THE ROLE OF JOB DEMAND, EMPLOYEE RESILIENCE AND SOCIAL SUPPORT ON PSYCHOLOGICAL STRESS AMONG NON-CLINICAL STAFFS

ZUL HILMI BIN SHAMSUDDIN

MASTER OF SCIENCE (OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT)

UNIVERSITI UTARA MALAYSIA

JANUARY 2026

THE ROLE OF JOB DEMAND, EMPLOYEE RESILIENCE AND SOCIAL SUPPORT ON PSYCHOLOGICAL STRESS AMONG NON-CLINICAL STAFFS

By

ZUL HILMI BIN SHAMSUDDIN

Project Paper Submitted to

School of Business Management

Universiti Utara Malaysia

in Partial Fulfilment 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)
ZUL HILMI SHAMSUDDIN (833280)

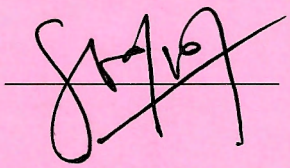
Calon untuk Ijazah Sarjana
(Candidate for the degree of)
MASTER OF SCIENCE (OCCUPATIONAL SAFETY AND HEALTH MANAGEMENT)

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

THE ROLE OF JOB DEMAND, EMPLOYEE RESILIENCE AND SOCIAL SUPPORT ON PSYCHOLOGICAL STRESS AMONG NON-CLINICAL STAFFS

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 *(Name of 1st Supervisor)*	:	**ASSOC. PROF. DR. SITI ZUBAIDAH OTHMAN**
Tandatangan *(Signature)*	:	
Tarikh *(Date)*	:	**29 JANUARY 2026**

Permission to Use

In presenting this dissertation/project paper in partial fulfillment of the requirements for a Post Graduate degree from the Universiti Utara Malaysia (UUM), I agree that the Library of this university may make it freely available for inspection. I further agree that permission for copying this dissertation/project paper in any manner, in whole or in part, for scholarly purposes may be granted by my supervisor(s) or in their absence, by the Director of Postgraduate Studies Unit, College of Business where I did my dissertation/project paper. It is understood that any copying or publication or use of this dissertation/project paper parts of it for financial gain shall not be allowed without my written permission. It is also understood that due recognition shall be given to me and to the UUM in any scholarly use which may be made of any material in my dissertation/project paper.

Request for permission to copy or to make other use of materials in this dissertation/project paper in whole or in part should be addressed to:

Dean of Othman Yeop Abdullah Graduate School of Business

Universiti Utara Malaysia

06010 UUM Sintok

Kedah Darul Aman

Abstract

Psychological stress is posing serious threats to occupational health within the healthcare setting and more specifically for the hospital support services working under high levels of job demands and constant service delivery expectations. Though there is an abundance of literature on the clinical healthcare workforce, non-clinical hospital concession employees have received marginal attention and even more so within the Malaysian Public–Private Partnership (PPP) model that leave a significant gap of knowledge on the psychosocial threats that they encounter.Therefore, this study is conducted with the intention to capture factors that might influence psychological stress among non-clinical staffs in hospital. The study tested three independent variables namely, job demand, employee resilience, and social support against psychological stress. A total of 142 questionnaire were distributed online using Google form with response rate of 90.84%. In this study, hypotheses for direct relationhsip were tested using multiple regression analyses. Results showed that only employee resilience and social support were negatively related to psychological stress. The findings indicate that psychological stress tend to reduce when employees have high resiliency and receive high social support from colleagues and supervisors. Interestingly, job demand does not influence non-clinical staffs psychological stress. These findings provide new insight where on issues of psychological stress among non-clinical staffs in hospital in Malaysia. The question of why having high job demand does not influence the psychological stress experienced by the no-medical staffs in hospital provide opportunity for future research to reconcile these explanations.

Keywords: Psychological stress, Job Demand, Employee resilience, Social support, Non-clinical staffs

Abstrak

Tekanan psikologi semakin menimbulkan ancaman serius terhadap kesihatan pekerjaan dalam persekitaran penjagaan kesihatan khususnya dalam kalangan perkhidmatan sokongan hospital yang beroperasi di bawah tahap tuntutan kerja yang tinggi dan jangkaan penyampaian perkhidmatan yang berterusan. Walaupun terdapat banyak kajian berkaitan tenaga kerja klinikal, pekerja konsesi hospital bukan klinikal masih kurang diberi perhatian terutamanya dalam konteks model Perkongsian Awam–Swasta (PPP) di Malaysia yang mana sekali gus mewujudkan jurang pengetahuan yang ketara berkaitan ancaman psikososial yang mereka hadapi. Oleh yang demikian, kajian ini dilaksanakan dengan hasrat untuk mengenal pasti faktor yang mungkin mempunyai hubungan dengan tekanan psikologikal dalam kalangan staf bukan klinikal. Kajian ini menguji tiga pembolehubah tidak bersandar iaitu tuntutan kerja, ketahanan pekerja dan sokongan sosial terhadap tekanan psikologikal. Sebanyak 142 borang soal selidik telah diedarkan secara atas talian menggunakan borang *Google* dengan kadar maklumbalas adalah sebanyak 90.84%. Dalam kajian ini, hipotesis ke atas kesan hubungan langsung diuji menggunakan analisis regresi berganda. Dapatan kajian menunjukkan bahawa hanya ketahanan pekerja dan sokongan sosial mempunyai hubungan negatif yang signifikan dengan tekanan psikologikal. Dapatan ini memberi gambaran bahawa tekanan psikologikal akan menurun apabila pekerja mempunyai ketahanan diri yang tinggi dan menerima sokongan sosial yang tinggi daripada rakan sekerja dan penyelia. Apa yang menarik, tuntutan kerja tidak mempengaruhi tekanan psikologikal dalam kalangan staf bukan klinikal. Dapatan ini memberi pandangan baharu tentang isu tekanan psikologikal dalam kalangan staf bukan klinikal di hospital di Malaysia. Persoalan tentang kenapa tuntutan kerja yang tinggi mempengaruhi tekanan psikologikal yang dialami oleh staf bukan klinikal di hospital memberi peluang kepada kajian masa hadapan untuk merungkai persoalan ini.

Kata kunci: Tekanan psikologikal, Tuntutan kerja, Ketahanan pekerja, Sokongan sosial, Staf bukan klinikal

Acknowledgements

I would like to thank all the academics and administrative staff of Universiti Utara Malaysia, especially the Othman Yeop Abdullah Graduate School of Business and School of Business Management, College of Business for the invaluable support throughout my candidature. I owe an immense debt to Assoc. Prof Dr Siti Zubaidah Othman, my supervisor for all the energy, care and enthusiasm she devoted to this effort. Her belief in my potential have made me feel confident and gave me strong focus from the very beginning of my study.

I also would like to thank all the respondents from Edgenta Mediserve who have took their time to participate in this research. Without their sincere participation, this study will not be as successful as today

I am profoundly grateful to my beloved mother, Romoh binti Musa, for her prayers and support that fueled my strength and motivation throughout my educational pursuit. I appreciate my wife, Ruhana binti Bakri, for her support and understanding and my son, Zul Hisyam bin Zul Hilmi, for the inspiration to strive and finish this research,.The three of you have given me the best motivation to work on this research.

I would also like to acknowledge my family members, friends and colleagues who have offered support, encouragement and assistance in various form.

Table of Content

Permission to Use i
Abstract ii
Abstrak iii
Acknowledgements iv
Table of Content v
List of Tables viii
List of Figures ix
CHAPTER 1 INTRODUCTION 1
1.1 Background of the Study 1
1.2 Problem statement 3
1.3 Research Questions 7
1.4 Research Objectives 8
1.5 Significance of Study 8
1.6 Scope of Study 9
1.7 Definition of Key Terms 9
1.8 Organization of Chapters 10
CHAPTER 2 LITERATURE REVIEW 12
2.1 Introduction 12
2.2 Overview of Stress 12
2.3 The Conceptualization of Study Variables 16
2.3.1 Psychological Stress 16
2.3.2 Job Demand 18
2.3.3 Employee Resilience 21
2.3.4 Social Support 24
2.4 Factors related to Psychological Stress 27
2.5 Research Framework 29
2.6 Hypotheses Development 30
2.6.1 Relationship between Job Demand and Psychological Stress 30
2.6.2 Relationship between Employee Resilience and Psychological Stress .. 31
2.6.3 Relationship between Social Support and Psychological Stress 32
2.7 Conclusion 32
CHAPTER 3 METHOD 33

3.1 Introduction 33
3.2 Research Design 33
3.3 Population and Sampling 34
3.3.1 Study Population 34
3.3.2 Sample Size 35
3.3.3 Sampling Technique 37
3.4 Operational Definitions and Measurements 39
3.4.1 Psychological Stress 39
3.4.2 Job Demand 40
3.4.3 Employee Resilience 41
3.4.4 Social Support 43
3.5 Questionnaire Design 44
3.6 Data Collection Procedure 44
3.6.1 Pre-test 44
3.6.2 Pilot Study 45
3.6.3 Actual Data Collection 47
3.7 Data Analysis Strategy 47
3.7.1 Descriptive Analysis 47
3.7.2 Correlation Analysis 48
3.7.3 Regression Analysis 49
3.8 Conclusion 50
CHAPTER 4 FINDINGS 51
4.1 Introduction 51
4.2 Response Rate 51
4.3 Data Screening 51
4.4 Demographic Characteristic of the Participants 52
4.5 Descriptive Analysis of Variables 55
4.6 Correlation Analysis 59
4.7 Multiple Regression Analysis 60
4.8 Conclusion 62
CHAPTER 5 DISCUSSION, RECOMMENDATION AND CONCLUSION 63
5.1 Introduction 63
5.2 Recap of the Study 63
5.3 Relationship between Job Demand and Psychological Stress 64

5.4 Relationship between Employee Resilience and Psychological Stress..... 65
5.5 Relationship between Social Support and Psychological Stress..... 66
5.6 Contribution of Study..... 67
5.6.1 Contribution towards Knowledge..... 67
5.6.2 Contribution towards Practice..... 67
5.7 Limitations and Direction for Future Study..... 68
5.8 Conclusion..... 69
REFERENCES..... 70
APPENDICES..... 78

List of Tables

Table 1.1 *Definition of Key Terms* 9
Table 3.1 *Number of Non-clinical Staffs based on Type of Services* 34
Table 3.2 *Sample Size and Over Sampling Size for Each of Type of Services* 38
Table 3.3 *Psychological Stress Items* 40
Table 3.4 *Job Demand Items* 41
Table 3.5 *Employee Resilience Items* 42
Table 3.6 *Social Support items* 43
Table 3.7 *Reliability Analysis on Pilot Study* 46
Table 4.1 *Result of Normality Analysis* 52
Table 4.2 *Demographic Characteristic of the Participants (n=129)* 53
Table 4.3 *Descriptive Analysis of Constructs* 56
Table 4.4 *Descriptive Analysis of Psychological Stress Items* 56
Table 4.5 *Descriptive Analysis of Job Demand Items* 57
Table 4.6 *Descriptive Analysis of Employee Resilience Items* 58
Table 4.7 *Descriptive Analysis of Social Support Items* 59
Table 4.8 *Descriptive Statistics, Scale Reliabilities, and Correlations of Variables* 60
Table 4.9 *Multiple Regression Analysis* 61
Table 4.10 *Summary of Hypotheses Testing* 61

List of Figures

Figure 2.1 *Research Framework* 30

CHAPTER 1

INTRODUCTION

1.1 Background of the Study

Physiological stress caused by work is a globally spread phenomenon especially in industries with complicated, uninterrupted and extremely demanding workflows. All industries across the globe are facing increased demands due to rise in expected output, rapid change in technology and constant demand for improvement. Work-induced stress, through the form of anxiety and depression, accounts for more than 12 billion lost workdays annually and results in a loss of productivity of about USD 1 trillion (World Health Organization, 2022). The figures show how workplace-related stress affects employees and the organization as a whole.

The healthcare sector is universally acknowledged as one of the most susceptible to workplace stress because of the nature of its work environments. Work environments in healthcare are high-paced, require life-critical decision making and require people to be operationally ready 24/7. One systematic review suggested that up to 45% of health care workers report experiencing overwhelming stress and that there is a pooled prevalence of anxiety and depression that reaches 25–40% (Saragih et al., 2021). This is no different than the findings of a hospital-based study in Malaysia that reported that 38.6% of employees experienced anxiety and 18.7% of employees experienced depression (Woon & Tiong, 2020). These manifestations of mental health problems are strongly correlated to work ability and are significant predictors of burnout, and decreased performance at work. Recently, Asia News Network 2025 published that there is a high and increasing level of stress experienced by employees

of hospitals in Malaysia and that there has been a significant increase in the number of patients, complicated requests for services, and demands to meet accreditation requirements.

