BINTI NGAH DEMAN

826693

Thesis Submitted to

School of Business Management College of Business

University Utara Malaysia

In Fulfillment of the Requirement for the

Master of Science (Occupational Safety and Health Management)

Pusat Pengajian Pengurusan Perniagaan
SCHOOL OF BUSINESS MANAGEMENT
Universiti Utara Malaysia

PERAKUAN KERJA KERTAS PENYELIDIKAN
(Certification of Research Paper)

Saya, mengaku bertandatangan, memperakukan bahawa
(I, the undersigned, certified that)
ENDA NURAIN BINTI NGAH DEMAN (826693)

Calon untuk Ijazah Sarjana
(Candidate for the degree of)
MASTER OF SCIENCE (OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT)

telah mengemukakan kertas penyelidikan yang bertajuk
(has presented his/her research paper of the following title)

PERCEIVED STRESS, RESILIENCE AND COPING MECHANISM AMONG HEALTHCARES IN EMERGENCY DEPARTMENT HOSPITAL SHAH ALAM DURING COVID-19

Seperti yang tercatat di muka surat tajuk dan kulit kertas penyelidikan
(as it appears on the title page and front cover of the research paper)

Bahawa kertas penyelidikan tersebut boleh diterima dari segi bentuk serta kandungan dan meliputi bidang ilmu dengan memuaskan.
(that the research paper acceptable in the form and content and that a satisfactory knowledge of the field is covered by the research paper).

Nama Penyelia Pertama : **PROF. MADYA DR. MOHD FAIZAL BIN MOHD ISA**
(Name of 1st Supervisor)

Tandatangan :
(Signature)

Nama Penyelia Kedua : **DR. NOOR HAFIZA BT. ZAKARIYA**
(Name of 2nd Supervisor)

Tandatangan :
(Signature)

Tarikh : **28 OGOS 2022**
(Date)

PERMISSION TO USE

I accept that the university library may make this dissertation project paper publicly available for examination in exchange for my presenting it as part of the requirements for a Post Graduate degree from University Utara Malaysia (UUM). I also concur that my supervisor(s) or, in their absence, the dean of the Othman Yeop Abdullah Graduate School of Business, where I completed my project paper, may provide permission for the copying of my project paper in any way, in whole or in part, for scholarly reasons. It is acknowledged that without my written consent, this project paper or any portions of it may not be copied, published, or used for financial advantage. It is also acknowledged that proper credit must be given.

Please contact the following with any requests for permission to reproduce or otherwise use any portions of this dissertation/project paper:

Dean

School of Business Management

University Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

ABSTRACT

This study aims to improve staff functionality when working in emergency department during pandemic Covid-19 by identifying level of stress, resilience and coping mechanism among HCW. It is also aiming to identify demographic relationship between stress, resilience and coping mechanism among HCW for prevention in psychological/mental disorders that can seriously affect day-to-day function and life among staff working in emergency department during pandemic and or any situation respectively. This study was a descriptive survey studies of 160 respondent in emergency department consist of doctors, nurses, medical assistants, healthcare assistants, and ambulance drivers. The data collected from the study are analyzed using IBM SPSS Statistics 23.0. Frequency, t-test and one way ANOVA were performed to accomplish the objective of the study. The results indicated that level of perceived stress, resilience and coping mechanism were at the moderate level. Demographic factors such as categorical of length of services and health status shown significant differences between perceived stress, resilience and coping mechanism. Emergency Department Hospital Shah Alam should consider the demographic factors when implement practices on working environment due to the current situation of workplace.

Keywords: Emergency Department, Perceived Stress, Resilience, Coping Mechanism

ABSTRAK

Kajian ini bertujuan untuk meningkatkan kefungsian mental kakitangan semasa bekerja di jabatan kecemasan semasa pandemik Covid-19 dengan mengenal pasti tahap tekanan, daya tahan dan mekanisme menangani keadaan dalam kalangan HCW. Ia juga bertujuan untuk mengenal pasti hubungan demografi antara tekanan, daya tahan dan mekanisme menangani keadaan di kalangan HCW untuk mencegah gangguan psikologi/mental yang boleh menjejaskan fungsi dan kehidupan seharian secara serius di kalangan kakitangan yang bekerja di jabatan kecemasan semasa pandemik dan atau di dalam sebarang keadaan atau situasi. Kajian ini merupakan kajian tinjauan deskriptif terhadap 160 responden di jabatan kecemasan terdiri daripada doktor, jururawat, pembantu perubatan, pembantu kesihatan dan pemandu ambulans. Soal selidik secra berstruktur telah dibuat dengan menggunakan borang Google untuk mengumpul data daripada responden. Data yang dikumpul daripada kajian dianalisisa dengan menggunakan IBM SPSS Statistics 23.0. Analisis frekunsi, t-test dan ANOVA satu hala digunakan bagi mencapai objektif kajian. Hasil kajian menunjukkan bahawa tekanan, daya tahan dan mekanisme menangani keadaan adalah pada tahap sederhana. Faktor-faktor demografi seperti katogeri tempoh perkhidmatan dan status kesihatan menunjukkan perbezaan mean yang signifikan terhap tekanan, daya tahan dan mekanisme menanganinya. Oleh itu, Jabatan Kecemasan Hospital Shah Alam perlu mengambilkira faktor demografi dalm membentuk amalan di tempat kerja sejajar dengan situasi semasa persekitaran kerja.

Kata kunci: Jabatan Kecemasan, Tahap Tekanan, Daya Tahan dan Mekanisma Menangani

ACKNOWLEDGEMENT

I would like to express my profound appreciation to Assoc. Prof. Dr. Mohd Faizal Bin Mohd Isa for agreeing to serve as my supervisor and advisor during this study process. My sincere gratitude and appreciation are also extended to Associate Professors Dr. Fadzli Shah Bin Abd Aziz and Dr. Wan Shakizah Binti Wan Mohd Noor for their expertise and direction during the preparation and submission of this research paper. Without their suggestions and persistent criticism, this thesis could not have been successfully finished.

In particular, I would like to thank my cherished mother, Mrs. Salamiah Binti Abdul Mutalib, my devoted husband, Mr. Bahtiar Bin Ramli, and my two devoted children, Muhammad Adwa and Nur Aina Najwa, for their unending tolerance, unwavering support, and understanding as this thesis was developed over the course of a challenging and tiring journey.

I also want to express my profound gratitude to Datin Dr. Ranjini A/P Sivaganabalan, my head of department in the emergency and trauma department at the hospital in Shah Alam, who granted me the go-ahead to carry out this study. Additionally, I want to thank Dr. Siti Nurhafizah Binti Saharudin from the CRC Unit at the Hospital Shah Alam for her advice and assistance in keeping my journey in research on track. Finally, I would like to conclude my sincere and unwavering gratitude to all of my study partners, additional lecturers in the School of Business Management, UUM staff members, and anyone else who helped contributing ideas and imparting knowledge, not to mention everyone who helped with the preparation and submission of this research paper.

TABLE OF CONTENTS

LIST OF TABLE

LIST OF FIGURE

LIST OF ABBREVIATIONS

HCW	Healthcare Workers
ABM	Anggaran Belanjawan Mengurus
PPE	Personal Protective Equipment's
EMR	Eastern Mediterranean Region
SEAR	South-East Asian Region
WHO	World Health Organization
MCO	Movement Control Order
OECD	Organization For Economic Co-Operation And Development's
ED	Emergency Department
COVID-19	Coronavirus Disease
SARS-CoV-2	Severe Acute Respiratory Syndrome
SARI	Severe Acute Respiratory Infections
ACEM	Australian College of Emergency Medicine
EMTS	Emergency Medicine Trauma Services
SLR	Systematic Literature Review

CHAPTER 1

1.1 INTRODUCTION

Numerous research show that the main contributing factor to the covid-19 epidemic in Malaysia is burnout among healthcare staff. The main contributors are personality, working conditions, and patient-related burnout that led to psychological illnesses. Direct involvement in COVID-19 screening or treatment, having a medical condition, and less psychological support at work also related with the situations. The welfare of these healthcare workers was abandoned during the outbreak of the pandemic covid-19. The main focus was patients and treatment. Without fully immunize, the spread of the virus might put a strain on the medical staff (HCW). Along with the increased risk of infection brought on by patient care and the absence of personal protective equipment (PPE), healthcare workers (HCW) also worry about spreading the virus to their families and deal with feelings of guilt regarding their patients and family members. (Roslan and others, 2021)

All these questions played in their mind causing their performance to decrease and proper treatment to patients cannot be given. Miraculously they still continue their daily life by coming to work and giving their best to treat all the patients. What are the factors driven these healthcare workers to continue contributing for their services and yet still struggling in their life? What is the mechanism of acceptance that they practice to be able to survive in their job? As for all the above reason is why researcher aim to find the mechanism in perceive stress, resilience and coping mechanism among the medical personnel working in the emergency department at Shah Alam Hospital during the COVID-19 outbreak.

1.2 BACKGROUND OF STUDY

The Comprehensive Mental Health Action Plan's goals and targets can be measured globally through the Mental Health Atlas, which serves as a worldwide framework for doing so. Mental Health ATLAS 2020 reports that a total of 171 of WHO's 194 Member States (88%) were able to complete the Atlas questionnaire at least partially in 2020, and that the participation or submission rate of Member States was at least 73% in all WHO regions. The Eastern Mediterranean region (EMR) had the greatest submission rate (95%) and the South-East Asian region (SEAR) had the lowest submission rate (73%) accordingly. (World Health Organization, Mental Health Atlas 2020, Geneva, 2021). This demonstrates that mental illness affects people not just in Malaysia but elsewhere.

On January 25, 2020, a case of COVID-19 was confirmed in Malaysia involving Chinese tourists who had travelled from Singapore to Johor. Although the outbreak was initially contained to a few imported cases, in March 2020, multiple local clusters surfaced (Sipalan, Joseph; Holmes, & Sam., 2020) At that time, the Tabligh religious gathering in Kuala Lumpur was linked to the greatest cluster, which significantly increased local cases and exported cases to nearby nations. By the end of March 2020, every state and federal territory in the nation had reported having confirmed cases of COVID-19 infection, which had grown from less than 30 active cases to more than 2,000 active cases.

Every person in the world has been significantly impacted by the COVID-19 epidemic, and Malaysians are no exception. Some people are more prone to mental health issues, such as depression, especially when they are under a lot of stress and

are cut off from their social and support networks. Suicidal behavior may worsen if this depression is not appropriately diagnosed and treated. According to information from the Royal Malaysian Police, there were 631 suicide incidents registered in 2020 as opposed to 609 occurrences in 2019. There have been 336 suicide cases recorded to the Royal Malaysian Police as of March 2021.

The enormous load of disease and mortality has compromised operations of healthcare facilities globally as well as the physical, mental, and financial well being of HCWs during this developing global health care crisis and dire time of need. Along with post-traumatic stress disorder and other mental, physical, emotional, and spiritual issues, HCWs must deal with dread of illness, mortality, and the possibility of passing COVID-19 to their families (Chesak et al., 2020) "*We have put our healthcare personnel in an impossible scenario of having to make life-or-death decisions while working under great pressure*" according to Greenberg, N. et al.,(2020).

Resilience is an increasingly acknowledged stress-reduction protective factor and refers to one's capacity to recover from hardship and see it as a chance for personal progress. (Southwick S.M et al., 2014) Individual, organizational, and social factors all have an impact on the resilience of HCWs. Addressing problems at the organizational level is essential, including making significant structural changes in the workplace. (West, CP et al., 2016)

In order to educate best practices for enabling HCWs to cope and maximize their well-being, especially during adversity, it is also crucial to determine the specific

characteristics that contribute to resilience. An association between stress, burnout, and other well-being indicators among HCWs and non-productive coping has been found in earlier studies. (McGarry, S, Girdler, S, McDonald, A, et al., 2013) Recent research conducted during the COVID-19 pandemic has revealed a direct link between the stress, anxiety, and resilience experienced by Israeli physicians during the pandemic and the pandemic's linked stressors. (Mosheva, M, Hertz-Palmor, N, Dorman Ilan, S, et al., 2020)

The purpose of this study is to assess the level of stress, resilience and ability to cope among HCWs at emergency department during covid-19 pandemic in Shah Alam Hospital by using validated assessment scales during the initial stages of the pandemic, utilizing validated assessment scales, and to determine the findings.

1.3 PROBLEM STATEMENT

1.3.1 Organization factors

Categorical of Emergency Departments (General versus District)

By utilizing previously known input, throughput, and output parameters, it is possible to prevent ED congestion even during extreme and rapidly changing situations. One important element was the shift in ED working practices, which focused more on competency, less on tests, and quicker clinical admission decisions. A quick admission to inpatient care was made possible by the decrease in bed occupancy in emergency wards, which was another significant determinant (af Ugglas et al., 2020) In practically every hospital in Malaysia, there was a wide range of emergency and trauma care services accessible. Although several of the larger

public hospitals had highly specialized emergency and trauma departments, other smaller district and private hospitals had 24-hour center that served a variety of purposes.

Ratio of staffing allocated to general hospital and district hospital

In a normal situation, ratio staff to patient is determine via the size of the hospital. The bigger the hospital the more staff they will get according to the Anggaran Belanjawan Mengurus (ABM8). During recent pandemic covid-19, there was a severe staffing constraint. Patients was overflowing and ratio to staff was severely compromised.

In accordance with the Prevention and Control of Infectious Diseases Act of 1988 and the Police Act of 1967, the Malaysian government took the unprecedented and highly successful step of adopting the Movement Control Order (MCO) in March 2020. Our strong and persistent public health system, which actively screens for, identifies, and isolates all index cases, further supports this. The overall result was not only a reasonably low case and fatality rate, but also a great deal of relief for hospital staff who avoided a rush in sick patients and the depletion of available resources. (Ahmad and Mohammed., 2020)

To reduce the possibility of undiagnosed index cases spreading to healthcare workers (HCW) and other patients visiting hospital facilities, healthcare providers must improve their vigilance when the MCO was gradually lifted (Mohamad & Ahmad, 2020)

Total of Patients Visiting Emergency Departments

Due to the world's ageing population, the demand for healthcare services is growing tremendously, which is causing the expense of healthcare to rise very quickly. The front lines of the healthcare system are the emergency rooms of hospitals, and they also play a crucial function in providing patients with an effective and high-quality response. The demand for ED services exceeds the capacity to deliver care in a fair length of time as a result of overcrowding at the emergency rooms brought on by rising demand. This has prompted nations to reevaluate their health policies in an effort to improve the effectiveness of their healthcare systems generally and of their emergency rooms specifically.

Since a few years ago, Malaysia has seen an increase in the number of emergency department visits, which has caused congestion in all zones. Particularly in tertiary institutions, it is not uncommon to see patient counts that are more than twice the actual capacity of each zone (during peak hours). In 2018, the Auditor-General found that between 5.7 and 95.6% of tertiary hospitals had more emergency room patients than they could handle.

In addition to compromising the patients' privacy because their beds must be placed next to one another, this circumstance also results in an inefficient staff-to-patient ratio. More perilously, maintaining a social distance becomes nearly difficult, and there is a chance of contracting the illness inside the ED. Additionally, this is in stark contrast to the WHO's Infection Prevention and Control Programmed, which urges for enough bed distance and staffing levels in emergency rooms.

Types of Patients Visiting Emergency Departments

Treatment of extremely ill and injured patients, which serves as a referral location for other doctors when they determine that patient stabilization and hospital admission are necessary, is the ED's most visible and crucial role in the community. These patients may receive referrals from ambulatory clinics, hospitals, skilled nursing institutions, home health care agencies, urgent care facilities, and other locations. Although ambulatory clinics can admit patients with simple problems directly to the hospital, they frequently refer patients with complex problems to the emergency department (ED) for stabilization, triage, and an initial diagnostic evaluation prior to admission. The ED also offers a significant amount of unscheduled urgent care, frequently because other parts of the acute care system lack the capacity to provide this care.

Patients are frequently sent to the ED because their clinic is unable to provide prompt care for an urgent issue. (Or an acute exacerbation of a chronic issue) or due to the lack of access to other after-hours treatment options In contrast, people could make an appointment for an urgent disease but still visit the ED because their symptoms get worse before they can be treated. According to the Organization for Economic Co-operation and Development's (OECD) health report 1, with an average annual growth rate of 3.4% in 2016, global healthcare expenditures exhibited the highest rate of growth over the previous seven years, and additional growth is predicted in the near future.