Psychological stress also impacts non-clinical Hospital Support Services (HSS) staff such as maintenance workers who work for concession compony in hospital. They also experience a specific set of stressors since they need to keep the hospitals functioning without interruptions. In Malaysia, the efficiency of government hospitals was enhanced through a Public-Private Partnership (PPP) model (Rodrigues 2023) where private concessionaires were and still are responsible for the non-clinical maintenance of the facilities. Concession employees face a number of challenges such as having to comply with emergency service-level agreements (SLAs), constant emergency service delivery and being subjected to surveillance of their performance. They have to manage extreme multitasking, restricted work environment and high workloads. They are also under intense pressure coming from healthcare management and the concession companies. Such work conditions have the tendency of making people lose the motivation to work, experience fatigue, emotional exhaustion and strain (Ning et al, 2023).

Taking these concerns into consideration, the existing literature reveals some gaps. To begin, regarding the population, most occupational stress studies in Malaysia concentrate on clinical employees that leave non-clinical or concession workers who are vital to the functioning of hospitals, almost entirely studied (Okirie, 2024; Wong et al., 2021). Next, regarding the variables, the effect of job demand, employee resiliency and social support on psychological stress within this workforce remains under-examined. Next, the context of Malaysia's healthcare support services, particularly the PPP (Public Private Partnership) models and the growing demand for

technology has been poorly studied in recent literature. These gaps must be filled to fill knowledge of job demands can help concession companies and hospitals design better and safer work arrangements (Wong et al., 2021; Othuman Mydin et al., 2014; Baharudin, 2022). To inform the design of mental health and coping programmes and initiatives, employee resiliency will be studied. To enhance the social support system within technical teams, social support will be studied too. These outcomes will strengthen the organization by improving quality of services, reducing absenteeism and turnover and enhancing overall productivity.

Thus, this study seeks to explore the relationships of job demand, employee resiliency, social support and psychological stress of hospital concession employees in Malaysia. This research focuses on this understudied population, allowing the research to address meaningful theoretical and contextual gaps and provide insights into occupational safety and health management. Therefore, this background is compelling and leads naturally to the problem statement of this study.

1.2 Problem statement

In Malaysia, work-related psychological distress is becoming a concern, especially in the healthcare sector where employees have to work in a demanding, complex and fast-paced environment. Malaysian healthcare settings have recorded instances of psychological stress which continue to be a concern for the occupational health field. Shah et al. (2025) conducted large scale research in Selangor with 4,593 frontline healthcare workers. In his study, he found that 14.8% of the respondents have stress, 30.7% have anxiety, and 20.4% experienced depression. Those employed by hospitals were more vulnerable due to high workloads and low organizational support.

Ismail et al. (2025)'s research showed hospital workers had psychological stress and burnout with emotional burnout largely caused by being short-staffed, having high job demands, and fear of infection. Rahman et al. (2021) also reported evidence that high psychosocial job demands and long working hours were contributors to high stress levels for healthcare workers and psychosocial risks were evident for the work environment of the hospitals.

Hospitals in Malaysia have a growing number of patients, increasing service demands, strict accreditation requirements and ever-existing operational demands which add to the pressure on their staff (Muhammad Nur & Anuar, 2020). These operational and structural factors create an environment where healthcare employees experience work-related distress and emotional issues such as anxiety, burnout, exhaustion and fatigue. Local studies have shown that a significant number of hospital employees have work-related mental health distress which shows that psychological stress is pervasive and systemic in the healthcare system in Malaysia (Woon & Tiong, 2020). These patterns point out that stress in the healthcare sector is not only due to individual factors, as there are systemic organizational and environmental issues at play.

As far as most work-related stress in health care is concerned, the literature is primarily focused on the clinicians like doctors, nurses and other allied health staff. This group has been found time and again to have extreme emotional labour, long working hours, diversified patient-care responsibilities and significant weight in the hierarchy of decision-making which all allow for a higher probability of increased stress (Saragih et al. 2021). These clinical stressors have been documented in the literature and are the clinical stressors most likely to be the focus of greyer interventions and policy discussions. Yet, as valid as the clinical focus, it is still only

a small fraction of the total stress picture in a hospital. Increasingly, it is becoming evident that other hospital (non-clinical) staff, especially those employed in maintenance and facilities management concession company that are as much endangered as their stressors are mostly ignored by academia. For instance, one of the very few workload studies on a hospital maintenance department in India reported that their staff had an average of 9.24 hours of work per day compared to the desired 7.5 hours which means that, on average, they worked 1.7-2 hours of overtime every day (Alvita et al., 2025). These workers are the ones that keep the vital hospital infrastructure operational. These include the hospital's electrical systems, heating, cooling and ventilation, building maintenance, waste management, and engineering/technical support.

In contrary to the clinical employees, their labor take place covertly but the workload expectations of them are considerable (Wong, Olanrewaju & Lim, 2021). They are required to adhere to strict service-level agreements (SLAs), attend to defined technical difficulties promptly, handle reactive maintenance work, function within constricted timeframes and more frequently than not, work on operational crises after hours. These tasks lead to considerable exposure to physical, mental and managerial strain as well as constant surveillance of their work performance from the hospital management and the concession company.

In the given context, the following question arises: Do stress-related elements, such as excessive job obligations, reduced coping ability and social support deficiency that affected clinical staff members would also applicable to non-clinical concession employees within Malaysian hospitals? Even though these stressors exist, there has been very little research conducted in Malaysia on the psychological stress of hospital maintenance and facility support staff. Research on this population has been limited

and is quite often disparate, resulting in an understanding of how job demands, coping ability (resiliency) and social support within the workplace intertwined to affect the stress levels of this population. These layered issues are what constitutes the gap in research to contradict the overabundance of research on clinical staff resulting in an unfortunate inequity of knowledge on the true foundational support of the healthcare system. Non-clinical staff also function within an exclusive organizational framework of the public-private partnerships (PPP), contractual agreements, expected outcomes, performance metrics and system-level requirements that could greatly vary from clinical settings. This focuses on the need to identify whether the same stressors observed in clinical staff are applicable to concession employees as well.

Unfortunately, the few existing studies tend to show that non-clinical personnel report high levels of stress variables such as excessive work, ambiguity of role, lack of training, burnout and pressure to achieve strict key performance indicators with little to no organizational support. Such stressors `can lead to psychologcial strain, lack of focus, emotional exhaustion and demotivation (Alvita et al., 2025). Unmanaged stressors is ultimately reflected in high rates of absenteeism, increased turnover intentions, lower work output and ultimately decreased organizational efficiency and effectiveness. In the healthcare system where smooth operational support is of the utmost importance, these negative consequences related to stress can severely disrupt the healthcare system may lead to gaps in service delivery and compromise patient care. This gap in the healthcare literature suggests that non-clinical personnel also face a unique and understudied stress experience related to high levels of organizational and technological stress.

Consequently, the concession worker's stress level is a major drawback. Because service tenants and facility administration are the foundation of a hospital's

operableness, a decrease in the degree of wellness of this category of staff tends to compromise the overall competences of the health care system. However, it is a paradox that the empirical evidence that documents the extent of this concern and the component of the stress is found to be virtually non-existent. Hence, the most rational and immediate step would be to study job demand, resilience and social support in hospital concession staff's psychological distress. This is particularly important to bridge the gap in research which also examines the relevance of these variables in the clinical context and in particular whether these variables can explain stress in non-clinical maintenance staff of the health system operating in a PPP model.

This study attempts to address the identified gap by analyzing the connection among job demand, resiliency, social support and psychological stress among maintenance and facilities management employees of hospital concession companies. This study intends to offer substantial knowledge for informing organizational strategies and support mechanisms to improve the health care system in Malaysia and for the research purpose.

1.3 Research Questions

Based on the discussion on psychological stress issues, the central question for this study would be "what factors contribute to individual's psychological stress?" Specifically,

1. Does job demand related to psychological stress?
2. Does employee resilience related to psychological stress?
3. Does social support related to psychological stress?

1.4 Research Objectives

Generally, this study aims to examine factors that might influence psychological stress among non-clinical staffs. Therefore, to answer the research questions posted above, the following research objectives were formulated:

1. To identify the relationship between job demand and psychological stress;
2. To examine the relationship between employee resilience and psychological stress; and
3. To investigate the relationship between social support and psychological stress

1.5 Significance of Study

This study is significant in the sense that the empirical findings that emerge from this study can enrich the existing literature on psychological issues. The current study may provide with new findings on how job demand, employee resiliency, and social support directly influence psychological stress especially those involving non-clinical staffs. These might give new insight for scholars on factors that might or might not influence non-clinical staffs psychological stress issues working in hospital.

The empirical findings from this study can also provide practical solutions for practitioners especially the management on how to reduce psychological stress experience by their non-clinical staffs. By exploring how job demand, employee resilience and social support could directly influence psychological stress, the management can have some inputs on what kind of initiatives that could be taken to address the issues.

1.6 Scope of Study

The main focused of this study is to investigate factors that might influence psychological stress among non-clinical staffs working in hospital. To uncover what causes psychological stress among non-clinical staffs, three independent variables namely, job demand, employee resilience and social support were tested. To test the relationship between these variables, a quantitative approach was utilized where data were collected through online survey using Google form. Using a cross-sectional study, data were collected at one point of time. Unit of analysis is at the individual level where non-clinical staffs were taken as respondent in this study. Data collected were then analyzed using SPSS (version 30) program for Windows where multiple regression is conducted to test the proposed hypotheses.

1.7 Definition of Key Terms

Table 1.1
Definition of Key Terms

Term	Description
Psychological Stress	Psychological stress is an emotional reaction which exhibits certain biochemical, physiological, and behavioral responses (Nargund 2015). This type of stress is a reaction that resulted from emotional and triggering responses and is due to a lack of ability to cope with the stressor.
Job Demand	Job demands are the psychological, social, and physical parts of a job which require a worker to invest a great deal of effort are related to and are associated with some on the job mental and physical costs (Bakker & Demerouti, 2024).
Employee Resilience	This term employee resilience refers to an employee's ability to bounce back from setbacks, maintain a positive attitude, and continue to be productive and effective at work despite difficulties and challenges (Kuntz et al., 2016). It describes an

Term	Description
	employee's ability to adapt to constant changes in the workplace.
Social Support	Social support refers to social interaction with colleagues and supervisors which is advantageous to one's own well-being. It is also can be understood as a form of instrumental support, if it refers to additional resources provided by colleagues and supervisors (Karasek & Theorell, 1990)

1.8 Organization of Chapters

This chapter is the first of five chapters in this project paper. Chapter 2 provides with general review of the literature on psychological stress. The concept of psychological stress and how it can be measured are also presented. Discussion in Chapter 2 continues with past empirical findings on factors that might influence psychological stress and this includes the role of job demand, employee resilience, and social support. The chapter also discusses the research framework tested in the study. The chapter concludes with the development of the research hypotheses.

Chapter 3 describes the method for the study and these include the discussion on the research design, selection of respondents, sample types and size, and the development of research measures. Chapter 3 concludes with a brief description on the strategies and procedures that were used to analyze data collected from the survey.

Chapter 4 reports results of the study. There are reports of the descriptive statistical analysis, bivariate correlation analysis, and regressions analysis. The results are summarized in number of tables to facilitate interpretation.

Chapter 5 discusses the interpretation of the research findings for the study. The findings are compared to those found in the past research reviewed in Chapter 2. The chapter ends with a discussion on limitations of the study, their implications for both researchers and practitioners, and some suggestions for future research.

CHAPTER 2

LITERATURE REVIEW

2.1 Introduction

This chapter discusses issues related to psychological stress as presented in the literatures. The chapter starts with describing the concept of stress in general. It then followed by discussing the conceptualization of study variables which include psychological stress, job demand, employee resiliency, and social support. The chapter then reviews past empirical studies on factors that related to psychological stress. The chapter concludes by discussing the research framework and the development of hypotheses.

2.2 Overview of Stress

Non-clinical health care staff especially those in maintenance and tech are the true backbone of any health care establishment (Bucala et al., 2025). They are tasked to keep the more complex systems of the hospital updated by making sure that the life-support systems and other critical systems are in working order. They fix broken machines and make sure the hospital meets safety and hygiene standards. However, worrying about completing these tasks is very stressful. A broken machine or uncompleted repair may put a patient's life in danger and decrease the efficiency of the hospital. Besides that, maintenance workers experience a special type of stress. They are called maintenance workers but in emergencies they are often referred to as the 'reaction' employees and are the only ones who can be reached to fix the problem.

This makes the workload very unpredictable and encompasses a period of a high state of urgency for the worker.

In psychology and health research, stress is a central construct that embodies the interaction of environmental challenges, personal appraisal, and bio-psychosocial response. Current research views stress as a process whereby stimuli of varying magnitude construct and eject predicted physiological, psychological, and behavioural responses (Ghasemi et al., 2024). This perspective clarifies that stress is unique for individual, and is corelate to the stress response, stressor interpretation, and the individual systems for stress management.

The early scientific explanations of stress were based on stress as a biological phenomenon involving the body's response to environmental challenges. O'Connor et al. (2021) notes stress as a process through which individual's adaption to challenges as a process that is core to survival and the stress response mechanisms ought to be efficiently engaged and disengaged. However, as stress exposure increases, mechanism that ought to be adaptive become detrimental and increase the individual's susceptibility to diseases of the mind and body (O'Connor et al, 2021)

As of today, stress has recently been conceptualized and differentiated from stressors and stress responses. Stress is conceptualized as a state of disrupted homeostasis, as opposed to an imbalance being a reaction to an external stimulus or fully physiological in nature (Lu et al., 2021). In psychological research, this is an important distinction as it clarifies that stress is an event where internal stimuli is an event and external regulation is a stressor. Within a stress response theory framework, the stress response is the result of a multidimensional coordinated response involving important systems, particularly the hypothalamic-pituitary-adrenal (HPA) axis and the autonomic nervous system (ANS) (O'Connor et al., 2021). These systems when

activated result in the production and secretion of stress hormones such as cortisol and the catecholamines which increase the body's energy and preparedness to deal with potential threats (O'Connor et al., 2021). These physiological changes increase the body's adaptive capacity in the short term but if the systems remain activated, can lead to negative health outcomes.

The cognitive appraisal processes and coping strategies of individuals greatly impact psychological stress. Ghasemi et al. (2024) explain that stress includes emotional and behavioural factors and that the individuals' emotional and behavioral factors are in response to the way they identify and react to the challenges presented in their environment. Encountering psychological stressors in cycles can lead to changes in stress response patterns and these changes can lead to an increasing risk of emotional dysregulation, cognitive functioning impairment and stress-related mental issues such as depression and anxiety (Ghasemi et al., 2024).

The understanding of the different types of stress is important to determine that stress is not always bad. The literature from recent years discusses the differences present in eustress, and distress which helps explain the different effects that stress exposure can have on an individual. Lu et al. (2021) describes these effects when they state that stress at moderate levels helps the individual adapt and optimally function but stress levels that are too high or too low leads the individual to a weakened capacity to adapt. The differences of stress levels that impact an individual highlights that the focus should not be stress elimination but rather a balance of different levels of stress to achieve psychological well-being.

Stress does impact health in different and possibly more alarming ways depending on how long and how frequently that stress is experienced. Most acute stress experiences respond through short-term, adaptive changes that are essential for

someone being able to make it through immediate challenges. However, chronic stress is activated through prolonged and even permanent changes in one's stress-response systems and there are physiological and psychological costs that are cumulatively incurred. These burdens associated with multiple biological systems and long-term costs are what O'Connor and colleagues (2021) refer to as allostatic load.

There are no biological or psychological systems that all uniformly calibrate or adapt to the same amount of stress. While some conflicted individuals ease into the same amount of psychosocial stress as others and some do not. Barthel et al. (2025) argue that these residuals, unmodified, stress responses are not the result of intact control system, and these systems are not flexibly adaptive to the chronic psychological stress situations. These theories are directly the result of poorer health outcomes and are what Barthel et all (2025) refer to as increasing the allostatic load.

The more systemic effect of stress is also evident in how its' able to influence immune system functioning supported by Alotiby (2024). Alotiby (2024) states that acute stress brought on by certain situations can result in a temporary increase in immune functioning as the stress is not chronic in nature as immune dysregulation can occur as a stress-response. This is evidenced in the prolonged activation of the HPA uncontrolled axis and in the chronic secretion of cortisol that are also termed as chronic inflammation. These elements combine to make someone automatically more susceptible to immune system functioning disorders and infections.

In summary, stress serves as a multidimensional and dynamic phenomenon as it comprises the interplay of cognitive appraisal, physiological activation and behavioural adaptation. Stress may enable be short-term adaptation and increased resilience. However, it may also lead to chronic and unregulated stress which can be detrimental to one's psychological and physical health. The definition of stress as a

process which varies with respect of intensity, duration and regulation is a building block to explore psychological stress in the following sections of this literature review.

2.3 The Conceptualization of Study Variables

2.3.1 Psychological Stress

Psychological stress involves the internal reaction to the interaction of environmental and intrapersonal demands. Modern stress literature discusses that psychological stress is not a mere external factor or a mere stress responses, but it is a state of mind (Lu et al, 2021). As a response to psychological stress, there is a challenge or problem that arises when the individual resources are low (the personal resources) and there are high external demands (cognitive appraisal).

Theoretically, stress is defined and explained through stimulus based, response based, and the transaction approaches. Within the transaction perspectives, stress is defined to be a factor of the integration of the individual and the environment and it exists when the perceived demands are high and the resources needed to cope with low the demands (Cohen et al., 2016). This also shows that psychological stress is dominated by the subjective evaluation and stress appraisal of the individual instead of the environmental exposure itself.

Psychological stress not only differs from stressors and stress reaction with stressors being an external or internal force that can disrupt homeostasis while psychological stress is the internal subjective state of perception of being challenged (Lu et al. 2021). On the other hand, stress reaction is an emotional, cognitive and physiological response process that is aimed at restoration of the equilibrium. Drawing

this distinction is critical in empirical studies as it makes clear that psychological stress is an internal experience and not the stressor.

Regarding cognitive functioning, stress is detected as being close to emotional functioning. Psychological stress is the experience of both emotional and cognitive reaction such as tension, worry, emotional strain, perceived cognitive overload and feeling of ineffectiveness on control of the situation (Obbarius et al 2021). Research that is theory based in the transactional stress paradigm has shown that perceived stress is related to emotional stress response, psychological stress and its wellbeing problems like depression and mental health dysfunction (Obbarius et al 2021).

Psychological stress also comes in the form of system-level strain as well. When somebody's mental demand exceeds a person's ability of how much stress one can handle, their stress triggers other systems in the body that lead to a build-up of stress. (Lu et al. 2021). Stress is a paradox as it is can cause a person to develop systems at the lower psychological levels. When a person is under stress for a long time or that stress is too much, a person can develop a burning-out system or a distress system which are both systems we can say are at the higher psychological levels.

Unlike other strains, psychological stress is not a one-time thing. A person's stress response systems are moulded by the stress they experience. Stress response systems can also be developed by how weak or strong a person's ability is to manage their stress (Cohen et al. 2016). Although there is a psychological system that is under stress, there is also a system that is under the stress-control side. There is a system that also deals with the causes of the stress. The psychological system under control is also there to deal with the stress. Having chronic stress for a long time can cause other systems in the body to break down which is certainly one of the other psychological systems that are under the stress control side.

From the transactional structure, psychological stress is the by-product of number of interacting elements. Stress confronting from the environment and the personal resources designed to cope with environmental demand are the things which we look at as stress in the dependent variable relational context in empirical studies in stress (Obbarius et al. 2021). The stress of the employees, the stress of the job demand, the organizational social support and the stress of resilience in employees is what is under psychological stress in the study.

Psychological stress within the parameters of this research speaks to the emotional stress, anxiety and feelings of psychological strain the person reported feeling (Obbarius et al., 2021). This definition illustrates the nature of psychological stress and aligns precisely with transactional models of stress that focus on the stress of perception rather than the presence of the stressor.

In sum, psychological stress is defined in this research as, "a psychological condition that flows from the interplay of situational challenges and the person's coping abilities" (Lu et al., 2021). Psychological stress as a dependent variable captures the psychological impacts through which the relationship of job demands, employee resilience and social support are addressed, thus providing a basis for the further definition of the dependent variables.

2.3.2 Job Demand

Job demand is a core element of the Job Demands-Resources (JD-R) theory which reflects certain facets of a job that require time, energy, physical, emotional or cognitive effort based on the psychological and physiological ramifications. Within this paradigm, demands of a job are not always negative. However, excessive or

chronic ones are likely to hinder the wellbeing of employees and add psychological strain. Demerouti et al. (2021) describe job demands as "the physical, social, or organisational features of a job that require continuous physical and/or psychological effort and linked to different physiological and/or psychological consequences."

In theory, job demands are broad and include workload, emotional demands, time pressure, role conflict, role ambiguity, work-home interference and other facets of work. These demands need a lot of energy since they triggered and is known as the "health impairment process". When employee's jobs are consistently demanding, they are required to exert a disproportionate amount of effort which results in a constant struggle and thereby low energy, chronic exhaustion and heightened disorders related to stress. (Galanakis & Tsitouri, 2022; Granziera et al. 2021). Thus, in the absence of sufficient resources environments where employees work is highly likely to become primary sources of strain and burnout.

From a theoretical perspective, JD-R theory suggests that job demands have negative consequences over time through sustained activation rather than having negative consequences over the short term. Observable chronic job demands including high workload, constant time pressure and continuous role stress have shown to predict exhaustion and psychological strain over time, signifying that the length and magnitude of job demands can determine the impact of such demands. This is consistent with the understanding of job demands to be a structural feature of the job rather than a fleeting challenge.

Job demands are contextual and differ across roles and organizational environments. JD-R theory states that each role is characterized by a unique set of job demands that be defined according to the work setting being studied. For instance, workload and time pressure may be more prominent in high-performance or service-

oriented roles while emotional demands and role ambiguity may be more significant in human service jobs. This adaptability is what makes the JD-R framework applicable across different organizational contexts while retaining conceptual integrity.

In JD-R theory, exhaustion and impaired wellbeing are the consequences of high job demand and insufficient resources (Demerouti & Bakker, 2023). In other words, having resources can help eliminate the negative consequences of job demand. Bur, when there are insufficient resources are present, those demands are converted to pressures. This makes job demands one of the most independent variables that have been widely studied in the field of research associated with stress.

In addition, job demands in the periods of uncertainty and crises have shown to be more significant. The job demands during crises are said to be more extensive due to the increased uncertainty, modifications of roles, increases in demands of task performance and cause the employees' regulatory demands (Demerouti & Bakker, 2023). This explains that job demands are not just a characteristic of a given job, but a feature with well linked consequences.

It is commonly accepted that job demand and psychological stress are positively correlated. More recently, researchers have found that the relationship is more complex. This indicate that the type of job demand and the individual appraisal of it are influential factors. For instance, Kim et al. (2023) indicate that job demands may be constructive or detrimental. While hindrance job demands are detrimental in that, they leave the employee who spend constructive demands such as excessive workloads or urgent time constraints. It requires sustained effort and may be viewed as energizing opportunities for personal accomplishment. Employees potentially using a stress-enhancing perspective may perceive psychological stress more positively

whereby a higher workload manageably energizes the employee and promotes a feeling of efficacy and psychological relief (Kim et al., 2023).

Moreover, the Job Demands-Resources (JD-R) perspective emphasizes that the impact of job demands is highly moderated by the resources that are available. In some organizational settings, particularly among non-clinical staff, high job demands may go along with higher steady-state job structures, routine and goal achievement. For example, Kim et al. (2023) state that negative impact of job demands is considerably diminished among people with positive stress mindsets. Therefore, if people have sufficient personal or social resources, increases job demands may not cause stress which may cause they energize people to be more engaged in their work. Thus, the relationship becomes inconsistent in that with greater task engagement, people report less psychological stress (Kim et al. 2023).

In this study, job demand is treated as a significant predictor. The effort required from individuals in the performance of the work of the roles is considered. That effort on the part of the employees is physical, emotional and cognitive. In the JD−R model, job demand is assumed to bring about psychological distress when employees demand resources to cope and do not have the required resources on hand like social support, personal resilience and others (Galanakis & Tsitouri, 2022; Granziera et al., 2021). In this regard, job demand and psychological stress are examined in the model proposed in this research.

2.3.3 Employee Resilience

In organizational and occupational psychology, employee resiliency is critical for understanding the unique challenges within the field especially in high-demand and

high-stress situations. In the healthcare sector, these challenges are significantly felt by non-clinical staff who support the organisation by carrying out crucial administrative, maintenance and operational duties such as overseeing medical records, maintaining buildings and handling financial logistics that guarantee efficient hospital operations without directly caring for patients (Bucala et al., 2025).

Employee resiliency is the ability of an individual to cope and adjust positively to challenges, stressors or obstacles of a work-related nature. More recent studies indicate that resiliency should not be regarded as a personality trait that is set in stone, but rather as a flexible and malleable resource that allows an individual to preserve or restore basic psychological functioning in the face of strong demands. Work-related resilience has been defined as the ability of an employee to maintain a reservoir of health and positivity that leads to effective adaptation in the face of adversity (Galy et al., 2023).

The framing of personnel employees' resiliency has changed greatly over the years. Older views tended to see the resiliency as a trait underscoring a person's ability to 'bounce back' from a stress. However, trait-oriented perspective has been criticized for oversimplifying the construct by ignoring context and other influencing factors. Contemporary frameworks see and define employee resiliency from a process of positive adaptation over time and different settings. Britt et al. (2016) suggest employee resiliency as a positive adaptation process that occurs in the presence of considerable adversity and not as a stable personal trait.

In the context of the workplace, resiliency is most closely associated with overcoming adversity. However, not every work-related stressor constitutes adversity in the context of resiliency research. Employee resiliency is most applicable in the presence of considerable adversity, primarily, prolonged high demand, considerable

stressors or disruptive work events and not the simple job stressors. (Britt et al., 2016). That is an important conceptual distinction because it is what separates resiliency from everyday coping and stress management.