1.3.2 Environmental factors

Pandemic Covid -19

The 2019 coronavirus disease (COVID-19) was initially identified in the province of Hubei in December of that year and spread alarmingly quickly over the world (Wang et al. 2020). The SARS-CoV-2 virus is the infectious disease known as coronavirus disease (COVID-19). The majority of virus-infected individuals will experience a mild to severe respiratory disease and will recover without the need for special care. However, some people will get serious illnesses and need to see a doctor. Serious sickness is more likely to strike older persons and those with underlying medical illnesses including cancer, diabetes, cardiovascular disease, or chronic respiratory diseases. Any age person can contract COVID-19, which can cause serious illness or death (WHO Overview of Coronavirus Disease (Covid-19) 2021).

The COVID-19 pandemic in Malaysia is a component of the ongoing global coronavirus disease pandemic 2019 (COVID-19), which is brought on by coronavirus 2 that causes severe acute respiratory syndrome (SARS-CoV-2). With over 2,400,000 verified COVID-19 cases, over 60,000 ongoing cases, and over 29,100 fatalities as of 4 November 2021, the nation is now ranked third in Southeast Asia for COVID-19 cases and fatalities, behind Indonesia and the Philippines.

Director-General of Health Noor Hisham Abdullah is in charge of the medical reaction and readiness to the outbreak in Malaysia under the Health Ministry of three successive governments. Following a World Health Organization (WHO) report on a late-December 2019 outbreak of "pneumonia of unknown etiology" in the city of Wuhan in Hubei, China, preparations were reportedly started as early as 6 January 2020 to stockpile equipment, discover and monitor cases, and treat COVID-19

patients.

The coronavirus disease 2019 (COVID19) pandemic will stretch hospital resources all over the world. Emergency departments' (EDs) readiness for patient triage and staff safety is of the utmost significance during this outbreak, with a rise in COVID-19 suspected cases and worry among the staff. Since there is a heavy patient flow in the ED, it is a vulnerable location of the hospital. In order to separate non-COVID-19 cases from patients who are suspected of having COVID-19, a modified triage and treatment plan is required due to the difficulty of the COVID-19 outbreak.

New Norms in emergency departments

Many studies have been done on psychological disorders/mental disorders that can seriously affect day-to-day function and life among staff working in emergency department, for that reason the researcher wants to identify what factors that can cause psychological adaptation to occur and what coping methods used so that staff can adapt to the current situation. There are two key issues that must be urgently resolved since they are contributing to the dangerous scenario. The first is the scarcity of isolation rooms, and the second is the lengthy boarding times for patients in the emergency department. It could be necessary to stabilize some patients with severe acute respiratory infections (SARI) right away in the emergency room.

The management and treatment of patients will take place in the common area because there are very few or no isolation rooms with negative air pressure available. In some hospitals with designated isolation rooms in the ED, the presence of many comparable patients at once often results in some patients being managed like other

non-infectious patients due to insufficient resources and space.

Despite the use of complete personal protective equipment (PPE), the danger of exposure still exists when patients are managed in non-isolated locations and spend longer than necessary in the emergency department (ED) due to access barriers. The integrated ventilation system between zones and offices in the ED only makes the issue worse. As a result, both healthcare professionals and other patients run the danger of getting sick.

The management of the hospital must deal with this problem. Among the methods being considered by certain ED and hospital management include a faster admission system, adherence to lean healthcare project concepts, and development and empowerment of hospital admission management unit. In order to improve the emergency medicine specialist services offered by private healthcare systems and ease the burden of access restrictions in public hospitals, strategic partnerships with private healthcare systems are also being considered.

1.4 RESEARCH QUESTIONS

Based on the problems discussed above, the central question for this study would be "What level of control in variables factors such as stress, resilience and coping can be identified among HCWs working in the emergency department at Shah Alam hospital during the covid-19 pandemic." Specifically,

1.4.1 What is the level of perceived stress, resilience and coping mechanism

among HCWs working in the emergency departmental Shah Alam hospital during the covid-19 pandemic?

1.4.2 Are there any differences between demographic factors such as categorical of age, length of service, job position and educational level with perceived stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic?

1.5 RESEARCH OBJECTIVES

Generally, this study aims to examine relationship in demographic factors and its influences towards level of stress, resilience and coping mechanism among HCWs. Therefore, to answer the research questions posted above, the following research objectives were formulated:

1.5.1 To determine the relationship between level of stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic; and

1.5.2 To identify the mean differences between demographic factors such as categorical of age, length of service, job position and educational level with perceived stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic.

1.6 SIGNIFICANCE OF STUDY

This study's findings further reveal how different groups of individuals such as management of hospital, healthcare workers and academic can be strengthened and improving working environment practices and organizational performance.

1.6.1 Healthcare Workers

The healthcare workers can do self-assessment on their level of understanding regarding level of stress, resilience and coping mechanism; such that the study will provide a means of verification resilience or coping methods or indicate a need of improvement, depending upon whether the results will confirm a high or low percentage and how this level of understanding will affect their daily life.

1.6.2 The Researcher

The researchers will be able to translate theory-based research into a real working setting through this project.

1.6.3 The Readers

This will become the readers' source of information about the impact of perceive stress, resilience and coping mechanism among HCWs working in emergency departments.

1.6.4 The Future Researchers

This study will serve as additional information and guide to all healthcare workers working in emergency departments.

1.6.5 The Government Agencies

Government agencies concerned, particularly the Ministry of Health Malaysia, will have a general idea regarding the impact of perceive stress, resilience and coping mechanism that can be used in daily life of healthcare workers working in emergency departments. The results can serve as a basis for all government hospitals.

1.7 SCOPE OF STUDY

The purpose of this study is to identify level of perceived stress, resilience and coping mechanism for usage in emergency rooms so that medical personnel can adjust to any pandemic event. Apart from that, the study also aims to determine whether demographic factors of age, education level, position, years of service, life status and responsibilities in life mediates the relationship between stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic.

For this study, which was descriptive, data were collected from emergency department in Shah Alam Hospital involving 201 healthcare workers, specifically doctors, nurses, assistant medical officer, health care assistant and ambulance drivers who will be contacted during the study upon granted permission from hospital director and head of department Emergency Department via official letter through email accounts.

1.8 DEFINITION OF KEY TERMS

Perceive Stress: “The degree to which situations in one’s life over the past month are appraised as stressful” (Cohen, Kamarck, & Mermelstein, 1983, p. 385).

Resilience: The process and outcome of successfully adapting to difficult or challenging life experiences, especially through mental, emotional, and behavioral flexibility and adjustment to external and internal demands. (https://www.apa.org/)

Coping: Is defined as a person’s constantly changing cognitive and behavioral efforts to manage specific external and/or internal demands considered taxing or exceeding a person’s resources (Lazarus, R.S.and Folkman, S., 1984)

1.9 ORGANIZATION OF THESIS

This study is divided into five separate portions. The first chapter serves as an introduction. The goal of the chapter is to define the project's objectives and the guidelines that will direct the projects to a successful end. It includes the introduction to the chapter, background information on the study, a statement of the research problem, research objectives, and research questions, as well as information about the significance and scope of the study, the project's structure, and a summary of the chapter.

The chapter that reviews the literature comes in at number two. By guaranteeing a thorough comprehension of the concepts and giving the study's assumptions a foundation, it creates the theoretical framework for the project. The chapter

introduction, definitions of the variables, theoretical framework, and formulation of the hypotheses are covered conceptual framework and chapter summary.

The methods chapter is in the third chapter. It provides a description of the research methodology so that users can evaluate the validity and dependability of the findings in light of those methodologies. It is divided into the following sections: chapter introduction, design, demographic and sampling methods, research instrument, research procedures, data analysis methods, ethical aspects of the study, and chapter summary.

The study's findings are presented in the fourth chapter. It covers the chapter's introduction, reliability analysis findings, demographic profile findings, descriptive statistics findings, inferential statistics findings, and a chapter summary. The discussion and conclusions chapter comes at the end. It covers the chapter's introduction, explanation of the results, study conclusions, and ramifications.

1.10 CHAPTER SUMMARY

This chapter gave a brief overview of the ongoing research project. The chapter has discussed the backdrop of the study, the formulation of the research problem, the research objectives, the research questions, the significance of the study, the scope of the investigation, the definition of key terminology, and the project's structure.

CHAPTER TWO

LITERATURE REVIEW

2.1 INTRODUCTION

Outbreak of emerging infectious disease occur once in a “blue moon”. When they do come, they can trigger an intense, international healthcare response, with thousands of healthcare workers finding themselves at the front line battling the outbreak. Fear of not knowing or contacting COVID-19 was one of the hardest things for healthcare personnel to deal with when the world declared it to be a pandemic on March 11, 2020. (Cabarkapa et al., 2020). Other factors that are known to contribute to the exhaustion and decline in mental health of healthcare workers include the frequent growth of COVID-19 cases and deaths due to the disease, a lack of resources (material and human), generalized and ineffective treatments, as well as an increase in work demands (Mohd Fauzi et al., 2020)

The emergency department (ED) in hospitals is one of the locations with such significant exposure. As it stands, the 'access block' and congestion are the troublesome concerns in the ED throughout the last years, especially in Klang Valleys and other important cities, before the pandemic hits Malaysia. Access block, as defined by the Australian College of Emergency Medicine (ACEM), is "the situation where patients are unable to access appropriate beds within a reasonable amount of time, and overcrowding refers to situation where functions of the ED are impeded by the number of patients waiting to be seen by doctors, undergoing assessment and treatment, or waiting departure, exceeding the physical or staffing capacity of the department" (Forero et al., 2011)

Emergency departments are a specialist sector that provide clinical care for a wide range of acute medical infirmities, illnesses, or injuries, according to the Emergency Medicine Trauma Services (EMTS) criteria. This entails the delivery of essential emergency medical treatment, which includes interventions that can save lives as well as diagnostic, resuscitation, and stabilization components. Therefore, there is no rule prohibiting patients from entering the emergency department or closing the doors. All will be welcomed.

The MOH Hospital in the state of Selangor has 8 specialist hospitals and 4 non - specialist hospitals. Shah Alam Hospital were amongst the specialist hospitals. The size of a hospital also will determine the capacity number of patients that can be accommodated during a pandemic and non- pandemic situation. Whilst the number of staff on duty is determined through the Anggaran Belanjawan Mengurus (ABM8) in each hospital. Even though Shah Alam Hospital is a specialist hospital it also has been categorized as District Hospital with the capacity of 25 beds only in the emergency departments.

During the covid-19 pandemic, Shah Alam Hospital, Emergency and Trauma Department was severely injured with staffing. Patients was overflowing like a waterfall nonstop with diagnosed of SARI TRO COVID and COVID-19 positive. The Bed Occupancy Rate Percentage (BOR%) for Shah Alam Hospital was shooting like a rocket, when BOR% always archived more than 100%, demonstrating a high volume of patient in the hospital. The hospital manages the staff internally as no external help received. According to data collection of patients coming to emergency

department in Shah Alam Hospital approximately 8770.5 patients visited monthly from Jan to July 2020. (Data extracted from admission to ED HSAS)

In a normal situation, ratio staff to patient is determine via the size of the hospital. The bigger the hospital the more staff they will get according to the Anggaran Belanjawan Mengurus (ABM8). During recent pandemic covid-19, there was a severe staffing constraint. Patients was overflowing and ratio to staff was severely compromise. The World Health Organization (WHO) predicted that the greatest health catastrophe in recent history would soon befall the entire planet. Over 12 million cases were reported globally, and there were close to 600,000 fatalities. Despite the fact that Malaysia has done a remarkable job of keeping the disease under control, with only 8500 cases and a case fatality rate of 1.42% (as opposed to 7% globally), we are far from announcing complete triumph in the fight against the illness (Mohamad & Ahmad, 2020)

2.2 PERCEIVE STRESS

The transactional model of stress states that a person's interaction with their environment results in psychological stress. The perceived stress level increases when environmental demands are greater than personal resources, particularly in situations that are important to the individual. (Aldwin, 2011, pp. 16–17). The degree to which one perceives stressful events to be stressful depends on the event's predictability, controllability, and overload sources. (Cohen et al., 1983)

It was discovered that during the epidemic, the media was cited as a significant factor in escalating the anxiety and stress levels of the general public because the veracity

of the updates or news given could not be verified. The results recommend the beginning of extensive and protracted public awareness campaigns to enhance public knowledge, focusing on modes of transmission and situation-specific preventive measures in addition to addressing mistrust, myths, and misconceptions. To increase frontline HCWs' resilience and capacity to respond to the pandemic, health systems strengthening should be supported by giving them crucial information about the services for mental health that are readily accessible. (K. Munawar, F.R. Choudhry., 2020)

When the covid-19 pandemic struck, the whole world was shocked by its presence. All parties, especially the Malaysian ministry of health, have worked hard to ensure that the pandemic is under control. The hospital is on high alert and vigilant and all staff need to be prepared for any eventuality. In Shah Alam's emergency department, there are 25 beds only available with constrain of staff it is inadequate whilst the admission of patients in the department is often overflowing with covid and non-covid patients.

From the start, the virus and its associated disease posed a difficult challenge for healthcare professionals (HCWs), as a large number of patients flooded hospitals at once, causing increased workload and physical exhaustion, in contrast to the limited information available about the virus itself (transmission, symptoms, protection, immunity, hospitalization criteria, recovery, etc.), which forced HCWs to make morally challenging decisions regarding the rationing of care. Patients who come in with respiratory problems can be expected to be infected with covid-19 but for non-covid patients it is difficult and needs to undergo SALIVA/RTK/PCR screening

before further treatment can be given. With always "unknown status" it has made healthcare workers worried about their safety and that of their families. The effects on covid-19 sufferers are devastating which can lead to death. Many healthcare workers have undergone stress due to fear of unknown outcome and burnout due to understaffed.

2.2.1 The Influence of demographic factors with stress among HCWs in emergency department

Age in demographic factors influencing stress

According to Norful A.A. et al., (2O21), the COVID-19 practise guidelines' ambiguity, a lack of resources, such as PPEs, and the danger of spreading the disease to family members at home were the main sources of stress. The main effects of stress on participants included anxiety, physical weariness, and sleep problems. A total of 55 healthcare professionals were surveyed, including RNs (n = 21), PCTs (n = 13), doctors (n = 12), respiratory therapists (n = 5) and pharmacists (n = 4). The interviews lasted roughly 20 minutes. African Americans made up 49% of the sample, and 75% of the participants were female. More than half of the participants were under 40 and employed at emergency rooms or intensive care units.

Gender in demographic factors influencing stress

In another study, Huang et al., (2021) undertook a study to determine Gender Differences in Psychological and Behavioural Responses of Infected and Uninfected Health-Care Workers during the Early COVID-19 Outbreak. The results was female HCWs were more likely to give greater attention, adjusted OR:1.92 (95%CI 1.14–

3.23) in total HCWs. Higher proportion of anxiety was observed in female HCWs, adjusted OR:3.14 (95%CI 1.98–4.99) for total HCWs, 4.32(95%CI 1.32–14.15) for infected HCWs and 2.97 (1.78, 4.95) for uninfected HCWs. Proportion of pessimism, fear, full of fighting spirit, and optimism were low, and no gender differences were observed.

During a later outbreak, a majority of HCWs reported being very familiar with eight protective measures. After training, a proportion of high self-evaluation in hand hygiene, wearing gloves, and surgical masks increased independently in female HCWs, and adjusted ORs were 3.07 (95% CI 1.57–5.99), 2.37 (95% CI 1.26–4.49), and 1.92 (95% CI 1.02–3.62), respectively. Infection status amplified gender difference in anxiety, hand hygiene, and glove wearing. The study also found that Female HCWs perceived the outbreak seriously, effective emotional and psychological wellness should be targeted at female HCWs preferentially, and male HCWs should be encouraged to express their feelings and be further trained.

Marital status in demographic factors influencing stress

The exposure to, occurrence of, and perceived risks of physical hazards, violence, burnout, and particularly COVID-19 are high among emergency room doctors, according to a second study. Rücker et al (2021) this was corroborated by additional studies that showed clinical nurses in Taiwan's NHI system reported varying degrees of stress, depression, and intention to quit. Additionally, this study revealed that tenure and marital status are important indicators of stress, sadness, and intention to leave. Despite the fact that there have only been a few studies among Malaysian healthcare professionals, the following hypothesis is supported by these studies in

other nations;

H1: Stress among HCWs are significantly correlated with demographic factors

2.3 RESILIENCE

All healthcare workers working in the emergency department had struggled to give treatment to covid-19 patients during the pandemic. They have tried to adapt to the environment to keep themselves and patients safe. Every standard operating procedure is followed so that they will not be infected by covid-19. All problems that arise among healthcare workers are addressed by management and by team works. After almost 2 years of covid-19 with us, over time the healthcare workers have created mental and physical resilience so that they can adapt to the pandemic situation and live day by day life in a new norm.