From the theory stand of point, the resilience of employees is commonly rooted in resource-based frameworks. Galy et al. (2023) describe the integration of resilience at the workplace as a resource or a multitude of resources that may be utilized to assist in adapting positively, drawing on the Conservation of Resources theory. In this perspective, resilience is the storage of psychological, emotional and experiential resources accumulated as consequences of series of hardships. This facilitates a worker's ability to respond to increased demands of future challenges and emphasizes the growth aspect of resilience. This includes the components of attitudes and behaviors. Resilient employees can perform emotional regulation and have the ability to take control and resort to adaptive behaviors when under stress. Individual resilience at the workplace is described as a positive individual resource that allows actors to make attitudinal and behavioral adjustments under adverse circumstances that showcasing both previous successful adaptation and future potential for adjustment. (Galy et al., 2023). This point of view shows that resiliency is not just about bouncing back but also about the learning and growth from the challenges.

Additionally, the employee resiliency is becoming more and more flexible and reformable as the above references indicate. Collins et al. (2022) argue that precisely defined interventions that focus on the improvement of coping skills, emotional control and resource management do positively affect workplace resiliency. As Hollaar et al. (2025) illustrate, there is clear empirical evidence suggesting that the effects of resiliency-focused interventions are unequivocally beneficial to employees' psychological health which proves that the ability to deal with stressful situations is

not a fixed quality and despite the challenges weather-oriented interventions can be beneficial. This explains why employee resiliency has remained a prominent personal resource in several models of occupational stress.

Based on the above discussions, the present study defines employee resiliency as an individual resource that helps withstand and adjust to the job-related challenges and stressors. In line with the present views, employee resiliency is considered as a flexible and growing capacity that enables adaptive responses during extremely challenging work circumstances (Britt et al., 2016; Galy et al., 2023). Consequently, employee resiliency is anticipated to significantly impact the psychological stress that employees encounter especially in circumstances where there is a high demand for the job and the available assistance is minimal.

2.3.4 Social Support

Social support is a unique phenomenon that influences an individual's state of mind and dealing with distress. It refers to the benefits that flow from an individual's social contacts. Social support is any benefit that comes from and/or goes to social relationships—both in terms of support being available and support being felt (Costa-Cordella et al., 2021). This definition focusses on the idea that social support encompasses more than just the items that are given to an individual but it also includes the things that are sensed and/or provided within the different social domains.

Modern approaches distinguish perceived versus received (or actual) social support. Social support is more than just the perceived support from social network but it is also about the social support that flows from social networks (Rodríguez-Fernández et al., 2021). This is crucial in stress studies, particularly in perceived social

support, as the perceived availability of social support might affect the appraisal of stress and the coping emotions that are activated in a stressful situation.

The study claims that social support can cover a wide range of topics. Conversely, one can mention dimensions, levels and types of support. When discussing social relationships, one must bear in mind that support may serve various functions and therefore must incorporate multidisciplinary approaches (Rodríguez-Fernández et al., 2021). Heterogeneity allows social support to be understood as a constellation of elements that influence people' psychological adaptations rather than a single homogeneous resource. Some of these roles may not be immediately evident.

The directed social support is the analytical component of support, and it comes from social entities (Costa-Cordella et al., 2021). Social entities induce different levels of proximity (immediate vs. distant), durability (temporary vs. permanent) and emotional attachment (warm vs. cold). Plus, different support types are offered from every social group and each social mediator can have different impact on an individual's ability to cope. Support flows can also come from various sources. This principle is fundamental to social support in work and community settings.

Social support is perceived, functionally, on a continuum or spectrum. Rodríguez-Fernández et al. (2021) postulated this continuum includes support of a pluralistic emotional nature (i.e., empathy, understanding and so on), instrumental or material support (i.e., complimentary aid, support assistance or even finances), and advice or the provision of other resources. Each of these classes of support enables facilitators to undergo and manage psychological processes differently, and to cope/battle the challenges stressors pose on the individual.

Research models of social support hypothesize the streams of social assistance resources and the differing social support functionalities along the support continuum

represent a hierarchy of the theory. Rodríguez-Fernández et al. (2021) contends the hierarchy presupposes social support resources derive social support of diverse natures, thereby constraining support functionalities for recipients and represent the rationale for duality of the constructs/functionality of social support. This hierarchy is vital to explain the duality of social support to the empirical absence of theory on social support in the extant literature.

According to theory and research, the role of social support in health and stress situations is one of the most important psychosocial buffers to the impact of stress. Social support has been defined as a protective factor which reduces physiological and psychological impact of stress and works through the mechanisms of emotional support, cognitive appraisal, and social regulation (Costa-Cordella et al., 2021). These mechanisms allow social support to function in emotional equilibrium, coping and psychological health maintenance.

In this study, social support is conceptualized as individual level psychosocial resource indicator of employees' perceptions of the extent of support available to them from their social surroundings. In accordance with prevailing theory, social support is a multidimensional phenomenon with a variety of providers and forms of support which in total affect the individual's experience of psychological stress. (Costa-Cordella et al., 2021; Rodríguez-Fernández et al., 2021). Therefore, social support is likely to significantly determine the modalities and outcomes of psychological stress that employees undergo at their places of work.

2.4 Factors related to Psychological Stress

Stress cannot be understood as a single occurrence that happens independently. Stress represents a runoff from an amalgamation of work, personal and social components. For the purposes of this study, stress represents the emotional reaction to a scenario where the challenges presented by the environment are greater than the resources available to cope with these challenges (Lu et al., 2021; Cohen et al., 2016). In this section, building on from the definitions of the study's variables discussed in 2.3.1 to 2.3.4, I attempt to bring together and discuss the three most important components of psychological stress with job demand, employee resilience and social support.

Considering the definition of the work environment, job demand is the single most important component of the psychological stress constellation. Job demands are the psychological and physiological costs that are associated with the work that requires sustained physical, cognitive or emotional effort (Granziera et al., 2021). Excessive and/or prolonged job demands affect the job demands burnout cycle by hampering the available coping resources and sustained effort. For the Job Demands–Resources framework, the absence of adequate offsetting resources and the persistence of high demand jobs fuels the health impairment cycle which adds to the risk of psychological stress. (Galanakis & Tsitouri, 2022). Thus, the presence of job demands alone is not enough to cause psychological stress uniformly.

Psychological stress is also dependent on the individual's characteristics. Individual resilience is one such factor. Employee resilience refers to positive adaptation in the presence of significant challenges or constant stressors (Britt et al., 2016). Resilience is not a fixed characteristic of a person as it is a fluid that developable

resource which may help people stay emotionally regulated, psychologically intact and bounce back from stress.(Galy et al., 2023). Therefore, employee resilience impacts psychological stress by influencing how employees respond and adjust to the presence of high demands in their jobs.

Along with individual assets, social support is an impactful social element concerned with psychological stress. This is understood as the emotional, instrumental and informational support we feel and can draw on from our relationships. (Costa-Cordella et al., 2021). From a conceptual viewpoint, perceived social support affects psychological stress and is influenced by the individual's cognitive appraisal of a situation and the emotional responses related to the stress (Rodríguez-Fernández et al., 2021). When employees feel support is accessible from important others, peers or a wider social circle, stressful demands can be viewed as challenging, therefore lessening psychological strain.

However, the connection between job demands and psychological stress is not a straightforward one. This is because the interplay between psychological and social factors is present. Employee resilience as well as social support are valuable factors to be considered. These factors impact the way an individual interprets, reacts to and recovers from the demands of their work. From a transactional stress point of view, psychological stress is a result of the appraisal and coping strategies involved when confronting demands in the environment and the resources available (Cohen et al., 2016; Obbarius et al., 2021). Therefore, the likelihood of high job demands resulting in psychological stress is greater when employees have a lack of social support and resilience. This is not the case when there are adequate social and psychological factors to lessen the experience of stress.

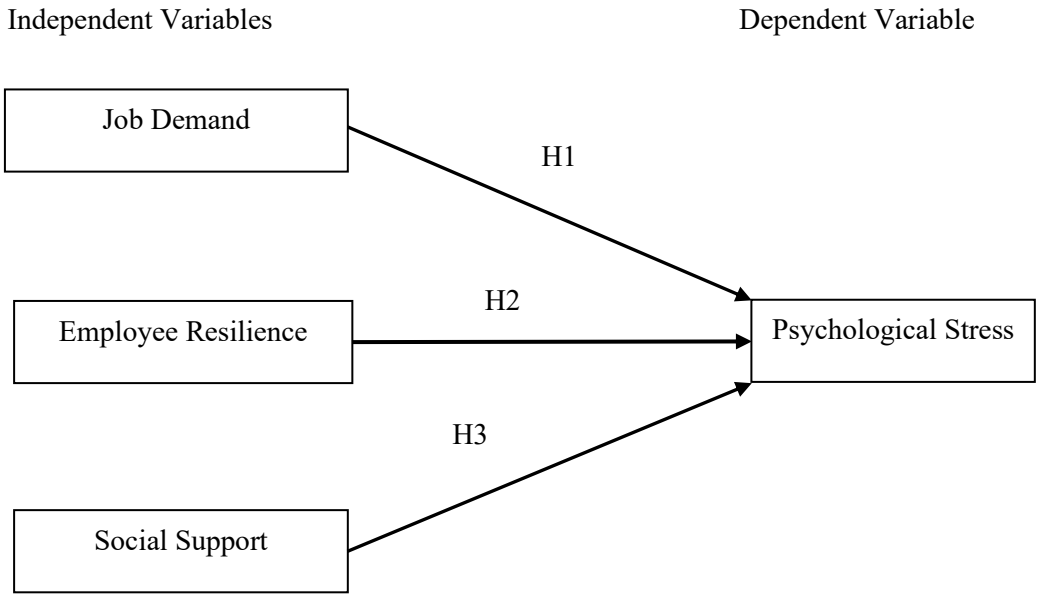
Taken together, the conceptual framework of this study positions psychological stress as an outcome influenced by the interconnection between job demand, employee resiliency, and social support. Job demand represents a key source of stress exposure while employee resiliency and social support represent key resources that define individuals' adaptive capacity. In line with recent stress theories, psychological stress is then conceptualised as a complex psychological state resulting from the interplay of specific environmental demands and the individual and social adaptive resources (Lu et al., 2021; Britt et al., 2016; Costa-Cordella et al., 2021).

In conclusion, the present study identifies the work-related demands, individual adaptive capacity and social resources as relevant to understanding psychological stress. Through this combination of factors, this research offers a solid conceptual foundation to treat psychological stress as an outcome of the proposed model. Furthermore, this combination aids in building the conceptual framework that interlinks job demand, employee resilience social support and psychological stress.

2.5 Research Framework

The research framework shown in Figure 2.1 indicates the direct relationship between job demand, employee resilience, social support, and psychological stress. In this study, job demand, employee resilience, and social support are the independent variables, while psychological stress is the dependent variable.

Figure 2.1
Research Framework



2.6 Hypotheses Development

2.6.1 Relationship between Job Demand and Psychological Stress

Job demands capture the essence of the working conditions that require ongoing burdens on employees' physical, cognitive and emotional aspects of performance. Within the framework of Job Demands-Resources, high and/or chronic job demands draw down employees' energy and resources that result in a higher likelihood of psychological strain (Granziera et al, 2021). Job demands that surpass one's ability to cope are likely to be seen as stressful and consequently lead to increases in psychological distress (Galanakis & Tsitouri, 2022). Relating to the transactional theory of stress, high job demands are regarded as a fundamental cause of the exposure to psychological stress (Cohen et al., 2016).

The health impairment process has shown that the risk of developing mental disorders is high for employees exposed to primary stressors such as high levels of mental and physical demands (Kazar & Rahmanzadeh, 2024). More specifically, job demands are viewed as hindering factors and for example as role ambiguity and excessive admin work which leads to psychological energy exhaustion and stress (Kim et al., 2023). When there are constantly high demands in a work environment, the stressors will keep piling up and as a result there will be no time for recovery which strengthens the positive relationship between perceived demands and psychological strain (Kim et al., 2023).

Based on the above discussion, the following hypothesis is proposed:

H1: There is a significant positive relationship between job demand and psychological stress

2.6.2 Relationship between Employee Resilience and Psychological Stress

The concept of employee resiliency represents employee personal adjustment capacity resources with which to tackle challenges and sustained stressors successfully. Employees who have developed resilience have better competency pertaining to emotional self-regulation and psychological equilibrium and stress recovery after demanding conditions (Britt et al., 2016). Resilience of employees is more than a psychological static concept as it is a psychological capacity to develop adaptability to high job demands and consequently reduce psychological stress (Galy et al., 2023). With more resilience and within a transactional stress framework, it is assumed that coping will be more effective which in turn will lead to improved appraisal and better stress mitigation (Obbarius et al., 2021).

Therefore, the following hypothesis is proposed:

H2: There is a significant negative relationship between employee resilience and psychological stress

2.6.3 Relationship between Social Support and Psychological Stress

The assistance provided by social relationships in the form of emotional, instrumental and informational help are the kinds of aid that are key psychosocial resources and are termed social support. People's perceptions of social support have changed how they perceive stress and raised adaptive environmental needs. (Costa-Cordella et al, 2021) In the workplace, if employees perceive the available support, they are likely to view job-related demands as less psychologically straining. (Rodríguez-Fernández et al, 2021). From the perspective of stress and health, the buffering function of psychological support is regarded as protective as it lessens the adverse impact of stress on psychological health.

Therefore, the following hypothesis is proposed,

H3: There is a significant negative relationship between social support and psychological stress

2.7 Conclusion

This chapter has presented the discussion on past and existing empirical works in the areas of psychological stress, job demand, employee resilience, and social support. The chapter has also presented the research framework and the research hypotheses tested in the study. The following chapter, Chapter 3 describes the method of the study.

CHAPTER 3

METHOD

3.1 Introduction

This chapter discusses method for the study. The discussion begins with the research design and follows by the study population and sampling. The chapter also discussed on the development of the survey materials, the data collection procedures, and strategies for data analyses.

3.2 Research Design

Research design refers to a master plan that specify the methods and procedures for collecting and analyzing the needed information (Rahi, 2017; Zikmund et al., 2013; Zikmund & Carr, 2000). This study adopted a quantitative approach to examine factors that influence psychological stress among non-clinical staffs. As argued by Cresswell (2003) and Harwell (2011), quantitative research design is more suitable for this study as it allows the testing of relationship between variables using statistical methods. Quantitative approaches also include the systematic undertaking of collecting, examining, interpreting, and documenting the findings that result from the study. Therefore, quantitative design is more suitable for this study as it aligned with the objective of this study, which is to examine the direct relationship between job demand, employee resilience, social support, and psychological stress.

Since respondents' perception about job demand, employee resilience and social support are taken as a basis for understanding their influence on psychological stress issues, individual is considered suitable to be taken as the unit of analysis to test

all the variables shown in the research framework. For this study, the researcher's interference was minimal as the study was conducted in a natural environment. Also, the current study utilized a cross-sectional survey design. Cresswell (2003) defines cross-sectional data collection as the gathering of data at a single point in time.

3.3 Population and Sampling

3.3.1 Study Population

In research, a population indicates the larger collection of individuals or entities that possess homogeneous traits across a particular dimension which serves as the basis for developing research questions and hypotheses (Casteel & Bridier, 2021; Willie, 2024). These individuals help in gaining a wider understanding of a particular demographic, and institutional setting that the researcher seeks to investigate. In this study, all the non-clinical staffs employed in one of the hospitals in Malaysia are taken as the population. There are 180 non-clinical staffs who currently employed in this hospital.

Table 3.1
Number of Non-clinical Staffs based on Type of Services

Type of services	Total number
FMS (EMS)	5
FMS (AISLING)	12
FMS (ADMIN)	8
FEMS (EMS)	5
FEMS (CIVIL) (AILSING) - HANDYMAN	15
FEMS (CIVIL) (EMS) – PLUMBER, TECH, CARPENTER	7

Type of services	Total number
FEMS (MECHANICAL) (EMS)	9
FEMS (ELECTRICAL) (EMS)	9
FEMS (MECHANICAL) (AILSING)	10
LLS (EMS)	8
LLS (LAUNDRY WORKER) - AISLING	10
CLS (EMS)	5
BEMS (EMS)	8
CLS (CLEANER) - UEMS	33
CLS (ASST. SUPERVISOR) – EMSB	16
HWMS (PORTER - UEMS	5
FEMS (WADAH SEJATI)	5
FEMS (DIVERSITI MEKANIKAL)	3
EFEMS (TENBEX)	4
CP RELEVANCE'S	3
TOTAL	**180**

3.3.2 Sample Size

Sample is a set of respondents or individuals selected from a population (Salant & Dillman, 2004). According to Oribhabor and Anyanwu (2019), sample refers to the selection of a group of smaller number of people from a population. The sample size is an important feature of any empirical research as its instigate analysis or conclusions about a population that is represented by a sample. If the sample size is too large, resources might be wasted and not to mention the fact that the conclusions from the study might not be improved at all (Willie, 2024). Determining sample size is important when it comes to study design since it will determine the level of statistical

power or the ability of the study to identify true effects. Having the sample size determined will ensure that the study at hand will tackle the research questions effectively while at the same time remaining within the resource limits available to the researchers (Willie, 2024; Rendón-Macías & Villasís-Keever, 2017). Therefore, an adequate sample size is needed to generalize the population.

For this study, the sample size was determine based on Krejcie and Morgan (1970) table. Based on the population of 180 people, the sample size table suggested by Krejcie and Morgan (1970) is 118.This means a total of 118 non-clinical staffs are needed to represent the whole study population. This sample size fits Roscoe's rule of thumb where a sample that is larger than 30 and less than 500 is appropriate for most research.

For this study, the researcher decided to distribute 142 questionnaires with the intention to receive a high response rate. As argued by Hair et al. (2006), large sample size is required to generalize the entire population. In this study, the researcher utilized an online survey. Based on past studies, it was reported that on average, the response rate for online surveys in Malaysia was 58.43%. For example, Husin et al. (2020) study showed a response rate of 46.8%.

To increase the response rate, an additional 20% was added to the sample target in this study to reach the possibility ranging from 60% to 70% response rate, as justified by Fincham (2008) and Yun and Trumbo (2000). The calculation is as follows:

Sample size recommended by Krejcie and Morgan: 118

20% x 118 = 23.6

Additional sample target: 118 + 23.6 = 141.6

3.3.3 Sampling Technique

This study employed a proportional stratified probability simple random sampling technique as way to collect data. As argued by Taherdoost (2016), stratified random sampling denotes the segregation of the population into subgroups, while random sampling is extracted from every subgroup. Subgroups could be formed based on gender, company size, branch, or occupation. For this study, the sampling frame is organized to represents the non-clinical staffs for each type of services. After that, the potential participant will be selected randomly from each type of services through the sampling frame.

Sekaran and Bougie (2013) suggested that a proportionate stratified sampling technique is suitable for a study that contains a stratum and a higher number of organizations to achieve more representations. This technique aims to ensure that each stratum is sufficiently represented (Ackoff, 1953). Therefore, it was adequate to apply in this study where the non-clinical staffs attached to different type of services, and the stratified sampling could create an opportunity for each stratum to be represented.

Bryman and Bell (2003) suggested the use of a larger sample size compared to the required sample size to overcome the problem of sample attrition. Based on the discussions from the previous section, the sample target was adjusted to an additional 20% as an effort to increase the chance of collecting a high response rate for this study.

Table 3.2 presents the sample size for each type of services involved in this study. The stratum formula adopted from Hayes (2020) was applied to achieve the suggested 142 respondents for this study, which is as follows:

Sample size / over sampling size for each type of services = (Sampling target / number of population) x stratum size

Table 3.2
Sample Size and Over Sampling Size for Each of Type of Services

Type of Services	Population / Stratum Size	Stratum Formula	Sample Size	Stratum Formula	Over sampling size
FMS (EMS)	5	(118/180) *5	3	(142/180) *5	4
FMS (AISLING)	12	(118/180) *12	8	(142/180) *12	9
FMS (ADMIN)	8	(118/180) *8	5	(142/180) *8	6
FEMS (EMS)	5	(118/180) *5	3	(142/180) *5	4
FEMS (CIVIL) (AILSING) - HANDYMAN	15	(118/180) *15	11	(142/180) *15	13
FEMS (CIVIL) (EMS) – PLUMBER, TECH, CARPENTER	7	(118/180) *7	5	(142/180) *7	6
FEMS (MECHANICAL) (EMS)	9	(118/180) *9	6	(142/180) *9	7
FEMS (ELECTRICAL) (EMS)	9	(118/180) *9	6	(142/180) *9	7
FEMS (MECHANICAL) (AILSING)	10	(118/180) *10	6	(142/180) *10	8
LLS (EMS)	8	(118/180) *8	5	(142/180) *8	6
LLS (LAUNDRY WORKER) - AISLING	10	(118/180) *10	6	(142/180) *10	8

Type of Services	Population / Stratum Size	Stratum Formula	Sample Size	Stratum Formula	Over sampling size
CLS (EMS)	5	(118/180) *5	3	(142/180) *5	4
BEMS (EMS)	8	(118/180) *8	5	(142/180) *8	6
CLS (CLEANER) - UEMS	33	(118/180) *33	22	(142/180) *33	26
CLS (ASST. SUPERVISOR) – EMSB	16	(118/180) *16	11	(142/180) *16	13
HWMS (PORTER - UEMS	5	(118/180) *5	3	(142/180) *5	4
FEMS (WADAH SEJATI)	5	(118/180) *5	3	(142/180) *5	4
FEMS (DIVERSITI MEKANIKAL)	3	(118/180) *3	2	(142/180) *3	2
EFEMS (TENBEX)	4	(118/180) *4	3	(142/180) *4	3
CP RELEVANCE'S	3	(118/180) *3	2	(142/180) *3	2
Total	**180**		**118**		**142**

3.4 Operational Definitions and Measurements

3.4.1 Psychological Stress

Psychological stress is the dependent variable in this study. The psychological stress was measured by 9-items adapted from The Psychological Stress Measures (PSM-9) developed Lemyre and Lalande-Markon (2009). Based on a five-point scale whereby, 1 = strongly disagree, and 5 = strongly agree, participants rated their degree

of agreement with the psychological stress statements. Table 3.3 shows the psychological stress items used in this study.

Table 3.3
Psychological Stress Items

Variable	Items	Authors
Psychological Stress	1 I have to work fast	Lemyre and Lalande-Markon (2009)
	2 I feel rushed, I do not seem to have enough time	
	3 I suffer from physical aches and pains, sore back, headaches, stiff neck, stomach aches	
	4 I feel preoccupied, tormented or worried	
	5 I feel confused, my thoughts are muddled, I lack concentration	
	6 I feel full of energy and keen	
	7 I feel a great weight on my shoulders	
	8 I have difficulty controlling my reactions, emotions, moods or gestures	
	9 I feel stressed	

3.4.2 Job Demand

Job demand is the first independent variable. It is operationalized as having to work fast and hard, having a great deal to do and having too little time (Janssen, 2001). In this study, job demands are measured by eight items of work speed and quantity developed by Van Veldhoven and Meijman (1994). Based on a five-point scale whereby, 1 = strongly disagree, and 5 = strongly agree, participants rated their degree

of agreement with the job demand statements. Table 3.4 shows the job demand items used in this study.

Table 3.4
Job Demand Items

Variable	Operational Definition	Items	Authors
Job demand	Having to work fast and hard, having a great deal to do and having too little time	1 I have to work fast 2 I have too much work to do 3 I have to work extra hard to finish a task 4 I work under time pressure 5 I can do my work in comfort (R) 6 I have to deal with a backlog at work 7 I have problems with the pace of work 8 I have problems with the workload	Van Veldhoven and Meijman (1994)

3.4.3 Employee Resilience

Employee resilience is the second independent variable in this study. It is operationalized as employees' assessment of their ability to manage and adjust to constant changes in the workplace (Kuntz et al., 2016). Näswall et al.'s (2019) Employee Resilience Scale consisting of nine items was adapted to measure the variable under study. The scale is unidimensional.

Based on a five-point scale whereby, 1 = strongly disagree, and 5 = strongly agree, participants rated their degree of agreement with the employee resilience statements. The items for employee resilience are listed in Table 3.5.

Table 3.5
Employee Resilience Items

Variable	Operational definition	Items	Authors
Employee resilience	Employees' assessment of their ability to manage and adjust to constant changes in the workplace	1 I effectively collaborate with others to handle unexpected challenges at work.	Näswall et al. (2019)
		2 I successfully manage a high workload for long periods of time.	
		ER3 I resolve crises competently at work.	
		ER4 I learn from mistakes at work and improve the way I do my job.	
		ER5 I re-evaluate my performance and continually improve the way I do my work.	
		ER6 I effectively respond to feedback at work, even criticism.	
		ER7 I seek assistance to work when I need specific resources.	
		ER8 I approach managers when I need their support.	
		ER9 I use change at work as an opportunity for growth.	

3.4.4 Social Support

Social support is the third independent variable in this study. Social support is operationalized as the overall levels of helpful social interaction available on the job from co-workers and supervisors (Karasek & Theorell, 1990). Social support was measured by 8-items adapted from Karasek and Theorell (1990). During the survey, respondents were asked to rate their degree of agreement with the social support statements based on five-point scale whereby, 1 = strongly disagree, and 5 = strongly agree. The social support items were showed in Table 3.6.