According to Gheshlagh RG, Sayehmiri K, and Ebadi A, et al., 2017 in dealing with outbreaks, the ability to adapt and overcome existing difficulties is needed. This is known as resilience. A study showed that resilience can act as a protective factor for mental illness, such as anxiety and depression whilst Mahmood and Ghaffar (2014) explain that resilience is a good adaptation process in situations of trauma, tragedy, or other stressful events. Resilience is not a personality trait but rather something that involves behavior, thoughts, or actions that anyone can learn. Resilience is the ability of a person in normal circumstances when faced with an event that has the potential to interfere physically and mentally. In this case, resilience is one of the right ways to deal with an adverse event or one that can cause trauma, because resilience is an ability to maintain a stable balance. (Bonanno GA., 2004)

According to Cates et al., (2018) The goal of more recent research on improving HCW resilience has been to teach HCWs how to recognize their jobs, likely stressors, potential reactions, and symptoms, as well as how to create a variety of cognitive and behavioral coping mechanisms. The known randomized controlled studies of preventive therapies to lessen psychological distress in disaster responders have not yet been conducted, nevertheless. In addition, approaches to assist responder families have been largely disregarded (Benedek et al.,(2007)

2.3.1 The Influence of demographic factors with resilience among HCWs in emergency department

Education in demographic factors influencing resilience

Matheson C. et al., (2016) some experts believe that resilience is an aspect that can be developed. Some ways that can be done to increase resilience are through experience, learning, and formal training. (McAllister M., McKinnon J., 2009) In addition, several mechanisms of mature ego defence can increase resilience during a pandemic, including humour, altruism, anticipation, and self-observation. Marcinko D. et al., (2020). According to Duncan D., (2020) the development of resilience needs to be made a priority to prepare healthcare workers to deal with crises and reduce mental health problems in the future.

Gender in demographic factors influencing resilience

Previous study on Demographic predictors of resilience among nurses at the hospitals in Ahvaz during the COVID-19 pandemic was stated that on average, women were reported to have a significantly lower resilience than men during the

COVID-19 pandemic disaster. According to the study results, education and work experience were determined as the contributing factors for resilience. Based on the study findings, to achieve higher resilience in the stressful situation, resilience training programs and increasing knowledge about working at critical. D. Afshari et al., (2020).

H2: Resilience among HCWs are significantly correlated with demographic factors

2.4 COPING MECHANISM

To adapt to the covid-19 pandemic, healthcare workers need to adapt to new norms. Having the strength and resilience with a suitable coping mechanism will able to improve staff functionality when working in the emergency department during pandemic in the future. Participants put various coping mechanisms into practice and offered advice on how to handle the stress and worry brought on by the COVID-19 epidemic. The public's tension and anxiety levels have reportedly increased as a result of the media. The most popular coping mechanisms were their commitment to serving their country and the human race through their religious practices (Munawar & Choudhry, 2021)

In order to improve resilience and coping among all HCWs, it is crucial to have effective methods and tactics in place for the early detection and reduction of distress across job categories in the healthcare industry. To address the complex causes of HCW stress, resilience, and coping, interventions should be adopted at the individual, organizational, and societal levels. (Croghan et al., 2021)

According to Kar et al., (2021) The typical coping mechanisms were activities, humor, expressing emotions, turning to faith, having hope, avoiding thinking, problem-solving, etc. Additionally, sociodemographic information regarding the area of residence, age, gender, education, occupation, marital status, and economic status was gathered. They were able to overcome their concern thanks to positive attitudes at work, the clinical improvement of their afflicted coworkers, and the cessation of disease transmission among HCWs after implementing stringent protective measures.

They valued the hospital administration's appreciation of their efforts and anticipated that comparable appreciation, advice on infection control, and equipment would encourage them to labor during future epidemics.(Khalid et al., 2016) Howlett et al., (2015) stated that the well-being of ED staff and patient care may both be enhanced by teaching them to adopt a coping style that is more task-oriented and less emotion-oriented. Therefore, organizations require further study on interventions like coping strategies to lower the likelihood of burnout and its unfavorable effects.

Recent studies provide evidence of unprecedented psychological impact of COVID 19 on healthcare providers engaged in the diagnosis, treatment, and care for patients with COVID-19 due to restrictions and the work under stressful conditions (lack of hospital facilities, fear of contagion and spreading the virus, working over-time, wearing personal protection equipment— PPE-, restraining from food, drinks, and the toilet during working hours due to PPE, and more) while managing critical issues daily (Barello et al., 2020; Gupta et al., 2020; Kalaitzaki et al., 2020; Lai et al., 2020).

2.4.1 The Influence of demographic factors with coping among HCWs in emergency department

Marital status in demographic factors influencing coping

Since the beginning of March 2020, COVID-19 has been a global threat. The rapid increase in COVID-19 morbidity and death put a lot of strain on the community and the medical staff, who had to deal with providing care for COVID-19 patients (Wu et al., 2020). Most studies on coping have used an individualistic perspective (Afifi et al., 2006). The focus of coping research is now moving away from seeing it as essentially an individual phenomenon and toward one that is more interdependent. Systems theory claims that because coping occurs in an interpersonal setting, it is challenging to separate and study individual coping from that of family members (Lyons et al., 1998). Additionally, interpersonal relationships are necessary for coping because most life pressures are interpersonal (Monnier and Hobfoll, 1997).

Life Status in demographic factors influencing coping

In general, respondents favoured logical coping methods, like exercise and housework, and help from their employers, like time off and financial support, over logical coping mechanisms or emotional or relational techniques. The focus on practical coping strategies, such exercise and cleaning, proved to be predominant among the coping mechanisms employed by healthcare professionals. Some respondents employed emotional stress management techniques including meditation and talking to friends and family. Even when describing the kind of support they valued or desired from their employers, respondents frequently highlighted more effective assistance, such as time off, financial incentives, and lessened red tape.

(Majumder et al., 2021)

Gender in demographic factors influencing coping

These results are consistent with those of Geltman et al. (2000), who investigated disaster-exposed communities and discovered that people frequently go into "survival mode," favouring material assistance above psychological support. This might be related to the idea that solutions should be based on a distinct hierarchy of needs, using Maslow's model, with safety and survival as the highest priorities (Maslow, 1943). However, it should be emphasised that not all respondents showed the same preferences for support, and it appears that some demographic factors were at play. For instance, compared to older or male respondents, female and younger healthcare workers were more likely to turn to their support networks as a way to deal with stress. They also expressed a wish for time off more frequently.

Age in demographic factors influencing coping

According to the contextual hypothesis put forth by Folkman and Lazarus in 1980, the level of stress that adults experience varies depending on their unique living contexts. As a result, young, middle-aged, and elderly persons have variable levels of exposure to various types of stresses. Of course, there are a wide variety of stressors that people encounter on a daily basis. According to research, adults of all ages most typically report interpersonal disputes as daily inconveniences (Almeida, 2005) Erikson's Psychosocial Theory (Erikson, 1982) states that people of different ages experience various life experiences and move through a number of stages in their psychosocial development by successfully resolving significant socioemotional problems at each level. According to the contextual theory of ageing put forward by

Folkman and Lazarus in 1980, as people age, they are exposed to a variety of stresses that affect their coping mechanisms and health consequences.

H3: Coping mechanism among HCWs are significantly correlated with demographic factors

2.5 THEORETICAL FRAMEWORK

2.5.1 Piaget's Theory of Cognitive Development

Organization and adaptability are two biological tendencies upon which Piaget based his hypothesis. Humans are wired to organize their experiences in to logical sets of meanings. Organization establishes the connections between events. The human thought process is more effective when knowledge and experiences are organized. Having a tendency to adapt to your surroundings is called adaptation. Humans connect their previous experiences with new experiences, which may or may not fit together. Assimilation and accommodation are two strategies that the individual employs in an effort to adapt, according to Piaget. As a person adapts to their surroundings in a more complicated way throughout time, they engage both of these processes. Utilizing or altering the environment to integrate it into preexisting cognitive structures is the process of assimilation. To adapt cognitive structures to anything from the environment is the process of accommodation. Throughout life, both methods are applied concurrently and alternately.

2.5.2 Darwin's Theory of Natural Selection

As an explanation for adaptation and speciation, Charles Darwin outlined his theory of evolution through natural selection. Natural selection is the "principle by which

any tiny change [of a characteristic], if useful, is retained," according to his definition. The idea was straightforward but effective: those who are most adapted to their settings had a higher chance of surviving and procreating. There will inevitably be a selection of people with the most favorable variations as long as there is some variation between them and that variation is heritable.

The process through which populations of living things adapt and change is known as natural selection. A population's members are naturally varied, which means that they are all distinctive in some ways. This variety indicates that some people have characteristics that are more environment-appropriate than others. People that possess advantageous qualities, or adapted traits, are more likely to live and procreate. The adaptable qualities are subsequently passed on to the next generation by these people. These beneficial characteristics spread across the population over time. Favorable features are passed down across generations as a result of natural selection.

2.5.3 Amartya Sen's Capability Theory Approach

A normative approach to human wellbeing, the capability approach (also known as the capacities approach) focuses on a person's real ability to accomplish their well-being rather than their simple right or freedom to do so. Amartya Sen and Martha Nussbaum's method combines a variety of concepts that were either overlooked by (or poorly expressed in) earlier standard approaches to the economics of welfare. The capabilities approach places a strong emphasis on what people can do (i.e., capable of) the simplest definition of functioning is "beings and doings."

Living can therefore be viewed as a collection of connected functions. Functionalities are essentially the states and actions that make up an individual's being. Simple things like being healthy, having a good job, and being safe are examples of functioning. More sophisticated states like being joyful, having self-respect, and being peaceful are examples of functioning. Furthermore, Amartya Sen argues that in order to fully comprehend the capability approach, functioning must be understood; capability is viewed as a reflection of the flexibility to engage in worthwhile functioning.

To put it another way, functioning is what the approach refers to as the topics of the capabilities: what we are capable of, wish to be capable of, or should be capable of being and/or doing. As a result, the chosen combination of functioning, who they are, and what they accomplish, are all parts of their entire capability set, or the functioning they were able to do. However, functioning can also be thought of in a way that denotes a person's capacities. Therefore, a comprehension of what constitutes functioning is inextricably linked to a comprehension of capabilities, as described by this method.

2.6 CHAPTER SUMMARY

In every job and every situation, there will be challenges that need to be overcome. How to overcome it depends on the level of emotional and physical strength of a person. If a person has a strong resilience, then he can adapt according to the circumstances and situations of his/her environment. Otherwise, a person will experience emotional disturbances that can lead to disruption at work and social problems with other co -workers or with his or her own employer. Occupational

adaptation, as defined by Grajo L. and Boisselle A. in 2008, is a term used in occupational therapy to describe the connection between a person's vocation and environment and their environment in reaction to a difficulty in their line of work.

According to the model developed by Schkade and Schultz (1992), occupational adaptation is referred to as an internal, normative process, with occupation acting as a tool for adaptation. According to Schkade J. and McClung M. (2001), successful occupational adaptation entails a person being able to respond expertly and adaptively in the face of a professional challenge, enabling competence in the occupations related to a person's life responsibilities.

Boone AE, George-Paschal LA. (2017); Johansson A, and Bjorklund A. (2006); Lexell EM et al (2011); Walder K, and Molineux M. (2017); Williams S, and Murray C. (2013), described occupational adaptation as a normal, lifelong process, which is cumulative and nonlinear. For example, Lexell EM et al (2011), characterized professional adaptation as a continuous, dynamic process needing a balance between identity and competence. Additionally described are the continual learning opportunities that arise during the occupational adaption process (Ruckser-Scherb R. et al 2013, Flinn NA, & Stube JE., 2010). A successful adaptive reaction to an occupational difficulty is recalled for use in the future, improving the person's coping skills, according to research by Ruckser-Scherb R. et al. (2013) and others.

CHAPTER 3

RESEARCH METHODOLOGY

3.1 INTRODUCTION

In this study, researchers will determine the level of perceived stress, resiliency, and coping strategies and to find out whether there is a correlation between demographic factors with the three variables mentioned among healthcare workers working in emergency department at Shah Alam Hospital. Before this chapter of the study, there were two earlier chapters. The study's introduction chapter was the first chapter. The study's goal and the criteria that will help it get there were outlined in the chapter. The study's literature review component was the second chapter. The chapter's goal was to lay the theoretical groundwork for this investigation.

The study's research methodology is discussed in this current chapter; the research design, population sample, sampling technique, questionnaires design are all covered in this chapter, along with hypotheses, research measurement, data collection techniques, and data analysis techniques. This chapter is concluded with a summary.

3.2 RESEARCH DESIGN

In this study, quantitative research is used. There are two widely used quantitative methods; numeric data collected in a research project can be analyzed quantitatively using statistical tools in two different ways. Descriptive analysis refers to statistically describing, aggregating, and presenting the constructs of interest or associations between these constructs and inferential analysis refers to the statistical testing of hypotheses (theory testing). For this study descriptive analysis will be used. It allows

for data to be presented in a meaningful and understandable way, which, in turn, allows for a simplified interpretation of the data set in question.

3.2.1 Sources of Data

According to Cooper and Schindler (2006), there are two basic sources of data. These informational sources are primary and secondary. Both primary and secondary data are used in the study to address the research issues. Both data sources support the goals and contributed to the development of conclusions and suggestions.

Primary Sources

The different types of data gathering are described; thus, the study selects a questionnaire for quantitative data collection. The study administration technique of using surveys enables the collecting of data from a variety of responses. The volume of data gathered allows for the gathering of sufficient proof to support the study's results. According to Yin (2003), the survey approach enables the collecting of a significant amount of data, which is then evaluated with the use of the proper statistical modules in order to draw conclusions.

Primary data was gathered from healthcare workers specifically doctors, nurses and medical assistant officer, healthcare assistant and ambulance driver working in emergency department randomly selected through purposive sampling. Zikmund (2009) defines primary data as information obtained specifically for a study's main objective. It was easier to grasp and perform direct evaluation of the issue utilizing a survey questionnaire after gathering primary data. For the purpose of this study information was gathered from 201 healthcare workers specifically doctors, nurses,

medical assistant, healthcare assistant and ambulance driver officer working in emergency department in Shah Alam hospital utilizing the survey's form. (Appendix A-C)

Brief Resilience Scale (BRS), Brief Resilience Coping Scale (BRCS), and Perceived Stress Scale (PSS) are three validated resilience, coping, and stress measurement tools that were used in the survey. (Appendix A-C). All items and individual factors measured were adequately discussed under the literature review section of the study. The various dimensions were investigation into the possible causes and effects of psychological adaptation in healthcare workers. A total of 20 questions were construct from three different segment, out of 20 questions, 6 items were placed under resilience factors, 4 items under coping factors and 10 under stress factors

Secondary Sources of Data

Secondary data sources are sources of information that were not initially collected for the study but that in some way contribute to drawing a conclusion. Sekaran (2003) asserts that secondary data sources are obtained from information that is already available. Secondary data for this study was gathered from numerous online databases of journals, books, year projects completed by previous students at the university, and other sources. In order to obtain answers to the study's research questions, secondary data were extremely helpful in the primary data collection process.

Secondary data for this study were also collected from the Public Health Unit and the Psychiatry and Counseling Unit of Shah Alam Hospital in view of any referral

from emergency departments to the respective unit to correlate numbers of staff referred during the pandemic covid from 2019 until 2022.

3.2.3 Unit of Analysis

The level of aggregation of the data gathered during the subsequent data analysis step is referred to as the unit of analysis (Cavana et al., 2001). The unit of analysis in this study is the healthcare workers specifically doctors, nurses, medical assistant, healthcare assistant and ambulance driver working in emergency departments in Shah Alam Hospital. In other words, the unit of analysis is individual. This study has been focused on the level of perceive stress, resilience and coping mechanism. The target respondents in the study were employees of the medical profession who work in the emergency room during pandemics.