Table 3.6
Social Support items

Variable	Operational definition	Items	Authors
Social support	The overall levels of helpful social interaction available on the job from co-workers and supervisors	1 My supervisor is concerned about the welfare of those under them. 2 My supervisor pays attention to what I am saying. 3 My supervisor is helpful in getting the job done. 4 My supervisor is successful in getting people to work together. 5 People I work with are competent in doing their jobs. 6 People I work with take a personal interest in me. 7 People I work with are friendly. 8 When needed, my colleagues will help me	(Karasek & Theorell, 1990)

3.5 Questionnaire Design

Since work in Malaysia is carried out in both English and Bahasa Malaysia, all materials prepared for the participants were provided in both English and Bahasa Malaysia. Participants were given the choice between the two versions so that they could express their ideas freely. The survey material that was used in this study is shown in Appendix A and Appendix B. As the questionnaire was distributed online, it was prepared in the Google forms format. The form was sent to respondents through WhatsApp where they were given the access by clicking the google form link.

There are 5 sections in the questionnaire. Section one asked about psychological stress and there are 9 items. In section two of the questionnaire, there are 8 items on job demand. Section three consists of 9 items on employee resilience. Section four consists of 8 items on social support. The final section, section five sought the demographic characteristics of the participating non-clinical staffs, and their respective organization. This information is necessary to show that the sample is representative and to ensure that generalizations to the wider population of non-clinical staffs can be made.

3.6 Data Collection Procedure

3.6.1 Pre-test

Questionnaire pre-testing is conducted to ensure that the questions being asked are understood and that they serve the surveying purpose (Hilton, 2015). Examples of problem areas include are confusing wordings, poor structure or format, unclear terms, possible biases, and excessive burdens on respondents where the instrument is then

changed (Campoamor et al., 2024). Pre-tests are critical for determining surveys' validity and the quality of the data obtained. In contrast to expert reviews, predicated on survey and statistical design, pretests provide the necessary validity for proper functionality (Johnston et al., 2017; Lenzner et al., 2023; Hashim et al., 2022). As argued by Reynolds et al. (1993), pre-test is conducted to refine the questionnaire's design and identify any errors. It is essential to ensure that respondents understand the questionnaire as the researcher intends and in a manner that is consistent (Collins, 2003). Therefore, validity of the instruments is important.

Instruments validity describes the degree to which it measures what is supposed to be measured (Abbot & Bordens, 2011). In other words, in what way the chosen measure can precisely explain the concept of research. In this study, the content validity of the questionnaire was conducted by an academician who is expert in the areas of study. Having a satisfying content validity is crucial as it gives affirmation to the researcher and the whole study in general. As argued by Zikmund (2013), content validity clarifies the logic behind the scale of what is intended to be measured. Once the content of the questionnaire for all the variables of this study is approved, a pilot study was conducted.

3.6.2 Pilot Study

A pilot study is a study within a study where a researcher implements a scaled-down version of their future study to determine if the future study is worthwhile given its feasibility and to investigate if there are any possible issues with its design. It includes and is a combination of the key methodological components of the future study. Results, issues, and other findings from the pilot study are sampled and

maintained to guide the researcher in the future study which is of a larger scale and is fully funded.

Pilot studies are not conducted to statistically determine and measure the main study's hypothesis or theory. That would be the goal of the bigger and become primary study. Relatively, the purpose is to gather enough supporting and practical evidence relative to the study's design and whether it is viable, efficient, and practical to conduct a larger scale fully funded study and its theory. Pilot studies lay the groundwork for larger and funded studies with their supporting evidence relative to study design and feasibility and practical evidence (Thabane et al. 2010). Pilot studies provide validated evidence to study design and feasibility to determine whether a larger, fully funded study is warranted (Doody & Doody 2017, Eldridge et al. 2016).

The pilot study was conducted on 30 non-clinical staffs. The internal consistency reliabilities (Cronbach's Alpha) of the research measures from the pilot study are reported in Table 3.7. As shown in Table 3.7, all variables have satisfactory reliability values ranging from .701 to .863. There were also no changes required to the questionnaire.

Table 3.7
Reliability Analysis on Pilot Study

	Variables	Number of Items	Cronbach's Alpha
1	Psychological Stress	9	.701
2	Job Demand	8	.741
3	Employee Resilience	9	.863
4	Social Support	8	.784

3.6.3 Actual Data Collection

The actual data collection process starts on 20 December 2025 and ends on 25 December 2025. The actual data were collected through online survey using Google form after permission was granted. In this study, each potential respondent received the survey question through their WhatsApp in which the link to the Google form was provided. Information sheet that briefly explained the study and the questionnaire was provided to each of the respondents. During the data collection process, all respondents were informed and reminded that their participation was completely voluntary and their responses were treated with the strictest confidentiality. They were allowed to withdraw from the study at any time and not complete the questionnaire. However, the completion and return of the questionnaire were taken as the indication that the participants agreed to participate.

3.7 Data Analysis Strategy

Data collected for this study were analyzed using SPSS (version 30) program for descriptive, correlation and multiple regression analyses. Before conducting the primary analyses, the data were first examined for data entry accuracy, outliers, and distributional properties.

3.7.1 Descriptive Analysis

Descriptive analysis describes the basic features of the data in the research and these include the minimum, maximum, mean, and standard deviation of a sample

(Sekaran & Bougie, 2013). The analysis can help understand and detail the information that one study without venturing into the aspects of making predictions or causal relations (Abubaker Blbas, 2023; Limone et al., 2022).

As for this study, descriptive statistics were conducted primarily to summarize a set of demographic information of the participants and the key variables in the study. These categories of data help the researcher to summarize the variables of interest and provide a quick summary of the demographic characteristics of respondents participated in this study. Also, the analysis help to gain a better insight into the sample population and assist in understanding and elucidating the data in the presence of some uneven patterns and potential bias in the data. Among the demographic characteristics asked in the questionnaire include gender, age, marital status, highest education qualification, monthly income, number of years with the organization, current position, and number of years with current position. These attributes are very important in some studies as they help gain a better insight into the sample population and assist in understanding and elucidating the data in the presence of some uneven patterns and potential bias in the data.

3.7.2 Correlation Analysis

In this study, correlation analysis was conducted to identify the strength and direction of the linear relationship between two variables. The ideal correlation of 1 or -1 indicates that the value of one variable can be determined accurately by knowing the value of the other variable. Therefore, to determine the strength of the relationship between the variables in this study, the correlation technique was used to understand the direction of the relationship and amount of correlation between the independent

variables (job demand, employee resilience, social support), and dependent variable (psychological stress). Cohen's (1988) suggestion is followed to interpret the value between 0 (no relationship) and 1 (perfect relationship). If the value of r is between± 0.1 to ± 0.29, the relationship is considered small. The relationship is considered medium when r value is between± 0.30 to ± 0.49, and the strength is large when r value is between± 0.50 and above.

3.7.3 Regression Analysis

The main purpose of conducting a multiple regression in this study is to determine the predictive power of the independent variables (job demand, employee resilience, social support) toward the dependent variable (psychological stress). Multiple regression analysis is a statistical technique that analyze the relationship between a single dependent (criterion) variable and several independent (predictor) variables. The objective of conducting this analysis is to use the independent variable whose values are known to predict the single dependent value selected by the researcher. Each independent variable is weighted by the regression analysis procedure to ensure maximal prediction from the set of independent variables. The set of weighted independent variables forms the regression variate, linear combination of the independent variables that best predicts the dependent variable (Hair et al., 2010). Multiple regressions are important because it can forecast future outcomes.

3.8 Conclusion

The research method and strategy for analysis have been discussed in this chapter. It described the research design, the study population and sampling technique, development of the questionnaire, and the data collection procedure. This chapter also briefly explains the adoption of correlation and regression analysis to test the research hypotheses. In the next chapter, Chapter 4, results of the study are reported.

CHAPTER 4

FINDINGS

4.1 Introduction

Chapter 4 reports results of the study. The chapter begins by reporting the response rate and the data screening process. It then presents the demographic characteristic of the participants and descriptive analyses. The discussions end with a report on correlation analysis and regression analysis.

4.2 Response Rate

A total of 142 questionnaire was distributed through an online survey using Google form between 25 December 2025 and 31 December 2025. Participants were given 7 days to complete the questionnaire. At the end of the survey period, a total of 129 questionnaire was returned, yielding a return rate of 90.84%.

4.3 Data Screening

Before conducting the primary analyses, the data were first examined for data entry accuracy, outliers, and distributional properties. Data screening was conducted by examining basic descriptive statistics and frequency distributions. Data screening is important in the earlier steps as it affects the decisions taken in the steps that follow. The procedures involved identification of missing data, outliers, normality, linearity, and homoscedasticity. First, the data were carefully examined for missing information. Descriptive data results showed that no missing information were found. Outliers were

assessed through boxplot analysis. The boxplots indicated that no outliers were present, suggesting that the data were free from extreme values. Normality test is conducted using skewness and kurtosis. Hair et al (2010) and Bryne (2010) argued that data is considered normal if skewness is between -1 to +1 and kurtosis is between -3 to +3. Therefore, the data appeared to have a normal distribution.

Table 4.1
Result of Normality Analysis

	Variables	Skewness	Kurtosis	Kolmogorov-Smirnov	Shapiro-Wilk
1	Job Demand	-0.007	-0.278	0.200	0.353
2	Employee Resilience	-0.355	-0.740	0.011	<0.001
3	Social Support	0.125	-0.639	<0.001	<0.001
4	Psychological Stress	0.096	-0.678	0.085	0.102

Results of linearity and homoscedasticity for all variables through the scatter plot diagrams indicates no evidence of nonlinear patterns and a visual inspection of the distribution of residuals suggested an absence of heteroscedasticity for the variables.

4.4 Demographic Characteristic of the Participants

Table 4.2 presents the detailed descriptive statistics of the participants' demographic characteristics. The results indicate that 54.3% of the 129 participants in this survey were females. Most of the participants surveyed (46.5%) were age between 21 to 30 years old. Out of 129 participants, 62% were single and 54.3% had a secondary school certificate. Majority of the participants (54.3%) had a monthly

income between RM2001 and RM3000. In terms of number of years with the organization, 34.9% of the participants had served their organization between 1 to 3 years. Most of them (34.9%) had been in their present position between 1 to 3 years. Out of 129 participants, 24% were CLS (Cleaner) - UEMS.

Table 4.2
Demographic Characteristic of the Participants (n=129)

Demographic	Frequency	Percentage
Gender		
Male	59	45.7
Female	70	54.3
Age		
21-30 years old	60	46.5
31-40 years old	40	31.0
41-50 years old	26	20.2
50 years old and above	3	2.3
Marital Status		
Single	80	62.0
Married	46	35.7
Divorced / Separated / Widowed	3	2.3
Highest Academic Qualification		
Secondary School	70	54.3
Certificate / Diploma	40	31.0
First Degree	18	14.0
Master degree	1	0.8
PhD	0	0.0
Current Monthly salary		
Below RM1000	0	0
RM 1001 – RM 2000	0	0

RM 2001 – RM 3000	70	54.3
RM 3001 – RM 4000	40	31.0
RM 4001 – RM 5000	18	14.0
Above RM 5001	1	0.8
Number of years with organization		
Less than 1 year	35	27.1
1 - 3 years	45	34.9
4 - 7 years	30	23.3
More than 7 years	19	14.7
Number of years in present position		
Less than 1 year	40	31.0
1 - 3 years	45	34.9
4 - 7 years	28	21.7
More than 7 years	16	12.4
Present position		
CLS (Cleaner) - UEMS	31	24
FEMS (Civil) (Aisling) - Handyman	16	12.4
FMS (Aisling)	10	7.8
FEMS (Mechanical) (Aisling)	10	7.8
CLS (Asst. Supervisor) - EMSB	10	7.8
FEMS (Mechanical) (EMS)	9	7
FEMS (Civil) (EMS) – Plumber, Tech, Carpenter	7	5.4
FMS (Admin)	6	4.7
FEMS (Electrical) (EMS)	6	4.7
LLS (Laundry Worker) - Aisling	6	4.7
LLS (EMS)	5	3.9
BEMS (EMS)	5	3.9
FEMS (Wadah Sejati)	4	3.1
HWMS (Porter) - UEMS	4	3.1

CLS (EMS)	3	2.3
FMS (EMS)	2	1.6
FEMS (Diversiti Mekanikal)	2	1.6
EFEMS (Tenbex)	2	1.6
CP Relevance's	1	0.8

4.5 Descriptive Analysis of Variables

In this study, descriptive analysis was conducted to illustrate how each variable was perceived by the participants. The analysis comprises the mean, standard deviation, and variance. As discussed in Chapter 2, four constructs were proposed in the research framework and they are job demand, employee resilience, social support, and psychological stress. All constructs were measured using a five-point Likert scale that ranges from 1 (strongly disagree) to 5 (strongly agree).

As presented in Table 4.3, the maximum score for the three constructs was 5.00 and one construct had a maximum score of 4.00. Meanwhile, the minimum score for two construct was 2.00 and other construct each had a minimum score of 3 and 1. On the other hand, it was discovered that three constructs shared no significant difference in average score, which ranged from 3.55 to 3.98. This result indicates that 129 respondents had a strong agreement for the three constructs for this study. Job demand was recorded as the closest representative of the mean with the nearest variance of .301. Table 4.3 presents detailed information on the tested constructs for this study.