3.3 POPULATION FRAME

In essence, the population of a study refers to the overall population, or a full headcount of all the parts the study seeks to reflect. (Sekaran, 2003) clearly defined population ensures that the results and findings apply to the correct category of elements in the society. Considering that the study basically assesses the level of perceive stress, resilience and coping mechanism among healthcare workers so that employer can improve staff functionality when working in emergency department, the population of the study is all healthcare worker specifically doctors, nurse and medical assistant officer, healthcare assistant and ambulance driver.

To achieve the attention of distributing questionnaire in a thorough assessment of the level of perceive stress, resilience and coping mechanism, 201 the healthcare workers

specifically doctors, nurses, medical assistant, healthcare assistant and ambulance driver working in emergency departments in Shah Alam Hospital is the main population under study.

3.4 SAMPLE SIZE

For every inquiry, there is virtually always a requirement to sample respondents due to restricted resources (Saunders et al. 2007). Additionally, because conducting a poll would require a lot of work and time, it would not be practicable to use the entire population. To reflect the replies of the entire population, the term "Sample" refers to a subset of the complete collection of data, also known as the "population" (Denscomble, 2010). "You should be prepared to decide on the characteristics of the respondents once you have determined the technique for collecting your fieldwork data and you have thought about what to ask" (Naoum, 2007).

According to Saunders et al. (2007), the sample size may influence the significant of the variables related in the study. A sample size that is too high may give the impression that a relationship exists that does not, whereas a sample size that is too small may not be representative. All the above mentioned were considered in this study, therefore the sample size of the study are 160 staff in Emergency Department Hospital Shah Alam. The inclusion criteria for the population and sample are the healthcare workers must directly involve clinical work in the department. Therefore, the survey involved doctors, nurses, medical assistant, healthcare assistant and ambulance driver only.

3.5 SAMPLING TECHNIQUE

Irrespective of these, it is representative to select a sample size appropriate for the study with the use of a method that offered each other equal chance of selection. It must be noted that Shah Alam Hospital (HSAS) conveniently selected due to the easy access to data by the researcher. The total number of respondents will be obtained from the human resources division of the emergency and trauma department.

The calculation of total population for staffing in emergency and trauma department in Shah Alam Hospital was 201 that consist of doctors, nurses and medical assistant officer, healthcare assistant and ambulance driver. According to Krejcie and Morgan (1970) if the population size are 201, the respond rate for that number is 132 population. Reference to the population size is as shown in the Table 3.1 below.

Table 3.1 Krejcie & Morgan Population Size

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

Note.—*N* is population size. *S* is sample size.

Source: Krejcie & Morgan, 1970

3.6 QUESTIONAIRES DESIGN AND MESUREMENTS

The questionnaire was designed to have five sections. Section I consisted of demographic analysis of the respondents. The researcher collected data on gender, age, marital status, race, religion, education position, years of service, life status and responsibilities in life. Section II was on health information status. Section III was question of perceive stress. Section IV was questions on resilience and section V was a question regarding coping mechanism.

The questionnaire items were as follows:

PERCEIVED STRESS SCALE QUESTIONS

VARIABLE	ORIGINAL STATEMENTS	STATEMENTS	SOURCE
PERCEIVED STRESS	In the last month, how often have you been upset because of something that happened unexpectedly?	Do you feel frustrated because something happened beyond your expectations?	Cohen, S., Kamarck, T., and Mermelstein, R. (1983)
	In the last month, how often have you felt that you were unable to control the important things in your life?	Do you feel that you are not able to control the important issues in your life?	
	In the last month, how often have you felt nervous and stressed?	Do you feel nervous and depressed ("stress")	
	In the last month, how often have you felt confident about your ability to handle your	Do you feel confident in your ability to deal with your personal problems?	

	personal problems?		
	In the last month, how often have you felt that things were going your way?	Do you feel that everything is going according to your plan?	
	In the last month, how often have you found that you could not cope with all the things that you had to do?	Do you find that you are not able to cope with all the things you need to do?	
	In the last month, how often have you been able to control irritations in your life?	Are you able to control the feelings of anger in your life?	
	In the last month, how often have you felt that you were on top of things?	Do you feel that you can succeed in everything?	
	In the last month, how often have you been angered because of things that happened that were outside of your control?	Are you going to get angry because of things that are out of your control?	
	In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	Do you feel an increasing level of difficulty that make you unable to handle?	

BRIEF RESILIENCE SCALE (BRS) QUESTIONS

VARIABLE	ORIGINAL STATEMENTS	STATEMENTS	SOURCE
RESILIENT	I tend to bounce back quickly after hard times.	I tend to bounce back quickly after going through a hard time	Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. and Bernard, J. (2008).
	I have a hard time making it through stressful events.	I have a hard time making it through stressful events	
	It does not take me long to recover from a stressful event.	It does not take me long to recover from a stressful event.	
	It is hard for me to snap back when something bad happens.	It is hard for me to snap back when something bad happens.	
	I usually come through difficult times with little trouble.	I usually come through difficult times with little trouble.	
	I tend to take a long time to get over setbacks in my life.	I tend to take a long time to get over setbacks in my life	

BRIEF RESILIENT COPING SCALE QUESTIONS

VARIABLE	ORIGINAL STATEMENTS	STATEMENTS	SOURCE
COPING	I look for creative ways to alter difficult situations.	I look for creative ways to alter difficult situations.	Sinclair, V. G., & Wallston, K.A. (2004).
	Regardless of what happens to me, I believe I can control my reaction to it.	Regardless of what happens to me, I believe I can control my reaction to it.	
	I believe I can grow in positive ways by dealing with difficult situations.	I believe I can grow in positive ways by dealing with difficult situations.	
	I actively look for ways to replace the losses I encounter in life.	I actively look for ways to replace the losses I encounter in life.	

3.7 MEASUREMENT SCALE

A Likert scale is a rating scale used to assess opinions, attitudes, or behaviors. Likert scales are popular in survey research because they allow you to easily operationalize personality traits or perceptions. The five-point Likert agreement scales were used to measure the variables of the study consist of stress, resilience and coping. The scale ranged from 1 to 5 scoring for 'strongly disagree', 'disagree', 'neutral', 'agree' and 'strongly agree' were available for several topics. Depending on how respondents responded to each question using common sense and reasoning, the 20 total questions were classified into three groups of themes.

3.8 VALIDATION OF INSTRUMENTS

Validity explains how well the collected data covers the actual area of investigation (Ghauri & Gronhaug, 2005). Validity basically means “measure what is intended to be measured” (Field, 2005). In this study, the experts with experience in the field of psychology were chosen from Psychiatric and Counselling Department, Shah Alam Hospital to validate the questionnaire's contents. The specialized person was urged to provide her professional opinions on the content, as well as an assessment of the questionnaire's structure, an understanding of the items, an analysis of the questionnaire's format and presentation, and a review of the following questions. What other components should move up the scale? Which things need to be removed? Changing the grammar into words that are easy to understand was the valuation experts advised.

Then the next step was to proceed to the factorial validation of the instrument with a sample of 30 healthcare workers in the emergency department who were not part of the course for the development of research skills but had characteristics similar to experimental and control group. According to Connelly (2008), extant literature suggests that a pilot study sample should be 10% of the sample projected for the larger parent study. However, Hertzog (2008) cautions that this is not a simple or straight forward issue to resolve because these types of studies are influenced by many factors. Nevertheless, Isaac and Michael (1995) suggested 10 – 30 participants; Hill (1998) suggested 10 to 30 participants for pilots in survey research; Julious (2005) in the medical field, and van Belle (2002) suggested 12; Treece and Treece (1982) suggested 10% of the project sample size. In conclusion 10 was the minimum and 30 was the maximum for pilot sample. For my study if 10% from 201 total

staffing in emergency department the calculated amount will be 20 sample pilot study.

3.9 DATA COLLECTION AND ADMINISTRATION

3.9.1 Pilot Study

To determine whether the scales are appropriate and applicable for the study, a pilot study will be carried out. Pilot studies help establish controls and restrictions, clarify instructions, and establish the appropriate level of the independent variable (Teijlingen van et al., 2001). In total, 30 healthcare professionals working in the emergency department were chosen, consist of doctors, nurses, medical assistants, healthcare assistants, and ambulance drivers. A pilot study was done to see how well the healthcare staff understood the questionnaires, the grammar and the language used. After the pilot study, some of the questions will be changed to better suit the needs of the respondents. They need to complete the survey in about 5 to 10 minutes time.

3.9.2 Fieldwork and data collection

A student identity (ID) card from University Utara Malaysia and a letter of consent for data collection in the relevant area will be utilized to get authorization for data collection. Additionally, each respondent's consent must be obtained, before any instrument can be completed. The researcher will deliver questionnaires individually via what app to the chosen respondents. Where necessary, explanations had to be given to a small percentage of respondents who had trouble completing the survey.

3.10 DATA ANALYSIS TECHNIQUES

Quantitative descriptive analysis was used for the analysis of data collected in this study. The Microsoft Office Excel 2013 and IBM SPSS Statistics version 26 were used to analyze the data. The software also was used to perform the descriptive statistics, normality analysis, reliability analysis, and correlation analysis in this study. To facilitate simple analysis, the quantitative data was first coded and loaded into IBM SPSS. Tables, graphs, and other descriptive statistical indicators were used to present the findings' descriptive elements. All of the above-mentioned technique will be discussed in next section.

3.10.1 Normality test

The most significant continuous probability distribution, the standard normal distribution, has a bell-shaped density curve that is defined by its mean and standard deviation (SD), and extreme values in the data set have no appreciable influence on the mean value. If a continuous data is follow normal distribution then 68.2%, 95.4%, and 99.7% observations are lie between mean ± 1 SD, mean ± 2 SD, and mean ± 3 SD, respectively. (Sundaram KR., Dwivedi SN., Sreenivas V., 2014) (Campbell MJ, Machin D, Walters SJ., 2007)

Correlation, regression, t-tests, and analysis of variance are only a few statistical techniques that use normality as an assumption in their data analysis. The central limit theorem states that violations of normality are not a significant problem when sample size is 100 or more observations (Altman DG, Bland JM., 1995) (Ghasemi A., Zahediasl S.,2012).

There are several tests that can be applied to gauge the normality analyses' goodness of fit. The Kolmogorov-Smirnov test and the Shapiro-Wilk test are the two most often utilised tests. (Mishra et al., 2019). The normality analysis in this work included the Shapiro-Wilk test. The study's subsequent chapter contains a report on the analysis' results.

3.10.2 Reliability Test

A survey questionnaire is one of the most often used methods of data collecting for quantitative researchers to gather information from respondents. Before moving on to the next level of analysis, it is crucial to evaluate the consistency and accuracy of feedback. In this stage of study, the instrument's reliability and validity are evaluated. (Taherdoost & Group, 2017). From Pallant (2011) The degree to which the scale's components "hang together" will help the researcher determine whether the scale's components are measuring the same construct. Measurements of the construct's internal consistency include Cronbach's alpha coefficient is a frequent indicator used in quantitative research. The selection of an instrument or the consideration of creating a new one is an essential step for a researcher to accomplish the research goal and ensure the instrument's quality. (Taber, 2018)

Straub et al. (2004) and Hinton et al. (2004) have proposed four reliability cut-off values, including outstanding dependability (0.90 and above), high reliability (0.70-0.90), moderate reliability (0.50-0.70) and low reliability (0.50 and below) (Hinton et al., 2004). It appears that despite the common belief held by many authors that an instrument's level of self-consistency must be at least 0.70, there aren't many solid reasons to use this heuristic. The following rule-of-thumb was mentioned by Said

(2018) that stated a value of Cronbach's alpha between 0.6 and 0.8 is acceptable (Wim et al, 2008). In the following chapter, the analyses' findings are presented.

3.10.3 Descriptive Analysis

Descriptive statistics are a critical part of initial data analysis and provide the foundation for comparing variables with inferential statistical tests. (Laerd Statistics. Types of variables; 2018) Therefore, as part of good research practice, it is essential that one report the most appropriate descriptive statistics using a systematic approach to reduce the likelihood of presenting misleading results. (Huebner, M., Vach, W., le Cessie, S., 2016) Thus the descriptive statistics functions that were used in this study are calculation of mean, standard deviation, frequencies, percentages, ranges, maximum value, and minimum values for demographic and all three variables.

3.10.4 T-test and ANOVA Analysis

The t-test and ANOVA were preformed to identify the differences between perceived stress, resilience, and coping mechanism with demographic of the respondents. A t-test is an inferential statistic used to determine if there is a significant difference between the means of two groups such as male and female, healthy and unhealthy, and categorical length of services. T-tests are used when the data sets follow a normal distribution and have unknown variances.

The one-way analysis of variance (ANOVA) is used to determine whether there are any statistically significant differences between the means of three or more independent (unrelated) groups. ANOVA uses the F-test for statistical significance.

This allows for comparison of multiple means at once, because the error is calculated for the whole set of comparisons rather than for each individual two-way comparison.

3.11 CHAPTER SUMMARY

The methodology and outcomes portions of any scientific study article are typically regarded as the most instructive and crucial aspects. (Kallet, 2004). These sections serve as the foundation for how future readers will approach the research since they typically provide an explanation and justification for the study design, the methodological techniques employed, and the results of the data analyses of the study and the conclusions that are drawn from it**.**

This study explores the level of stress, resilience and coping mechanism among healthcare workers working in emergency department and the relationship between demographic factors. The study was done on selected healthcare workers in the emergency department specifically doctors, nurses, medial assistant, health assistant and ambulance driver only. The research's conclusions are presented in the next chapter. It will include the demographic information, findings from the reliability and normalcy analyses, results from the study's outcomes, and conclusions from the descriptive statistics.

CHAPTER 4

FINDINGS

4.1 INTRODUCTIONS

The data analysis and study results, including the normality test, descriptive analysis, and inferential statistical analysis including t-test and one way ANOVA, will be covered in this chapter. To guarantee that the data collected from the questionnaire used in this study was adequate, the questionnaire was thoroughly examined. If the data tested normally distributed, the parametric technique will be utilized for further analysis; otherwise, the non-parametric technique will be applied. The demographic profile of the respondents will be described via descriptive analysis. For the reliability test, the Cronbach's alpha method will be employed because validity and reliability are crucial for determining whether the samples that were collected are accurate and reliable.

4.2 OVERVIEW OF DATA COLLECTED

4.2.1 Analysis of questionnaire

The research done using a validated questionnaires measuring stress, resilient and coping. For participants they are required to fill in a goggle form that has been created according to the validated questionnaires. Many answer are using Likert scale responses. There are total of 20 questionnaires that are divided by 3 categories of questions.

The questionnaire was distributed to all healthcare workers specifically doctors, nurses and medical assistant officer, healthcare assistant and ambulance driver. During this study, 201 questionnaires were sent to every respondent via personal chat on what app. Out of 201 samples only 160 was usable and there was no missing data detected.

4.2.2 Response Rate

The calculation of total population for staffing in emergency and trauma department in Shah Alam Hospital was 201 that consist of doctors, nurses and medical assistant officer, healthcare assistant and ambulance driver. According to Krejcie and Morgan (1970) if the population size are 201, the respond rate for that number is 132 population. For my study I was successfully obtained 160 participants during the distribution of questionnaires and 100% respondents answered the questionnaire.

4.3 PROFILE OF RESPONDENTS

This research uses demographic data and other characteristics to find answers and solution in managing psychological adaptation from all healthcare workers that works in emergency trauma department at Shah Alam Hospital in Selangor specifically doctors, nurses, medical assistant officer, and healthcare assistant and ambulance drivers. The data that have been collected are projected in Table 4.1 that shows profile of respondents in demographic and other characteristic that are related in this study.