Table 4.3
Descriptive Analysis of Constructs

Constructs	N	Min	Max	Mean	Standard deviation	Variance
Job Demand	129	3	5	3.77	0.55	0.30
Employee Resilience	129	2	5	3.98	0.68	0.46
Social Support	129	2	5	3.55	0.68	0.46
Psychological Stress	129	1	4	2.47	0.67	0.44

Table 4.4 showed descriptive analysis for each of psychological stress items. In general, the results indicate low level of agreement with each of the psychological stress items asked where the means are ranged from 2.29 to 3.98. As shown in Table 4.4, the "*I feel full of energy and keen*" statement has the highest mean.

Table 4.4
Descriptive Analysis of Psychological Stress Items

	Items	Min	Max	Mean	Std. Dev
1	I feel calm (R)	1	5	3.51	1.232
2	I feel rushed, I do not seem to have enough time	1	5	2.72	1.287
3	I suffer from physical aches and pains, sore back, headaches, stiff neck, stomach aches	1	5	2.53	1.398
4	I feel preoccupied, tormented or worried	1	5	2.29	1.041
5	I feel confused, my thoughts are muddled, I lack concentration	1	5	2.36	1.172
6	I feel full of energy and keen (R)	2	5	3.98	0.848
7	I feel a great weight on my shoulders	1	5	2.83	1.269
8	I have difficulty controlling my reactions, emotions, moods or gestures	1	5	2.45	1.218

9	I feel stressed	1	5	2.57	1.249

Descriptive analysis for job demand items is shown in Table 4.5. The results indicate high level of agreement with all the items where the means ranged from 2.02 to 4.08. The "*I have to work extra hard to finish a task*" statement received highest level of agreement from the participants where the mean is 4.08 and the standard deviation is 0.797.

Table 4.5
Descriptive Analysis of Job Demand Items

	Items	Min	Max	Mean	Std. Dev
1	I have to work fast	1	5	3.99	0.870
2	I have too much work to do	2	5	4.05	0.883
3	I have to work extra hard to finish a task	1	5	4.08	0.797
4	I work under time pressure	1	5	3.75	1.046
5	I can do my work in comfort (R)	1	4	2.02	1.046
6	I have to deal with a backlog at work	1	5	3.44	1.022
7	I have problems with the pace of work	1	5	3.40	0.939
8	I have problems with the workload	1	5	3.50	0.885

Descriptive analysis for employee resilience items is shown in Table 4.6. The results indicate high level of agreement with all the items where the means ranged from 3.88 to 4.05. The *"I feel comfortable to work with latest technologies in the organization*" statement received highest level of agreement from the participants where the mean is 4.05 and the standard deviation is 0.650.

Table 4.6
Descriptive Analysis of Employee Resilience Items

	Items	Min	Max	Mean	Std. Dev
1	I effectively collaborate with others to handle unexpected challenges at work.	2	5	4.05	0.878
2	I successfully manage a high workload for long periods of time.	1	5	3.47	0.993
3	I resolve crises competently at work.	1	5	3.56	0.918
4	I learn from mistakes at work and improve the way I do my job.	2	5	4.31	0.769
5	I re-evaluate my performance and continually improve the way I do my work.	2	5	4.11	0.822
6	I effectively respond to feedback at work, even criticism.	1	5	4.09	0.875
7	I seek assistance to work when I need specific resources.	1	5	4.07	1.084
8	I approach managers when I need their support	1	5	4.04	1.056
9	I use change at work as an opportunity for growth	1	5	4.11	0.929

Table 4.7 showed the descriptive analysis for social support items. The results indicate moderate level of agreement with all the items where the means ranged from 3.19 to 4.18. The "*When needed, my colleagues will help me*" statement received highest level of agreement from the participants where the mean is 4.18 and the standard deviation is 0.996.

Table 4.7
Descriptive Analysis of Social Support Items

	Items	Min	Max	Mean	Std. Dev
1	My supervisor is concerned about the welfare of those under them	1	5	3.20	1.214
2	My supervisor pays attention to what I am saying	1	5	3.36	1.191
3	My supervisor is helpful in getting the job done	1	5	3.40	1.176
4	My supervisor is successful in getting people to work together	1	5	3.53	1.001
5	People I work with are competent in doing their jobs	1	5	3.67	1.148
6	People I work with take a personal interest in me	1	5	3.19	1.249
7	People I work with are friendly	1	5	3.86	1.095
8	When needed, my colleagues will help me	1	5	4.18	0.996

4.6 Correlation Analysis

Table 4.8 presents the means, standard deviations, and Pearson correlations of variables for the 129 participants. The internal consistency reliabilities (Cronbach's Alpha) of the research measures are reported in parenthesis along the diagonal of the correlation table. As shown in Table 4.8, the Cronbach's alpha for job demand was 0.724, employee resilience was 0.888, social support was 0.861 and psychological stress was 0.720.

As shown in Table 4.8, there is no relationship between job demand and psychological stress ($r = .017$), suggesting that job demand does not contribute to the psychological stress experienced by the participants. There were significant negative relationships between employee resilience and psychological stress ($r = -.541$, $p<.01$).

The results imply that the higher the level of resilience, the lesser participants will experience psychological stress. Similarly, significant negative relationship also was found between social support and psychological stress (r = -.515, p<.01). The results indicate that the higher social support received, the lower participants will experience psychological stress.

Table 4.8
Descriptive Statistics, Scale Reliabilities, and Correlations of Variables

	Variables	N	Mean	Std. Dev	1	2	3	4
1	Job Demand	129	3.77	0.549	(0.724)			
2	Work Environment	129	3.98	0.675	0.186*	(0.888)		
3	Social Support	129	3.55	0.809	0.103	0.580***	(0.861)	
4	Psychological Stress	129	2.47	0.667	0.017	-0.541***	-0.515***	(0.720)

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

4.7 Multiple Regression Analysis

As shown in Table 4.9, 36.7% (R^2 =0.367, F=24.207, p<0.01) of the variance in psychological stress was significantly explained by job demand, employee resilience, and social support. In the model, employee resilience (β= -0.388, p<0.01), and social support (β= -0.302, p<0.01) were found significantly negatively related to psychological stress. Therefore, Hypotheses 2 and 3 were supported. The results suggest that being resilience and received social support have effect on psychological stress faced by the participant.

Table 4.9
Multiple Regression Analysis

Independent Variable	Dependent Variable (Psychological Stress) (Standardize coefficient) Beta	t	Significant (p)	Collinearity Statistics	
				Tolerance	VIF
Job Demand	0.121	1.664	0.099	0.965	1.036
Employee Resilience	-0.388	-4.389	0.001**	0.647	1.545
Social Support	-0.302	-3.460	0.001**	0.664	1.507
F Value	24.207				
R^2	0.367				
Adjusted R^2	0.352				
Durbin Watson	1.835				

Note: *p<0.05, **p<0.01

In conclusion, the analysis technique used in this study such as multiple regression has able to answer the research objectives and test the proposed hypotheses. Table 4.10 presents the summary of the hypotheses testing.

Table 4.10
Summary of Hypotheses Testing

Hypotheses	Statement	Findings
H1	There is a significant positive relationship between job demand and psychological stress	Not Supported
H2	There is a significant negative relationship between employee resilience and psychological stress	Supported
H3	There is a significant negative relationship between social support and psychological stress	Supported

4.8 Conclusion

This chapter described the demographic characteristics of the 129 participants, the results of the correlation, and regression analyses. The results indicate that employee resilience and social support were related to psychological stress. These research findings are discussed in the next chapter, Chapter 5.

CHAPTER 5

DISCUSSION, RECOMMENDATION AND CONCLUSION

5.1 Introduction

Chapter 5 discusses the findings of the study as highlighted in the literature reviewed on psychological stress and the hypotheses developed in Chapter 2. The findings reported in Chapter 4 are further discussed to elaborates and extends past studies on psychological stress. These are discussed in the sections below including the contributions that can be drawn from the study.

5.2 Recap of the Study

This study was conducted with the intention to investigate factors that might contribute to psychological stress among non-clinical staffs. Thus, three independent variables namely, job demand, employee resilience, and social support were tested against psychological stress. This study was a cross-sectional study that employed an online survey method to collect the data. Moreover, the 5-point Likert scale was used as a standard measurement scale to determine how strongly the respondents agreed or disagreed with the statements provided in the questionnaire. Proportional stratified probability simple random sampling technique was used to systematically select individual participants, in which the respondents were selected randomly and anonymously from each type of services. Multiple regressions analysis was conducted to test hypotheses 1, 2, and 3 which is to test the direct relationship between job demand, employee resilience, and social support were tested against psychological

stress. The findings revealed that both employee resilience and social support were negatively related to psychological stress supporting Hypotheses 2 and 3.

5.3 Relationship between Job Demand and Psychological Stress

It was predicted earlier that job demand will positively relates to psychological stress indicating higher job demand resulted in higher psychological stress experience by the participants. However, the current study found that job demand does not contribute to the occurrence of psychological stress experienced by the participants. In this study, job demand is refers as having to work fast and hard, having a great deal to do and having too little time.

This is in contrast to much of the prior research that tends to link high job demand with higher levels of stress that leads to believe that job demand itself may not be a principal contributor to psychological stress in nonclinical hospital workers. This suggests that there are other more relevant factors in this case such as working conditions or emotion-focused coping mechanisms can lead to job stress.

The lack of a positive relationship in this study can be explained more deeply by the differentiation of challenge versus hindrance demands. Kim et al. (2023) argued that when job demands are viewed as constructive challenges like heavy workload or time pressure as a barrier to work, they can be viewed as positive energizing opportunities to personally achieve something, rather than just a burden. For the non-clinical staff in this study, operational and infrastructural hospital committments may provide a psychological buffer in form of structure and goal accomplishment.

Job demand may not be directly related to stress in this scenario, but it is important to understand how the various dimensions of job demands like workload and organization support interact with psychological health. These findings emphasize how stress in non-clinical staff was diverse and suggest further investigation of other sources of stressors and coping will be helpful.

This view is consistent with the JD-R framework by Kim et al. (2023) which states that the adverse effects of high job demands are greatly lessened for individuals with what is referred to as a "stress-enhancing mindset." In this study, if the non-clinical staff have enough personal resources (i.e. resilience) or social support, heightened job demands may bypass the "health impairment process," as traditionaly outlined by Galdanakis and Tsitouri (2022). These demands may indeed act as a stimulus for task engagement. Thus, the absence of heightened psychological stress that accompanied higher task engagement by the participants can be explained by the psychological relief along with the sense of efficacy resultant from the completion of demanding maintenance or administrative tasks that was in excess to the psychological strain.

5.4 Relationship between Employee Resilience and Psychological Stress

Hypothesis 2 was supported as the relationship between employee resilience and psychological stress was statistically significantly negative. This result indicates that higher resilience allows employees to be much more capable in dealing with stress and consequently will exhibit less psychological distress. Resilience which is the ability to recover from stress exposure and adapt to adversity plays an important role in reducing the deleterious impact of stress. (Galy et al., 2023). These findings are

in accordance with previous studies which emphasize the role resilience plays as a buffer of stress adversities. Among non-clinical staff in hospitals, the promotion of resilience may represent an important tool in lowering psychological distress and increasing well-being. Therefore, it would be helpful to have interventions that improve resilience amongst staff which might help tackle the issue of work-related stress and mental health.

5.5 Relationship between Social Support and Psychological Stress

Social support was found negatively related to psychological stress as predicted. In this study, social support was measured by helpful social interaction available on the job from co-workers and supervisors. The findings indicate that the more social support received by the non-medical staffs from their co-workers and supervisors, the less they will experience psychological stress.

Social support including emotional, informational and instrumental assistance from coworkers, family or friends serves as a protective mechanism against work-related pressures. (Costa-Cordella et al., 2021). The findings are supported by previous literature that indicate social support as an important buffering factor that enables people to more effectively manage and diminish the negative impact of stress. Such strong social support network could help in coping with stress effectively in non-clinical hospital staff by facilitating resilience and overall mental well-being. This finding highlights the value of promoting a helpful working environment in which workers can obtain resources and emotional supports to relieve stress perception and improve well-being.

5.6 Contribution of Study

5.6.1 Contribution towards Knowledge

There are several contributions that can be drawn from the current study to the body of knowledge on psychological stress. First, new empirical evidence that emerge from the study on the relationship between job demand, employee resilience, social support, and psychological stress. Though in the past, all these factors were found to be related to psychological stress, in this study only employee resilience and social support were found significant. Interestingly, job demand does not have any effect on the psychological stress experience by the non-clinical staffs.

Secondly, realizing that not many studies have explored the issues of psychological stress among non-clinical staff especially in the Malaysian context, the findings give significant input especially in the healthcare industry. The validity of the job demand, employee resilience, and social support in the healthcare context reflects the model's wide applicability in different context. This is another contribution of this study. Thus, the current findings provide new insights on issues of psychological stress among non-clinical staffs in Malaysia.