Table 4.1 Profile of The Respondent (n-160)

Items	Category	Frequency	Percentage (%)
Gender	Female	89	55.6
	Male	71	44.4
Age	18-24	6	3.8
	25-34	87	54.4
	35-44	48	30.0
	45-54	17	10.6
	55 Above	2	1.3
Marital Status	Single	39	24.4
	Married	120	75
	Widow	1	0.6
Ethnic Group	Malay	138	86.3
	Chinese	4	2.5
	Indian	10	6.3
	Sabahan	6	3.8
	Sarawakian	2	1.3
Religion	Islam	140	87.5
	Buddha	3	1.9
	Hindu	9	5.6
	Christian	8	5.0
Educational Level	Secondary School	16	10
	Matrix/Diploma/ Certificate	101	63.1
	Bachelor/Master/Phd	43	26.9
Position	EP	7	4.4
	REGISTRA	9	5.6
	MO	12	7.5
	PPP	62	38.8
	SN	55	34.4
	PPK	8	5.0
	PKB	7	4.4
Years Of Service	Less 1 year	6	3.8
	1-3 years	25	15.6
	3-5 years	14	8.8
	5-10 years	56	35
	10 years above	59	36.9
Life Status	Living alone	18	11.3
	Living with someone	142	88.8
Responsibilities in life	Living alone	14	8.8
	Living with spouse	33	20.6
	Living with spouse and children	72	45
	Living with parents and children	6	3.8

	Living with children or parents or other family	17	10.6
	Living with spouse and other family	4	2.5
	Living with friends	14	8.8
Current Health Status	Healthy	151	94.4
	Sick	9	5.6
Current Disease	No Disease	128	80.0
	Diabetes	4	2.5
	Stroke	1	0.6
	Kidney problems	2	1.3
	High blood pressure	2	1.3
	Liver disease	1	0.6
	Heart problems	2	1.3
	Asthma / Chronic Lung Disease	5	3.1
	Cancer	1	0.6
	Others	14	8.8
Treatment status	Yes	25	15.6
	No	14	8.8
	Defaulted	1	0.6
	No illness	120	75.0

Gender

There are a total of 89 female respondents (55.6%) and 71 male respondents (44.4%) in this study. According to the proportion, there were significantly more female respondents than male respondents.

Age

The age range of 25–34 years has the most respondents in this survey, accounting for 87 respondents (54.4%), followed by the age range of 35–44 years, which has 48 respondents and accounts for 30.0% of the study. With 17, 6, and 2 respondents, respectively, representing 10.6%, 3.8%, and 1.6% of the total respondents, the age groups 45–54, 18–24, and above 55 years comprise the minority of respondents.

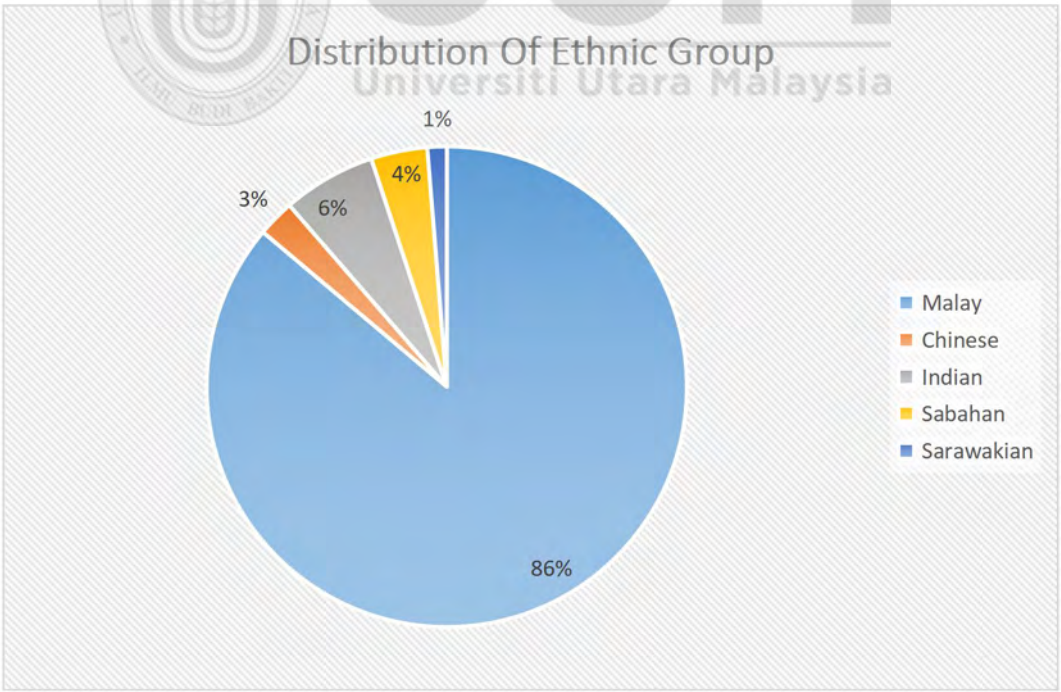
Marital Status

There are 39 unmarried respondents, 120 married respondents, and just 1 divorced or widowed respondents, representing, respectively, 24.4%, 75.0%, and 0.6% of the total.

Ethnic group

There are five ethnic groups: Sarawakian, Chinese, Sabahan Indian, and Malay. Approximately 86.3% of respondents are Malay, making up the bulk of the sample (138 respondents). With 6.3% (10 respondents), 2.5% (4 respondents), 3.8% (6 respondents), and 1.3% (2 respondents, respectively), the ethnic groups of Indian, Chinese, Sabahan, and Sarawakians are in the minority.

Figure 4.1 Ethnic Group Distribution



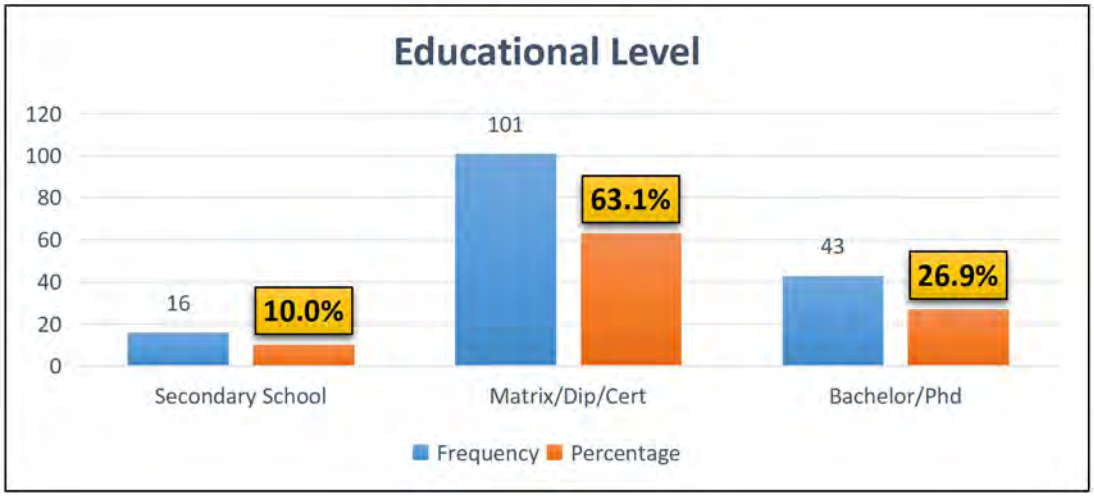
Religion

The four major religions are Islam, Buddhism, Hinduism, and Christianity. The majority of respondents—roughly 87.5% (140 respondents)—are of the Islamic faith, while the Buddhist, Hindu, and Christian faiths—with 1.9% (3 respondents), 5.6% (9 respondents), and 5.0% (8 respondents)—are in the minority.

Educational Level

With 101 participants who have earned a bachelor's degree, or 63.1% of the respondents, the bulk of respondents are holders of a diploma, credential, or certificate. The respondents with a bachelor's, master's, or doctorate are next, with 43 respondents, or 26.9% of the study's participants. With 16 respondents (10.0%), those with a secondary education come in third. In light of the fact that paramedics are more frequently needed than doctors, the majority of replies are holders of diplomas, matrices, or certificates. The respondents' percentage of education level is shown in Figure 4.4.

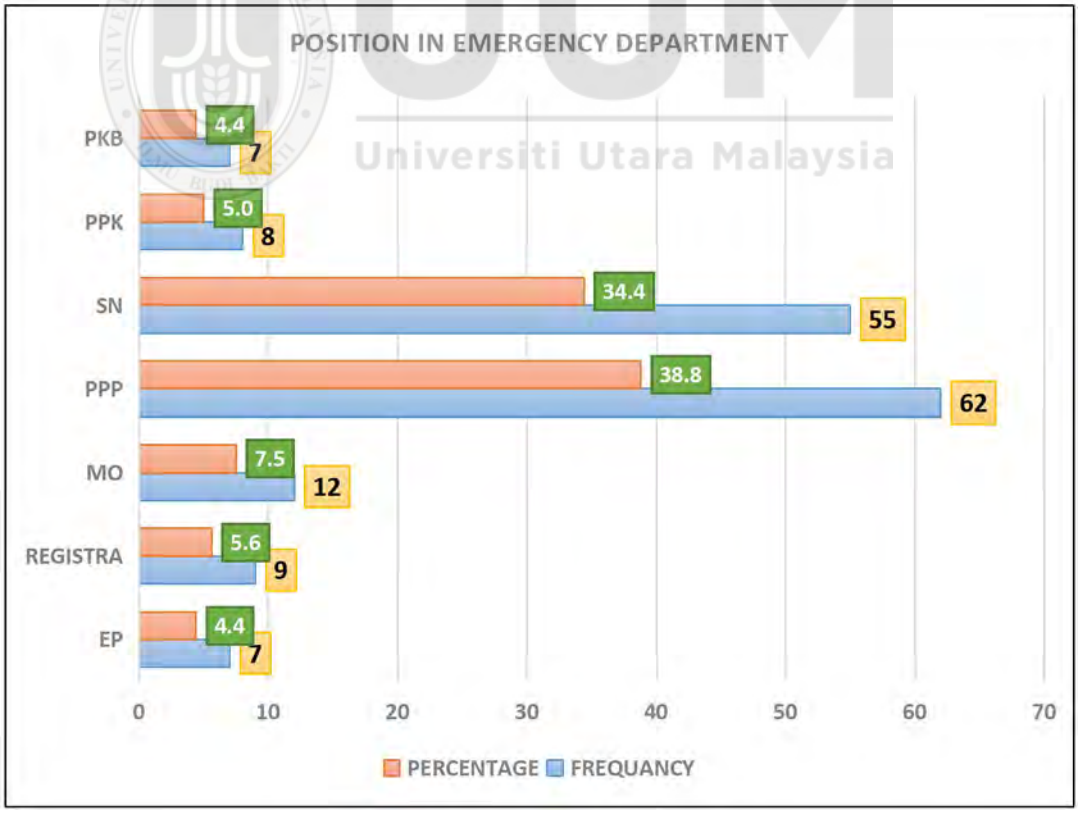
Figure 4.2 Educational Level



Position

The majority of high percentage in respondents are paramedics consist of medical assistant officer and nurses with 62 and 55 respondents or 38.8%, and 34.4%, respectively. This is because of ABM (Anggaran Belanjawan Mengurus) application and ratio of activities in department for a paramedics is higher than doctors, healthcare assistant and ambulance driver in Shah Alam Hospital emergency department. The minority of the respondents are doctors consist of EP, Registra and MO's with respondents 7, 9, and 12 or 4.4%, 5.6% and 7.5% whilst respondents for healthcare assistant and ambulance driver obtained 8 and 7, with or 5.0% and 4.4%, respectively.

Figure 4.3 Percentage of Position in Emergency Department



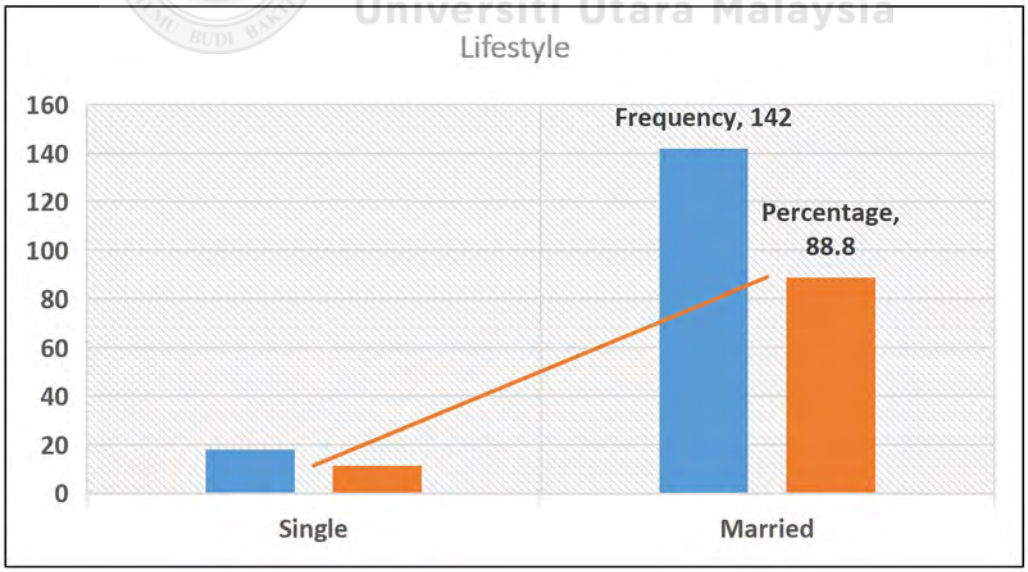
Years in Service

In this study, the majority of working experience in each respondent is as follows: working more than 10 years is 59 respondents (36.9%), followed by respondent service of five to ten years, with 56 respondents making up 35.0% of the study, while the majority of respondents come from service groups of three to five years, one to three years, and less than one year, with 14, 25, and six respondents, respectively, making up 8.8%, 15.6%, and 3.8% of the study.

Life Status

In this study there are a total of 142 (55.6%) respondents that live with partner and 18(11.3%) respondents that live alone. The percentage shows that the respondents which live with partner are much higher than the respondents living a single life.

Figure 4.4 Lifestyle of Respondent



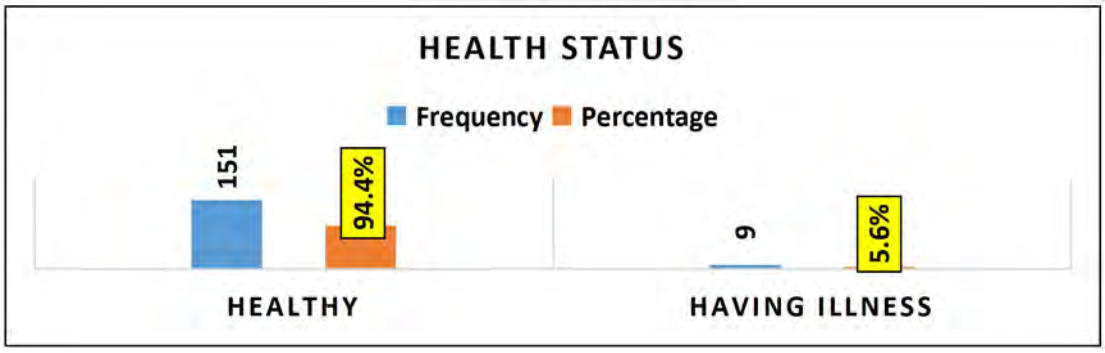
Responsibilities in Life

Respondents who live with his/her spouse and their children including the respondent himself/herself, are the majority, with 72 respondents (45.0%) having this family size, followed by respondents who live with his/her spouse only, with 33 respondents, or 20.6%, respectively, having this family size. About 17 respondents or 10.6% are staying either with spouse or child or parents or other relatives, and 14 respondents or 8.8% are single and staying alone. The minority of the respondents living with spouse, child and parents are at 6 and 3.8%, living with spouse and other relative are at 4 and 2.5% and living with friends are at 14 and 8.8% respectively. This shows that all of the respondent having a responsibilities in their life not only their job.

Health Status

There are 9 (5.6%) respondents who are unwell and 151 (94.4%) respondents who are healthy overall in this survey. The percentage demonstrates that respondents who are healthy outnumber respondents who are unwell by a wide margin. Healthy respondents are less concerned about their comorbidity during the pandemic COVID-19 outbreak.

Figure 4.5 Health Status of Respondent



Current Illness

There are 10 diseases that are common among staff working in Emergency Department in Shah Alam Hospital. The majority of staff not having any diseases is much higher at 128 (80.0%) followed by other categories of diseases with 14 (8.8%), Asthma/Chronic Lung Disease with 5 (3.1%), Diabetes with 4 (2.5%), Kidney problems, Hypertension and Heart problem with 2 (1.3%), 2 (1.3%), and 2 (1.3%). whilst the minority diseases are stroke, hepatic disease and cancer were each reported by one respondent at 0.6%, 0.6%, and 0.6%, respectively.

4.4 Goodness of Measures

4.4.1 Normality Test

The distribution of the sample size is determined using the normality test. It's crucial to know whether the sample's mean, standard deviation, kurtosis, and skewness are within acceptable bounds. For subsequent testing, parametric analysis will be utilized if the samples are normally distributed; otherwise, non-parametric analysis will be applied.

A symmetrical bell-shaped curve that has the greatest frequency of scores in the middle and smaller frequencies at the extremities is used to describe normality (Pallant, 2007). No extreme outliers were detected in the research's findings after the normality test was run; all of them were within the allowed range. As a result, the N = 160 total sample size stays, and Table 4.2 presents the typical results.

Table 4.2 The Mean, Standard Deviation, Skewness And Kurtosis.

Construct	Item	Mean	Std. Deviation	Skewness	Kurtosis
Perceived Stress	C1	2.81	.901	-.548	.366
	C2	2.44	.923	-.057	-.417
	C3	2.82	.937	-.603	.195
	C4	2.76	1.119	-.009	-.579
	C5	3.05	.767	-.255	1.470
	C6	2.46	.853	-.355	-.681
	C7	3.19	.887	-.172	.464
	C8	3.01	.789	-.633	1.057
	C9	2.81	.884	-.285	.106
	C10	2.51	.869	-.272	-.358
Self - Resistance	D1	3.65	.729	-.634	1.338
	D2	3.25	.842	-.430	-.073
	D3	3.35	.826	-.460	-.263
	D4	2.72	.985	.192	-.693
	D5	3.04	.838	-.201	.033
	D6	2.80	.976	-.039	-.408
Brief Resilient Coping	E1	3.33	.822	-.614	.938
	E2	3.53	.784	-.619	.949
	E3	3.64	.764	-.668	1.041
	E4	3.74	.797	-.775	1.490

The variable Related to Feelings and Thoughts (Perceived Stress Scale) has two mean values: the greatest is C7, which has a value of 3.19, and the lowest is C2, which has a value of 2.44. These variables are normal since the kurtosis values for C1 to C10 are between -3 and 3, and the skewness values are between -1 and 1.

The greatest mean on the construct of the Self-Resistance Scale is D1, with a mean value of 3.65, and the lowest mean is D4, with a mean value of 2.72. D1 has the highest skewness value, measuring at -0.634, and D6 has the lowest skewness value, measuring at -0.39. All of the items in D1 through D6 have kurtosis values in the range of -3 to 3, proving that they are all regularly distributed.

The highest mean for the variable of Brief Resilient Coping Scale is E4, which has a value of 3.74 and the lowest mean value is E1, which has a value of 3.33. The highest skewness value is E4, which has a value of -0.775 and the lowest value of skewness is E1, which has a value of -0.614. The kurtosis values for E1 to E4 are between -3 and 3, and the skewness value for E1-E4 are between -1 to 1 which indicate these variables are normal.

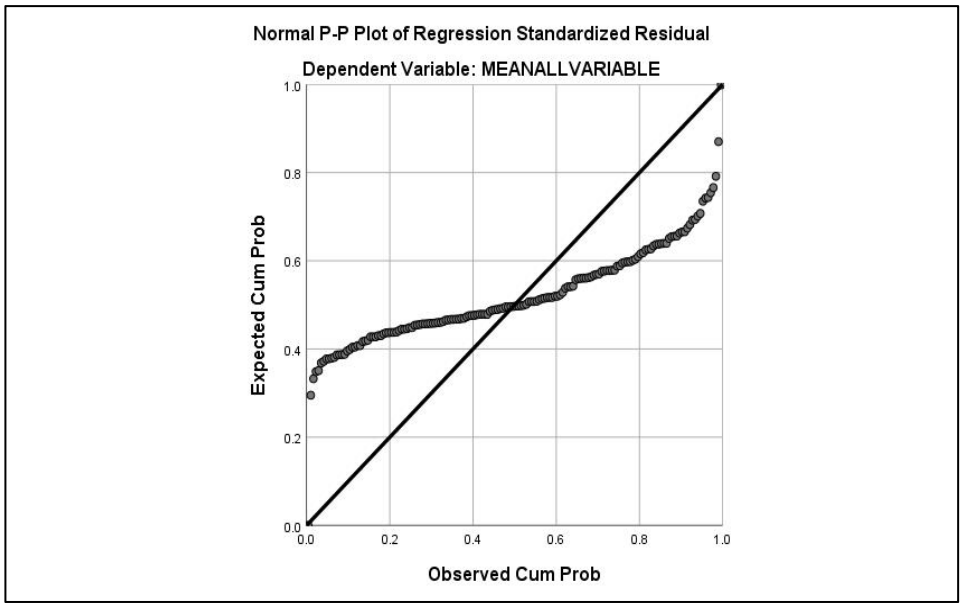


Figure 4.6 Linearity Scatter-plot

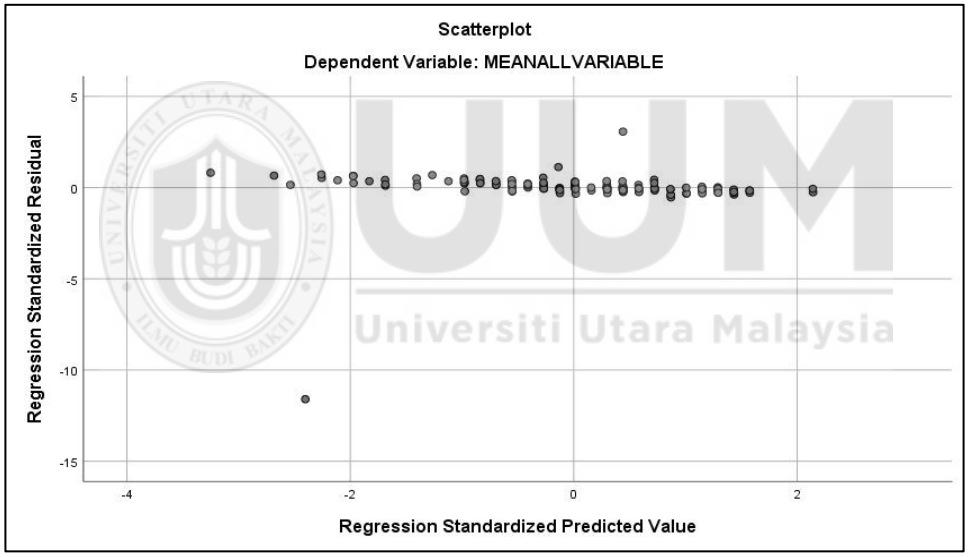


Table 4.3: Multicollinearity in Regression

Variables		Collinearity Statistics	
		Tolerance	VIF
	Stress	.992	1.008
	Resilient	.992	1.008
	Coping	.997	1.003

Based on Table 4.3 showed that the VIF value is lower than 10, which it is usually considered to have a low correlation with other independent variables. From the table below shows that all features are low correlated with other independent variables.

4.4.2 Reliability Test

The instrument's degree of consistency and stability was evaluated using the Alpha Cronbach's coefficient test as the indication. All variables' Alpha Cronbach's coefficients must be greater than 0.6. According to Nunnally and Bernstein (1994), an Alpha Cronbach's value of greater than 0.60 is seen as having excellent reliability and being acceptable (Pallant, 2001).

Overall, all of the variables consist of C1 to C10, D1 to D6 and E1 to E4 have a cumulative of Alpha Cronbach's coefficient of more than **.726.** But if broken down into variables related To Feelings and Thoughts (Perceived Stress) (C1-C10) and Brief Resilient Coping (E1-E4) with 0.804 and 0.823 however the variable for Self - Resistance (D1-D6) can only achieve 0.627 in the Alpha Cronbach's test. Even though variable for self-resistance or resillient only obtained 0.627, it is stil consider high reliability. As a conclusion all items in this study are consistent and reliable.

Table 4.4

Reliability Statistics	
Cronbach's Alpha	N of Items
.726	20

The Alpha Cronbach's reliability coefficient is obtained at range of .726 that show high reliability and acceptable. According to Pallant (2001) states Alpha Cronbach's value above 0.6 is considered high reliability and acceptable index (Nunnally and Bernstein, 1994)

Table 4.5

Item-Total Statistics

	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
C1	58.17	43.340	.361	.709
C2	58.54	42.620	.410	.704
C3	58.16	43.064	.365	.708
C4	58.22	41.970	.360	.709
C5	57.93	44.537	.329	.713
C6	58.53	43.525	.370	.709
C7	57.78	43.864	.326	.712
C8	57.97	44.986	.269	.717
C9	58.16	42.355	.461	.700
C10	58.46	42.594	.448	.702
D1	57.34	47.462	.039	.733
D2	57.74	45.009	.237	.720
D3	57.62	47.740	-.001	.738
D4	58.27	44.696	.205	.724

D5	57.95	43.603	.366	.709
D6	58.19	44.091	.256	.719
E1	57.66	46.303	.126	.728
E2	57.46	44.887	.274	.717
E3	57.35	45.005	.272	.717
E4	57.25	44.483	.306	.714

Based on Table 4.5 above shows that for this research instrument, the Alpha Cronbach's reliability coefficient is obtained at range of .726 that show high reliability and acceptable.

4.5 DESCRIPTIVE ANALYSIS

Table 4.6: Mean and Standard Deviation for Variables

	N	Minimum	Maximum	Mean	Std. Deviation
Stress	160	1.00	3.80	2.7856	.54007
Resilient	160	2.00	5.00	3.1333	.51287
Coping	160	1.00	5.00	3.5609	.63984
Valid n (listwise)	160				

The tables in 4.5.1(b) shows that mean variable for stress is 2.7.856 with standard deviation of .54007, mean variable for resilient is 3.1333 with standard deviation of .51287 and mean variable for coping variable is 3.5609 with standard deviation of .63984

4.6 T-Test ANALYSIS

This section explains the independent-samples t-test to compares the means between two unrelated groups on the same continuous, dependent variable. This study identifies each unrelated groups including categorical of age, sex, categorical length of service and health status with stress, resilience & coping mechanism as dependent variables

4.6.1 Categorical of Age with C, D & E

Two (2) categorical of age in this test, which are 18 years old to 34 years old (below 35 years old) and 35 years old to 60 years old (above 35 years old) and tested with stress. Independent Samples t Test analysis as stated in Table 4.7, shown that, there is significant mean differences [t = 10.076, p = .000] between categorical age below 35 years old and above 35 years old.

Table 4.7 : T-Test Independent Samples t Test between Categorical of Age and Stress

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical of age	1.79375	10.076	159	.000
Stress	2.46625	62.261	159	.000

The result shown in Table 4.8, indicated a significant mean differences [t = 10.076, p = .000] between categorical age below 35 years old and above 35 years old with variable Resilience.

Table 4.8 : T-Test Independent Samples t Test between Categorical of Age and Resilience

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical of age	1.79375	10.076	159	.000
Resilience	3.13333	77.226	159	.000

For variable Coping mechanism, independent samples t test result in Table 4.9, shown that, there is significant mean differences [t = 10.076, p = .000] between categorical age below 35 years old and above 35 years old.

Table 4.9 : T-Test Independent Samples t Test between Categorical of Age and Coping Mechanism

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical of age	1.79375	10.076	159	.000
Coping Mechanism	3.56094	70.397	159	.000

Therefore, all three (3) dependent variables (Stress, Resilience and Coping mechanism) have means significant differences with categorical of age.

4.6.2 Gender with Stress, Resilience & Coping mechanism

The result from independent samples t test as shown in Table 4.10, indicated, there is significant mean differences [t = 39.498, p = .000] between male and female.

Table 4.10:T-Test Independent Samples t Test between Gender and Stress

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical of age	1.556	39.498	159	.000
gender	3.56094	70.397	159	.000

Independent samples t test confirmed there is significant mean differences [t = 39.498, p = .000] between male and female with variable resilience.

Table 4.11:T-Test Independent Samples t Test between gender and resilience

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical of age	1.556	39.498	159	.000
resilience	3.13333	77.228	159	.000

For variable Coping mechanism, independent samples t test result in Table 4.12, validated that, there is significant mean differences [t = 39.498, p = .000] between male and female.

Table 4.12:T-Test Independent Samples t Test between Gender and coping mechanism

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical of age	1.556	39.498	159	.000
coping mechanism	2.46625	62.261	159	.000

Therefore, male and female have means significant differences with Stress, Resilience & Coping mechanism.

4.6.3 Categorical Length of Service with Stress, Resilience & Coping mechanism

The analysis from independent samples t test as performed in Table 4.13, revealed, there is significant mean differences [t = 48.203, p = .000] between categorical less than five (5) years services with more than five (5) years services.

Table 4.13:T-Test Independent Samples t Test between Categorical Length of Service and Stress

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical Length of Service	1.71875	48.203	159	.000
Stress	2.46625	62.261	159	.000

The result independent samples t test for Resilience and categorical length of service as stated in Table 4.14, shown there is significant mean differences [t = 48.203, p = .000] between the variables.

Table 4.14 : T-Test Independent Samples t Test between Categorical Length of Service and Resilience

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical Length of Service	1.71875	48.203	159	.000
Resilience	3.13333	77.228	159	.000

Independent samples t test presented for E and categorical length of service as displayed in Table 4.15, shown there is significant mean differences [t = 48.203, p = .000] between categorical length of service.

Table 4.15:T-Test Independent Samples t Test between Categorical Length of Service and Coping Mechanism

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Categorical Length of Service	1.71875	48.203	159	.000
Coping Mechanism	3.56094	70.397	159	.000

Therefore, all categorical length of service among staff in Emergency Department Hospital Shah Alam with Stress, Resilience & Coping mechanism have means significant differences.

4.6.4 Health Status with Stress, Resilience & Coping mechanism

Independent samples t test analysis shown in Table 4.16, revealed, there is significant mean differences [t = 38.085, p = .000] between healthy (don't have any disease) and not healthy (have at least a disease such as diabetes, kidney and others).

Table 4.16:T-Test Independent Samples t Test between Health Status and Stress

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Health Status	1.19375	38.085	159	.000
Stress	2.46625	62.261	159	.000

Result analysis from independent samples t test analysis indicated in Table 4.17, shown, there is significant mean differences [t = 38.085, p = .000] between health status with Resilience.

Table 4.17:T-Test Independent Samples t Test between Health Status and Resilience.

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Health Status	1.19375	38.085	159	.000
Resilience	3.13333	77.228	159	.000

The analysis for Coping mechanism also shown there is a significant differences [t = 38.085, p = .000] between those who have disease with free from any disease.

Table 4.18:T-Test Independent Samples t Test between Health Status and Coping mechanism

Variable	Mean difference	t-test for mean difference		
		t	df	sig. (2-tailed)
Health Status	1.19375	38.085	159	.000
Coping mechanism	3.56094	70.397	159	.000

Therefore, the health status shown difference mean significant to all three (3) variables (Stress, Resilience & Coping mechanism).

4.7 ONE WAY ANOVA ANALYSIS

The One-way ANOVA analysis was performed to identify the means differences between more than two unrelated groups on the same continuous, dependent variable. This study identifies each unrelated groups including educational level, job position and responsibilities in life with Stress, Resilience & Coping mechanism as dependent variables

4.7.1 Educational Level with Stress, Resilience & Coping mechanism

One way ANOVA analysis indicated that there are no significant mean difference [F (21, 138) = 1.240, p > 0.05]. between those who have education background in secondary school, certificate or diploma and bachelor degree with Stress.

Table 4.19: One Way ANOVA for Mean Difference between Educational Level and Stress

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	8.641	21	.411	1.240	.228
Within Group	45.803	138	.322		
Total	54.444	159			

The result from one way ANOVA test shown that there are no significant mean difference [F (14, 145) = 1.006, p > 0.05].between three (3) categorical of education background with Resilience.

Table 4.20 : One Way ANOVA for Mean Difference between Educational Level and Resilience.

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	4.821	14	.344	1.006	.450
Within Group	49.623	145	.342		
Total	54.444	159			

One way ANOVA analysis revealed that only those who are degree holder have significant mean difference [F (14, 145) = 1.806, p < 0.05] only between coping mechanism. The others two (2) categorical of education background which secondary school and certificate or diploma with coping mechanism.

Table 4.21 : One Way ANOVA for Mean Difference between Educational Level and coping mechanism

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	8.086	14	.578	1.806	.043
Within Group	46.358	145	.320		
Total	54.444	159			

Therefore, only coping mechanism have mean significant difference between categorical of education background compare with Stress and Resilience.

4.7.2 Job Position in Emergency Department with Stress, Resilience & Coping mechanism

The job position in the study including EP, Registrar, Medical Officer, Medical Officer Assistance, SN, PPK and PKB. One way ANOVA analysis indicated that there are no significant mean difference [F (21, 138) = 1.373, $p > 0.05$] between various job position in the Emergency Department, Hospital Shah Alam with Stress.

Table 4.22 : One Way ANOVA for Mean Difference between Job Position and Stress

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	43.296	21	2.062	1.373	.142
Within Group	207.198	138	1.501		
Total	250.494	159			

The result from one way ANOVA test also shown that there are no significant mean difference [F (14, 145) = 1.006, p > 0.05].between all categorical of job position in Emergency Department Hospital Shah Alam with Resilience.

Table 4.23 :One Way ANOVA for Mean Difference between Job Position and Resilience

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	24.566	14	1.755	1.126	.340
Within Group	225.927	145	1.558		
Total	250.494	159			

One way ANOVA analysis revealed that mean score between job position in Emergency Department at Hospital Shah Alam have no significant mean difference [F (14, 145) = 1.806, p < 0.05] with coping mechanism.

Table 4.24:One Way ANOVA for Mean Difference between Job Position and coping mechanism

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	29.046	14	2.075	1.358	.181
Within Group	221.447	145	1.527		
Total	250.494	159			

Therefore, job positions among staff in Emergency Department at Hospital Shah Alam <u>are not</u> significant difference to C, D and E.

4.7.3 Life Responsibilities with Stress, Resilience & Coping mechanism

Life responsibilities refer to individual number of dependents, including kids, parents and siblings. The one way ANOVA analysis shown that there are no significant mean difference [F (21, 138) = 1.433, p > 0.05]. between those who big or small number of dependents with Stress.

Table 4.25 : One Way ANOVA for Mean Difference between Life Responsibilities and Stress

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	73.265	21	3.489	1.433	.113
Within Group	335.929	138	2.434		
Total	409.194	159			

The result from one way ANOVA test also indicated that there are no significant mean difference [F (14, 145) = 1.184, p > 0.05] between all individual dependents with Resilience.

Table 4.26: One Way ANOVA for Mean Difference between Life Responsibilities and Resilience.

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	41.988	14	2.999	1.184	.293
Within Group	367.205	145	2.532		
Total	409.194	159			

The analysis found that those who are big or small responsibilities to family have no significant mean difference [F (14, 145) = .660, p > 0.05] between coping mechanism.

Table 4.27 : One Way ANOVA for Mean Difference between Life Responsibilities and coping mechanism.

	Sum of Squares	dk	Mean Square	F	Sig.
Between Group	24 505	14	1.750	.660	.810
Within Group	384 689	145	2.653		
Total	409 194	159			

Therefore, life responsibilities have no mean significant difference between all categories of job position with Stress, Resilience & Coping mechanism

4.8 SUMMARY OF THE FINDINGS

This chapter presented the result of the analysis using SPSS software. The results shown that the level of perceived stress, resilience and coping mechanism were at moderate level. Analysis of differences indicated several of demographic have significant mean differences between perceived stress, resilience and coping mechanism among healthcare workers in Emergency Department Hospital Shah Alam. Therefore, the next chapter elucidates these findings, discusses the implications, presents the limitations, suggests the direction for future research, and concludes the study.

CHAPTER 5

DISCUSSION, CONCLUSION AND RECOMMENDATIONS

5.1 INTRODUCTION

This chapter discusses the findings based on the findings from Chapter 4 in detail. Discussion of the validity of the proposed hypotheses is based on the study's findings. Following the resolution of each research question, the accomplishment of the study's goals is assessed.

5.2 RECAPITULATION OF THE RESEARCH FINDINGS

The current research examined the level of perceive stress, resilience and coping mechanism impact to healthcare workers working in emergency department . The study also examined the demographic factors role in the relationship between level of perceive stress, resilience and coping mechanism effectiveness. To be specific, the first objective of this study is to determine the relationship between level of stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic; and the second objective is to investigate the relationship between demographic factors such as categorical of age, length of service, job position and educational level with perceived stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic.

Data were gathered from two sources via primary and secondary. Both primary and secondary data are used in the study to address the research issues. Both data sources support the goals and contributed to the development of conclusions and

suggestions. Primary data was gathered from healthcare workers specifically doctors, nurses and medical assistant officer, healthcare assistant and ambulance driver working in emergency department randomly selected through purposive sampling whilst Secondary data for this study was gathered from numerous online databases of journals, books, year projects completed by previous students at the university, and other sources and also collected from the Public Health Unit and the Psychiatry and Counseling Unit of Shah Alam Hospital in view of any referral from emergency departments to the respective unit to correlate numbers of staff referred during the pandemic covid from 2019 until 2022.

The questionnaires were distributed to 201 healthcare workers in emergency department specifically doctors, nurses, medical assistant, healthcare assistant and ambulance driver. The questionnaire was designed to have five sections. Section I consisted of demographic analysis of the respondents. The researcher collected data on gender, age, marital status, race, religion, education position, years of service, life status and responsibilities in life. Section II was on health information status. Section III was question of perceive stress. Section IV was questions on resilience and section V was a question regarding coping. A pilot study was done to 30 healthcare workers that will not involve in the research afterward to see how well the healthcare staff understood the questionnaires, the grammar and the language used. After the pilot study, some of the questions will be changed to better suit the needs of the respondents .

The healthcare workers in emergency department specifically doctors, nurses, medical assistant, healthcare assistant and ambulance driver, giving a response rate

of 38.8 percent to medical assistant, 34.4 percent to nurses, 7.5 percent to medical officers, 5.6 percent to registra, 5.0 percent to healthcare assistant and 4.4 percent to emergency physician with ambulance drivers respectively.

Finally, the Statistics Package for the Social Sciences (SPSS) and PLS-SEM were used for data analysis. This research utilized SPSS to conduct data screening and descriptive analysis tests. PLS-SEM is designed to examine interrelationships between variables. This research utilised PLS-SEM to conduct bootstrapping and path analysis hypothesis testing. For hypotheses results, the findings of this study indicated that three direct relationships were significantly and positively related to level of perceive stress, resilience and coping mechanism and their relationship to demographic factors. Therefore, H1, H2, H3, were supported.

5.3 DISCUSSION OF THE FINDINGS

This section discusses based on two (2) research objectives as stated in chapter 1.

5.3.1 Level level of perceive stress, resilience and coping mechanism

What is the level of perceive stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic. To determine the findings descriptive analysis using mean and standard deviation for variables was done. The results shows that mean coping is greatest at 3.5609 with SD of .63984, followed by resilience factor with moderate mean at 3.1333 and SD of .51287 and perceive stress is at lowest mean with 2.7855 with SD of .54007. This shows that coping factor has been used by health workers throughout the covid pandemic to prevent them from experiencing mental problems and as

motivation to get through everyday life.

The psychological effects of the COVID-19 pandemic and possible solutions were reviewed quickly by Cabarkapa et al. in 2020. 13 research were reviewed in their article on coping mechanisms. Healthcare workers' coping strategies varied from one another. Nursing staff and healthcare assistants used "Behavioral disengagement" and "self-distraction" more frequently than doctors, who appeared to be more prone to utilise "planning" as a coping mechanism. Wang et al. in 2020 state that the Chinese programme was the first to address the new psychosocial burdens caused by the pandemic and paved the way for health institutions and even governments to implement parallel psychological assistance measures in addition to the necessary medical and financial measures as part of their response. The French provided support for this because they believed that it was necessary to combat loneliness, boredom, the inability to unwind with family and friends, exercise, and spend time outdoors (Lefevre et al., 2021)

When evaluating the findings, it is important to take the present study's limitations into account. To start, we disseminated the survey using social media and our personal network. Due to the possibility of selection bias, it is impossible to estimate the response rate. Additionally, the use of a cross-sectional design prevents us from deducing causality for the correlations investigated. In addition, recollection bias may have affected the results because participants were asked to score their coping strategies under both ideal and realistic conditions. Future research should use a longitudinal study design with a clearly defined study population of healthcare workers and their working environment. Finally, there were unequal numbers among

the research groups (professions). Workers in direct care made up the largest category. It is important to use caution when generalizing to other populations.

5.3.2 Relationship with demographic factors

Are there any differences between demographic factors such as categorical of age, length of service, job position and educational level with perceived stress, resilience and coping mechanism among HCWs working at Shah Alam Hospital's emergency department during the COVID-19 pandemic. To determine the findings, descriptive analysis was done to find the significant relationship. Using T-test and One Way Anova to predict the results.

The results using t-test is to compares the means between two unrelated groups on the same continuous, dependent variable and to identifies each unrelated groups including categorical of age, sex, categorical length of service and health status with perceive stress, resilience and coping as dependent variables. Analysis showed that the mean score age [t = 10.076, p = .000], Therefore, all three (3) dependent variables (perceive stress, resilience and coping) have means significant differences with categorical of age. Gender [t = 39.498, p = .000], Therefore, male and female have means significant differences with C, D & E. Length of service [t = 48.203, p = .000], Therefore, all categorical length of service among staff in Emergency Department Hospital Shah Alam with C, D and E have means significant differences. Health status [t = 38.085, p = .000], Therefore, the health status shown difference mean significant to all three (3) variables (C, D and E). In conclusion all demographic factors such as age, gender, length of service and health status have significant relationship and affecting the variables of perceive stress, resilience and

coping among healthcare workers working in emergency department at Shah Alam Hospital.

By using One-way ANOVA analysis it is to identify the means differences between more than two unrelated groups on the same continuous, dependent variable and to identifies each unrelated groups including educational level, job position and responsibilities in life with perceive stress, resilience and coping as dependent variables. The results shows that educational level factor [$F(21, 138) = 1.240$, $p > 0.05$] with stress and resilience are not significant whilst educational level factor with coping is significant [$F(14, 145) = 1.806$, $p < 0.05$] , job position factor [$F(14, 145) = 1.006$, $p > 0.05$] and responsibilities in life factors [$F(14, 145) = 1.806$, $p < 0.05$] are not significant with all three (3) variables of perceive stress, resilience and coping.

In conclusion only coping mechanism have mean significant between categorical of education compare to perceive stress and resilience. among healthcare workers working in emergency department at Shah Alam Hospital. Significantly healthcare with higher education, experience and knowledge contribute to coping mechanism during the pandemic covid-19 occur. According to Qian et al., 2020, despite the continued pandemic, residence gradually reported feeling less stressed and stigmatized. This may be due to improved workflow and procedures that have been developed over time, incremental situational adaptability, and the public's demonstrable support for HCWs.

During the COVID-19 epidemic, providing care and services to the public might result in stress, worry, terror, and other powerful emotions. How you handle these

feelings can have an impact on your yourself, the care and services you provide to others while working, and the wellbeing of the people you care about outside of work. It is crucial that you understand what stress looks like during this epidemic, take actions to increase your resilience and cope with stress, and know where to go if you need support.

5.4 IMPLICATION OF THE STUDY

Measurement of perceived stress, although not as a measure of psychological symptomatology, may be used to determine those who are at risk for particular clinical psychiatric disorders, like burnout syndrome (Roberti et al., 2006).

It is important to note that this is an indicator of subjective human beliefs which relate to the effectiveness of the actions performed while coping with stress. Workers with a consistently low or medium level of psychological comfort will probably need not only help in the area of organizational resources, reducing external stressors and mental tensions, but also activities focused on increasing self-esteem and self-efficacy. This requires monitoring the level of the said variable. On the other hand, increasing one's self-efficacy level is not easy. It is known from the literature that despite theoretical knowledge of how to induce self-efficacy, such programs do not always produce the intended results (Morton, Montgomery, 2013).

5.5 LIMITATIONS OF THE STUDY

In this investigation, a number of constraints were discovered. The samples for this investigation were only taken from the emergency room at Shah Alam Hospital in Selangor, which is a significant constraint. The population involve in the study only

relies on doctors, nurses, medical assistant officer, healthcare assistant and ambulance driver from the same department only. The focus of the study on the emergency department of Shah Alam Hospital alone may affect the findings of the study because it does not represent the entire opinion from other emergency departments throughout Malaysia.

Respondents can evaluate questions inaccurate due to gaps or misunderstandings the meaning of the question or concepts measured by questions. On the other hand, the study may be constrained because respondents' honesty in responding to current questions surveys is assumed. As the questionnaires was distributed via personal messaging through what app, respondent tend to ignore the messages in view of too busy to answer the question when working and too tired to answer when at home and finally forgot to answer the questionnaires after a few days later. Researcher had to undergo a serious weekly follow up to persuade respondent to answer the questions again.

5.6 RECOMMENDATIONS OF STUDY

This research only investigates a small part. Therefore, there may be other studies that focus on areas other than the state of Selangor that need to be considered. Therefore, it is likely that results taken from other states in Malaysia may produce different results. Continuity of government programme for health screening for all staff involving every categories. Programme such as KOPSEN and MHPSS are among best programme produced by government to enhance health in staffed.

The employer's role in looking after the welfare of staff during the pandemic needs to

be refined. Giving incentives to the staff on duty can ease the burden on the staff. Several incentives have been identified, among them; grant of pandemic allowance, In addition, the management also needs to be more empathetic and sympathetic to the staff who carry out their duties during the pandemic so that they can assess other needs such as food, clothing and shelter if they need to be quarantined after caring for patients with infectious diseases during the pandemic. Increase the number of staff according to ratio staff to patients as well as according to the level of care during the pandemic to reduce the burden of staff working overtime which will cause burnout among them.

5.7 CHAPTER SUMMARY

In most countries, COVID-19 is currently a major challenge for the healthcare system. HCWs are at the forefront treating patients and, as a result, are under high stress, which can affect their resilience and coping mechanism. The results of the present study showed that the level of coping is high. According to the study results, demographic factors were determined as the contributing factors for perceive stress, resilience, and coping mechanism. Based on the study findings, to achieve higher coping in the stressful situation, resilience training programs and increasing knowledge about working at critical situation arising from unknown diseases are recommended.

REFERENCES

Abdullah, Noor Hisham (2020). "Kenyataan Akhbar KPK 6 Januari 2020 – Makluman Kejadian Kejadian Kluster Radang Paru-Paru (Pneumonia) di Wuhan, Republik Rakyat China" [Director General of Health's Press Statement 6 January 2020 - Notification of Incidence of Pneumonia Cluster in Wuhan, People's Republic of China]. From the Desk of the Director-General of Health Malaysia. Archived from the original on 30 November 2020. Retrieved 24 April 2020

af Ugglas, B., Skyttberg, N., Wladis, A., Djärv, T., & Holzmann, M. J. (2020). Emergency department crowding and hospital transformation during COVID-19, a retrospective, descriptive study of a university hospital in Stockholm, Sweden. *Scandinavian Journal of Trauma, Resuscitation and Emergency Medicine*, *28*(1), 1–10. https://doi.org/10.1186/s13049-020-00799-6

Afshari D, Mohammadi A, Saki A, Movafaghpour M. (2014). Continuous Monitoring of Back Postures using Portable Inclinometer among Nursing Assistants. *Iran Occupational Health*. 2014;11(3):30-9.

Akkan, C., Karadayi, M. A., Ekinci, Y., Ülengin, F., Uray, N., & Karaosmanoğlu, E. (2020). Efficiency analysis of emergency departments in metropolitan areas. *Socio-Economic Planning Sciences*, *69*. https://doi.org/10.1016/j.seps.2019.01.001

Barello, S., Palamenghi, L., and Graffiffiffigna, G. (2020). Burnout and Somatic Symptoms among Frontline Healthcare Professionals at the Peak of the Italian COVID-19 Pandemic. *Psychiatry Res*. 290:113129.

Benedek D, Fullerton C. & Ursano R. (2007). First responders: mental health consequences of Natural and human-made disasters for public health and public safety workers. *Annu Rev Public Health*. 28: 55–68.

Bjorklund DF. (2015). Developing adaptations. ***Dev Rev***. 38:13-35. doi:10.1016/j.dr.2015.07.002

Bryman, Alan (2012). Social research methods (4th ed.). Oxford: Oxford University Press. ISBN 978-0-19-958805-3. OCLC 751832004.

Burgess, L. (2017, November 28). What to know about general adaptation syndrome. *Medical News Today*. Retrieved from https://www.medicalnewstoday.com/articles/320172.php

Campbell MJ, Machin D, & Walters SJ. (2007). *Medical Statistics: A Textbook for the Health Sciences. 4th ed*. Chichester: John Wiley & Sons, Ltd;

Campbell-Sills L, Forde DR, Stein MB. Demographic and Childhood Environmental Predictors of Resilience in a Community Sample. *J Psychiatr Res*. 2009;43(12):1007-12

Cates DS, Gomes PG, Krasilovsky AM: Behavioral health support for patients, Families, and healthcare workers. In: Bioemergency Planning: A Guide for Healthcare Facilities, pp 195–214. Edited by Hewlett A., Murthy A.R.K Cham, Switzerland, Springer, 2018.

Cavana, R.Y., Davies, P.K., Robson, R.M & Wilson. K.J. (1999). Drivers of quality in health Services: Different worldviews of clinician and policy managers revealed. *System Dynamics Review*. 15(3): 331-340

Chan, A.O., & Huak, C.Y. (2004). Psychological impact of the 2003 severe acute Respiratory syndrome outbreak on health care workers in a medium size regional general hospital in Singapore. Occupational Medicine, 54, 190–196. https://doi.org/10.1093/occ med/kqh027

Chesak, SS, Perlman, AI, Gill, PR, Bhagra, A. Strategies for Resiliency of Medical Staff during COVID-19. *Mayo Clin Proc.* 2020; 95:S56-S59.

Chong, M.Y., Wang, W.C., Hsieh, W.C., Lee, C.Y., Chiu, N.M., Yeh, W.C., ... Chen, L. (2004). Psychological impact of severe acute respiratory syndrome on health workers in a tertiary hospital. *British Journal of Psychiatry*, 185, 127–133. https://doi. org/10.1192/bjp.185.2.127

Claudia Carmassia., Valerio Dell' Ostea., Carlo Antonio Bertellonia., Virginia Pedrinellia., Filippo Maria Barberi., Paolo Malacarne., Liliana Dell'Ossoa. (2020). *Gender and Occupational Role Differences in Work-related Post-*

traumatic Stress Symptoms, Burnout and Global Functioning in Emergency Healthcare Workers.

Creswell, J.W., & Plano Clark, V.L. (2007). *Designing and Conducting Mixed Methods Research.* Thousand Oaks, CA: Sage.

Croghan, I. T., Chesak, S. S., Adusumalli, J., Fischer, K. M., Beck, E. W., Patel, S. R., Ghosh, K., Schroeder, D. R., & Bhagra, A. (2021). Stress, Resilience, and Coping of Healthcare Workers during the COVID-19 Pandemic. *Journal of Primary Care and Community Health*, *12*. https://doi.org/10.1177/21501327211008448

Cooper, D. R., & Emory, C. W. (1994). *Business Research Methods (5th edition)*. USA: Richard D. Irwin.

Cooper, D. R., & Schindler, P. S. (2003). *Business Research Methods (8th edition).* USA: McGraw-Hill.

Cooper, D. R., & Schindler, P. S. (2006). *Business Research Methods (9 th edition).* USA: McGraw-Hill.

Connelly, L. M. (2008). Pilot studies. *Medsurg Nursing*, 17(6), 411-2.

Connelly, L. M. (2008). Pilot studies. *Medsurg Nursing*, 17(6), 411-2.

COVIDNOW in Malaysia. COVIDNOW. Retrieved 27 September 2021.

Dai Y, Hu G, Xiong H, Qiu H, Yuan X. (2020) Psychological Impact of the Coronavirus Disease 2019 (COVID-19) Outbreak on Healthcare Workers in China. *MedRxiv.* 2020.

Denscombe, M. (2010). *The Good Research Guide for Small Scale Research Projects (4th Ed.).* Open University Press, McGraw-Hill Education.

Di Paolo EA, Barandiaran XE, Beaton M, Buhrmann T. (2014). Learning to perceive in the sensorimotor approach: Piaget's theory of equilibration interpreted dynamically. *Hum Neurosci*. 8. doi:10.3389/fnhum.2014.00551

Duncan D. (2020) What the COVID-19 pandemic tells us about the need to develop resilience in the nursing workforce. *Nurs Manage*. 27(3):22–27. doi:10.7748/nm.2020.e1933

Forero R, McCarthy S, Hillman K. Access block and emergency department overcrowding. Crit Care 2011; 15(2): 216

Ghasemi A, Zahediasl S. (2012). *Normality Tests for Statistical Analysis: A guide for non-Statisticians.* Int J Endocrinol Metab. 10:486–9.

Geltman PL, Augustyn M, Barnett ED et al. (2000). War Trauma Experience and Behavioral Screening of Bosnian Refugee Children Resettled in Massachusetts. 21:257–263

Gittleman, J. L. (n.d.). Adaptation. Encyclopedia Britannica Online. Retrieved from https://www.britannica.com/science/adaptation-biology-and-physiology https://en.wikipedia.org/wiki/Emergency_department

Hertzog, M.A. (2008). Considerations in Determining Sample Size for Pilot Studies. *Research in Nursing & Health*. 31.180-191.

Hill, R. (1998). What sample size is "enough" in internet survey research? Interpersonal Computing and Technology: An Electronic *Journal for the 21st Century*, 6(3-4).

Howlett, M., Doody, K., Murray, J., LeBlanc-Duchin, D., Fraser, J., & Atkinson, P. R. (2015). Burnout in emergency department healthcare professionals is associated with coping style: A cross-sectional survey. *Emergency Medicine Journal*, *32*(9), 722–727. https://doi.org/10.1136/emermed-2014-203750

Huebner M, Vach W, le Cessie S. (2016). A systematic approach to initial data analysis is good research practice. *J Thorac Cardiovasc Surg*. 151:25- 7

https://ms.wikipedia.org/wiki/Pandemik_COVID-19_di_Malaysia

https://en.wikipedia.org/wiki/Quantitative_research

Lee, S.M., Kang, W.S., Cho, A.R., Kim, T., & Park, J.K. (2018). Psychological impact of the 2015 MERS outbreak on hospital workers and quarantined hemodialysis patients. *Comprehensive Psychiatry*, 87, 123–127. https://doi.org/10.1016/j.comppsych.2018.10.003

Leiter M, Maslach C. Interventions to prevent and alleviate burnout, Chapter 8. In: Leiter M, Bakker A, Maslach C, eds. Burnout at work: a psychological perspective. London: Psychology Press, 2014.

Isaac, S., & Michael, W. B. (1995). *Handbook in research and evaluation*. San Diego, CA: Educational and Industrial Testing Services.

Ji, D., Ji, Y.J., Duan, X.Z., Li, W.G., Sun, Z.Q., Song, X.A., ... Chen, G.F. (2017). Prevalence of psychological symptoms among Ebola survivors and healthcare workers during the 2014–2015 Ebola outbreak in Sierra Leone: A cross-sectional study. *Oncotarget,* 8, 12784–12791. https://doi.org/10.18632/oncotarget.14498

Julious, S. A. (2005). *Sample size of 12 per group rule of thumb for a pilot study. Pharmaceutical Statistics,* 4, 287-291.

Kar, N., Kar, B., & Kar, S. (2021). Stress and coping during COVID-19 pandemic: Result of an online survey. *Psychiatry Research*, *295*, 113598.

https://doi.org/10.1016/j.psychres.2020.113598

Khalid, I., Khalid, T. J., Qabajah, M. R., Barnard, A. G., & Qushmaq, I. A. (2016). Healthcare workers emotions, perceived stressors and coping strategies during a MERS-CoV outbreak. *Clinical Medicine and Research*, *14*(1), 7–14. https://doi.org/10.3121/cmr.2016.1303

Koh, D., & Naing, L. (2014). Health, Workers'. *The Wiley Blackwell Encyclopedia of Health, Illness, Behavior, and Society*, 1132–1137. https://doi.org/10.1002/9781118410868.wbehibs168

Malaysia COVID-19 Cases. Www.worldometers.info. Retrieved 24 July 2021.

McAllister M, McKinnon J. The importance of teaching and learning resilience in the health disciplines: a critical review of the literature.

Majumder P.,Jeve, Y.,Sales, CP.,(2021). Voices from the Frontline: The Psychological Impact and Coping Mechanisms Used by Healthcare Staff during COVID-19. *British Journal of Healthcare Management.* 27 (6), 1-11, https://doi.org/10.12968/bjhc.2020.0168

Maslow AH. A theory of human motivation. Psychol Rev. 1943;50(4):370–396. https:/doi. org/10.1037/h0054346.

Michael A. Coletta, MPH1,2; Tegan K. Boehmer, PhD1,3; Jennifer Adjemian,

PhD1,2; Adi V. Gundlapalli, MD, PhD1,4; National Syndromic Surveillance Program Community of Practice. Impact of the COVID-19 Pandemic on Emergency Department Visits — United States, January 1, 2019–May 30, 2020.

Mohamad, M. I. B. K., & Ahmad, N. H. (2020). Covid-19 – how prepared are emergency departments in embracing the new norm? *Medical Journal of Malaysia*, *75*(5), 585–586.

Munawar, K., & Choudhry, F. R. (2021). Exploring stress coping strategies of frontline emergency health workers dealing Covid-19 in Pakistan: A qualitative inquiry. *American Journal of Infection Control*, *49*(3), 286–292. https://doi.org/10.1016/j.ajic.2020.06.214

Naoum, S., 2007, Dissertation Research and Writing for Construction Students, 2nd edn, Butterworth-Heinemann, Oxford.

Nilamadhab Kar Conceptualisation , Brajaballav Kar , Shreyan Kar , Stress and coping During COVID-19 pandemic: result of an online survey, Psychiatry Research (2020), doi: https://doi.org/10.1016/j.psychres.2020.113598

Nurse Educ Today. 2009;29:371–379. doi:10.1016/j.nedt.2008.10.011

Patel, R.S., Bachu, R., Adikey, A., Malik, M., Shah, M., 2018. Factors Related to Physician Burnout and Its Consequences: A Review. Behav Sci (Basel) 8. https://doi.org/10.3390/bs8110098.

Qian Hui Chew 1 , Faith Li-Ann Chia 2,3, Wee Khoon Ng 4,5 , Wan Cheong Ivan Lee 6 , Pei Lin Lynnette Tan 7 , Chen Seong Wong 8,9, Ser Hon Puah 10,11, Vishalkumar G. Shelat 12,13 , Ee-Jin Darren Seah 14,15, Cheong Wei Terence Huey 13,16, Eng Joo Phua 2,17 and Kang Sim 18,19,* Perceived Stress, Stigma, Traumatic Stress Levels and Coping Responses amongst Residents in Training across Multiple Specialties during COVID-19 Pandemic—A Longitudinal Study. Published: 9 September 2020

Resilience of primary healthcare professionals working in challenging environments: a focus group study. Br J Gen Pract. 2016;66

Roslan, N. S., Yusoff, M. S. B., Asrenee, A. R., & Morgan, K. (2021). Burnout prevalence and its associated factors among Malaysian healthcare workers during covid-19 pandemic: An embedded mixed-method study. *Healthcare (Switzerland)*, *9*(1). https://doi.org/10.3390/healthcare9010090.

Saunders, M., Lewis P., & Thornhill, A. (2009). *Research Methods for Business Students (5thedition).* New Jersey: Prentice Hall.

Sekaran, U. (2003). *Research Methods for Business: A Skill Building Approach (4th edition)*. New Jersey: John Wiley and Sons.

Sipalan, Joseph; Holmes, Sam (25 January 2020). "*Malaysia confirms first cases of coronavirus infection"*. Reuters. Diarkibkan daripada yang asal pada 18 February 2020. Dicapai pada 18 February 2020

Southeast Asia Covid-19 Tracker. *Center for Strategic and International Studies*. 28 January 2020. Retrieved 28 January 2020.

Souza, J. L. de, Teich, V. D., Dantas, A. C. B., Malheiro, D. T., Oliveira, M. A. de, Mello, E. S. de, & Cendoroglo Neto, M. (2021). Impact of the COVID-19 pandemic on emergency department visits: experience of a Brazilian reference center. *Einstein (Sao Paulo, Brazil)*, *19*(23), eAO6467. https://doi.org/10.31744/einstein_journal/2021AO6467

Sundaram KR, Dwivedi SN, Sreenivas V. (2014). *Medical Statistics: Principles and Methods. 2nd ed.* New Delhi: Wolters Kluwer India

Treece, E. W., & Treece, J. W. (1982). *Elements of Research in Nursing (3rd ed.).* St. Louis, MO:Mosby.

van Belle, G. (2002). *Statistical Rules of Thumb.* New York: John Wiley.

van Teillingen, E. R., & van Hundle (2014) Conducting and Reporting Pilot Studies: The Example of the Scottish Births Survey. *Journal of Advanced Nursing.* 34: 289-295

Wang C, Horby P. W, Hayden, F. G, Gao,. G. F. (2020*). A Novel Coronavirus Outbreak of Global Health Concern.* Lancet 395:470–473. https://doi.org/10.1016/S0140-6736(20)30185-9

WHO. Guidelines on core components of infection prevention and control programs at the National and acute health care facility level. WHO. 2016. Cited 2020 Jun available from: http://www.who.int/gpsc/ipccomponents-guidelines/en/.

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2009). *Business Research Methods (8th edition).* USA: South-Western College Publishing.

APPENDICES

Appendix 1

Brief Resilience Scale (BRS)

Respond to each statement below by circling one answer per row.		Strongly Disagree	Disagree	Neutral	Agree	Strongly Agree
BRS 1	I tend to bounce back quickly after hard times.	1	2	3	4	5
BRS 2	I have a hard time making it through stressful events.	5	4	3	2	1
BRS 3	It does not take me long to recover from a stressful event.	1	2	3	4	5
BRS 4	It is hard for me to snap back when something bad happens.	5	4	3	2	1
BRS 5	I usually come through difficult times with little trouble.	1	2	3	4	5
BRS 6	I tend to take a long time to get over setbacks in my life.	5	4	3	2	1

Scoring: Add the value (1-5) of your responses for all six items, creating a range from 6-30. Divide the sum by the total number of questions answered (6) for your final score.

Total score: _____ / 6

My score: _____ (average)

BRS Score	Interpretation
1.00 - 2.99	Low resilience
3.00 - 4.30	Normal resilience
4.31 - 5.00	High resilience

Smith, B.W., Dalen, J., Wiggins, K., Tooley, E., Christopher, P. and Bernard, J. (2008). The Brief Resilience Scale: Assessing the Ability to Bounce Back. *International Journal of Behavioral Medicine*, 15, 194-200.

Appendix 2

BRIEF RESILIENT COPING SCALE

© Sinclaire and Wallston, 2004

BRCS Instructions: ***Consider how well the following statements describe your behavior and actions.***	(1) Does not describe me at all	(2) Does not describe me	(3) Neutral	(4) Describes me	(5) Describes me very well
I look for creative ways to alter difficult situations.					
Regardless of what happens to me, I believe I can control my reaction to it.					
I believe I can grow in positive ways by dealing with difficult situations.					
I actively look for ways to replace the losses I encounter in life.					

Sinclair, V. G., & Wallston, K.A. (2004). The development and psychometric evaluation of the Brief Resilient Coping Scale. Assessment, 11 (1), 94-101. https://www.ncbi.nlm.nih.gov/pubmed/14994958

An online, self-scoring version is available at: https://www.psytoolkit.org/survey-library/resilience-brcs.html# (You will need to scroll down and click "run the demo" to access the online test.)

BRCS Interpretation	Score range
Low resilient copers	4-13 points
Medium resilient copers	14-16 points
High resilient copers	17-20 points

Appendix 3

Perceived Stress Scale

A more precise measure of personal stress can be determined by using a variety of instruments that have been designed to help measure individual stress levels. The first of these is called the Perceived Stress Scale.

The Perceived Stress Scale (PSS) is a classic stress assessment instrument. The tool, while originally developed in 1983, remains a popular choice for helping us understand how different situations affect our feelings and our perceived stress. The questions in this scale ask about your feelings and thoughts during the last month. In each case, you will be asked to indicate how often you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way; rather indicate the alternative that seems like a reasonable estimate.

For each question choose from the following alternatives:
0 - never 1 - almost never 2 - sometimes 3 - fairly often 4 - very often

_____ 1. In the last month, how often have you been upset because of something that happened unexpectedly?

_____ 2. In the last month, how often have you felt that you were unable to control the important things in your life?

_____ 3. In the last month, how often have you felt nervous and stressed?

_____ 4. In the last month, how often have you felt confident about your ability to handle your personal problems?

_____ 5. In the last month, how often have you felt that things were going your way?

_____ 6. In the last month, how often have you found that you could not cope with all the things that you had to do?

_____ 7. In the last month, how often have you been able to control irritations in your life?

_____ 8. In the last month, how often have you felt that you were on top of things?

_____ 9. In the last month, how often have you been angered because of things that happened that were outside of your control?

_____ 10. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?