5.6.2 Contribution towards Practice

The empirical results in this study are also useful to hospital administrators in Malaysia as they can aid in making fully informed data-related decisions on employee workloads, training and organizational support functions. The study also demonstrates particular forms of employee stress within the hospice concession sector that can assist

in other comparisons in health care and in formulating policies that provide organizational support to employees in health care facilities and in the improvement of the management of the health care organizations. Thus, the empirical results also add to knowledge in the area of psychological stress, proving that other studies on health care can be of high relevance in improving the organizational support, health care services and patient safety as well as in resulting the other empirical results.

5.7 Limitations and Direction for Future Study

Based on the current findings, several interesting questions remain. In particular, the question of why job demand does not influence the psychological stress experienced by the non-clinical staffs in hospital. Thus, future research is needed to reconcile these explanations or to show that there are conditions where psychological stress can be reduced.

Since this study adopting quantitative approach with cross-sectional design, this method offers limited information regarding why those factor does not have any influence on the psychological stress. Perhaps, in the future, it may worth investigating the factors that contribute to the occurrence of psychological stress using qualitative approach.

There is also a need for future research to extend the exploration of the occurrence of psychological stress as this study only tested three variables namely, job demand, employee resilience dan social support. The results showed that on 36.7% of the variance in psychological stress was significantly explained by job demand, employee resilience and social support. Thus, by testing other variables perhaps may produce different results.

In short, while there are some limitations associated with the approach used here and given the exploratory nature of the study, the results of this study provide useful and new evidence that should be of interest both researchers and practitioners.

5.8 Conclusion

The aim of this study was to investigate factors that might relate to psychological stress. The main concern is the role of job demand, employee resilience, and social support on psychological stress. The findings showed that only employee resilience and social support were contributed to the occurrence of psychological stress among non-clinical staffs. The findings indicate that having high job demand, and limitations of time to complete the given task has not put pressure on those non-clinical staffs, and thus, not causes psychological stress. In addition, employee who are resilience and receive high social support then to have lesser psychological stress. It is hoped that through the examination of the job demand, employee resilience, and social support in predicting the occurrence of psychological stress, a more complete understanding of the influence of these factors will be achieved.

REFERENCES

Abbott, B. B., & Bordens, K. S. (2011). *Research design and methods: A process approach* (8th ed.). McGraw-Hill Companies, Inc

Abubaker Blbas, H. T. (2023). Descriptive statistics. *IntechOpen*. https://doi.org/10.5772/intechopen.1002179

Ackoff, R. L. (1953). *The design of social research.* University of Chicago Press

Alotiby, A. (2024). Immunology of stress: A review article. *Journal of Clinical Medicine, 13*(21), 6394. https://doi.org/10.3390/jcm13216394

Alvita, L. S., Cardoza, P., Moras, M., & Fernandes, J. (2025). Workload analysis and determination of staff requirement in the maintenance department of a hospital: A cross-sectional study. *RGUHS Journal of Allied Health Sciences,* 5(1), 1–8. https://doi.org/10.53926/RJAHS.2025.5.1.2859

Asia News Network. (2025, February 12). Malaysia makes digital health progress, but staffing woes remain. https://asianews.network/malaysia-makes-digital-health-progress-but-staffing-woes-remain/

Baharudin, S. F. B. (2022). *Implementation and improvement practices for outsourced facilities management services in Malaysia's public hospitals* (Master's thesis, Universiti Teknologi Malaysia). https://eprints.utm.my

Bakker, A., & Demerouti, E. (2024). Job demands-resources theory: Frequently asked questions. *Journal of Occupational Health Psychology, 29(*3), 188–200. https://doi.org/10.1037/ocp0000376

Barthel, M.-C., Fricke, K., Muehlhan, M., Vogel, S., & Alexander, N. (2025). Habituation of the biological response to repeated psychosocial stress: A systematic review and meta-analysis. *Neuroscience & Biobehavioral Reviews, 169*, 105996. https://doi.org/10.1016/j.neubiorev.2024.105996

Britt, T. W., Shen, W., Sinclair, R. R., Grossman, M. R., & Klieger, D. M. (2016). How much do we really know about employee resilience? *Industrial and Organizational Psychology, 9*(2), 378–404. https://doi.org/10.1017/iop.2015.107

Bryman, A., & Bell, E. (2003) *Business research methods*. Oxford University Press

Campoamor, N. B., Guerrini, C. J., Brooks, W. B., Bridges, J. F. P., & Crossnohere, N. L. (2024). Pretesting Discrete-Choice Experiments: A Guide for Researchers. *The patient, 17*(2), 109–120. https://doi.org/10.1007/s40271-024-00672-z

Bucala, M., Vyas, J., Ameling, J., Jordan, K., Lukela, J., & Chrouser, K. (2025). A narrative review, qualitative analysis and development of a conceptual model of workplace stress factors among non-clinical healthcare staff. *Journal of Hospital Management and Health Policy, 9*(10), 1-15.

Casteel, A., & Bridier, N. L. (2021). Describing populations and samples in doctoral student research. *International Journal of Doctoral Studies, 16*, 339–362. https://doi.org/10.28945/4766

Cohen, J. (1988). *Statistical power analysis for the behavioural sciences.* Routledge.

Cohen, S., Gianaros, P. J., & Manuck, S. B. (2016). A stage model of stress and disease. *Perspectives on Psychological Science, 11*(4), 456–463. https://doi.org/10.1177/1745691616646305

Costa-Cordella, S., Arechabala-Mansilla, M. C., Parada, F. J., & Ferreira, M. R. (2021). Social support as a resource for mental health: Conceptual definitions and theoretical approaches. *International Journal of Environmental Research and Public Health, 18(*19), 10317. https://doi.org/10.3390/ijerph181910317

Creswell, J. W. (2003). *Research design: Qualitative, quantitative, and mixed methods approaches*. Sage publications.

Demerouti, E., & Bakker, A. B. (2023). Job demands–resources theory in times of crisis: New propositions. *Organizational Psychology Review, 13*(3), 209–236. https://doi.org/10.1177/20413866221135012

Dhir, S., Mohapatra, M., & Srivastava, S. (2023). The effect of workplace loneliness on employee wellbeing: Role of organizational support and resilience. *Global Business Review, 30* https://doi.org/10.1177/09721509231174738

Doody, O., & Doody, C. M. (2015). Conducting a pilot study: Case study of a novice researcher. *British Journal of Nursing, 24*(21), 1074–1078. https://doi.org/10.12968/bjon.2015.24.21.1074

Eldridge, S. M., Lancaster, G. A., Campbell, M. J., Thabane, L., Hopewell, S., Coleman, C. L., & Bond, C. M. (2016). Defining feasibility and pilot studies in preparation for randomized controlled trials: Development of a conceptual framework. *PLOS ONE, 11*(3), e0150205. https://doi.org/10.1371/journal.pone.0150205

Field, A. (2013). Discovering statistics using IBM SPSS statistics (4th ed.). SAGE Publications.

Fincham, J. E. (2008). Response rates and responsiveness for surveys, standards, and the journal. *American Journal of Pharmaceutical Education, 72*(2), Article 43. https://doi.org/ 10.5688/aj720243

Fisal, N. A. A., & Ludin, S. M. (2024). Exploring psychological distress experiences among Intensive Care Unit nurses while caring for COVID-19 patients. *Malaysian Journal of Medicine and Health Sciences, 20*(4), 1–10.

Fox, J. (2015). Applied regression analysis and generalized linear models (3rd ed.). SAGE Publications.

Galanakis, M., & Tsitouri, E. (2022). Job demands and resources as antecedents of burnout in a crisis context: A systematic review and meta-analysis. *Frontiers in Psychology, 13*, Article 901036. https://doi.org/10.3389/fpsyg.2022.901036

Galy, B., Bareil, C., & Lalonde, L. (2023). Resilience at work: A resource-based conceptualization. *Human Resource Development Review, 22*(1), 5–33. https://doi.org/10.1177/15344843221130520

Ghasemi, S., Zahraei, S. M., & Rahimi, M. (2024). Psychological stress and its implications for mental health: A comprehensive review. *Frontiers in Psychology, 15*, 1298457. https://doi.org/10.3389/fpsyg.2024.1298457

Hair, J., Black, W., Babin, B., Anderson, R., & Tatham, R. (2006). *Multivariate data analysis* (6th ed.). Pearson Prentice Hall.

Hair, J., Black, W., Babin, B., & Anderson, R. (2010). *Multivariate data analysis* (7th ed.). Prentice-Hall.

Hayes, A. (2020). *Stratified Random Sampling*. Retrieved from https://www.investopedia.com/terms/stratified_random_sampling.asp

Hashim, S., Mohamad, S. F., Abdul Halim-Lim, S., & Che Ahmat, N. H. (2022). Pretesting survey questionnaire: A guide on dissemination. International *Journal of Academic Research in Economics and Management Sciences, 11*(3), 408–416. https://doi.org/10.6007/IJAREMS/v11-i3/15228

Hilton, C. E. (2015). The importance of pretesting questionnaires: A field research example of cognitive pretesting the Exercise Referral Quality of Life Scale (ER-QLS). *International Journal of Social Research Methodology,*1-14 https://doi.org/10.1080/13645579.2015.1091640

Husin, M., Ab Rahman, N., Wong, X. C., Mohamad Noh, K., Tong, S. F., Schäfer , W., Boerma, W., Atun, R., & Sivasampu, S. (2020). Recruitment and participation of a survey in a public-private primary care setting: Experience from the QUALICOPC Malaysia. *Primary Health Care Research & Development, 21*, Article e51. https://doi.org/ 10.1017/S1463423620000511

Janssen, O. (2001). Fairness perceptions as a moderator in the curvilinear relationships between job demands, and job performance and job satisfaction. *Academy of Management Journal, 44*(5), 1039–1050. https://doi.org/10.2307/3069440

Johnston, L., Jacobson, E., & Stevens, P. (2017). Enhancing survey validity through pre-testing methods: Insights from cognitive interviews. *Research in Social and Administrative Pharmacy, 13*(2), 372–378.

Kazar, G., & Rahmanzadeh, P. (2024). The impact of mental health disorders and job demands on the individual job performance of construction workers. *Journal of Occupational Health, 66*(1), uiae060. https://doi.org/10.1093/joccuh/uiae060

Kim, H., Shin, K., & Hwang, J. (2023). Too much may be a bad thing: The difference between challenge and hindrance job demands. *Current Psychology, 42*, 29019–29031. https://doi.org/10.1007/s12144-023-04790-z

Krejcie, R. V., & Morgan, D. W. (1970). Determining sample size for research activities. *Educational and Psychological Measurement, 30*, 607 – 610. https://doi.org/10.1177/001316447003000308

Kuntz, J. R. C., Naswall, K., & Malinen, S. (2016). Resilient employees in resilient organizations: Flourishing beyond adversity. *Industrial and Organizational Psychology*, *9*(2), 456–462. https://doi.org/10.1017/iop.2016.39

Lemyre, L., & Lalande-Markon, M.-P. (2009). Psychological stress measure (PSM-9): Integration of an evidence-based approach to assessment, monitoring, and evaluation of stress in physical therapy practice. *Physiotherapy Theory and Practice, 25*(5-6), 453–462. https://doi.org/10.1080/09593980902886321

Lenzner, T., Kaczmirek, L., & Lenzner, A. (2018). *The SAGE Handbook of Survey Methodology*. SAGE Publications.

Limone, P., Toto, G. A., Guarini, P., & di Furia, M. (2022). *Online quantitative research methodology: Reflections on good practices and future perspectives*. Learning Science Hub, University of Foggia.

Mohamad, N., Yaacob, S. S., Ismail, R., Abdul Shukor, I. H., Mohamad, M. Z., Mahmud, M. F., & Ibrahim, M. F. (2025). Mental health outcomes and occupational stress among Malaysian frontline workers during the COVID-19 pandemic. *Healthcare, 13*(20), 2584. https://doi.org/10.3390/healthcare13202584

Näswall, K., Malinen, S., Kuntz, J., & Hodliffe, M. (2019). Employee resilience: Development and validation of a measure. *Journal of Managerial Psychology*, *34*(5), 353–367. https://doi.org/10.1108/JMP-02-2018-0102

Oribhabor, C. B., & Anyanwu, C. A. (2019). Research sampling and sample size determination: A practical application. *Federal University Dutsin-Ma Journal of Educational Research (Fudjer), 2*(1), 47–56.

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences, 6*(2), 1–5. https://doi.org/10.4172/2162-6359.1000403

Reynolds, N., Diamantopoulos, A., & Schlegelmilch, B. (1993). Pre-testing in questionnaire design: A review of the literature and suggestions for further research. *Market Research Society Journal*, *35*(2), 1-11. https://doi.org/10.1177/147078539303500202

Salant, P. A., & Dillman, D. A. (2004). *How to conduct your own survey*. John Wiley & Sons, Inc.

Sekaran, U., & Bougie, R. (2013) *Research methods for business: A skill-building approach* (6th ed.). Wiley.

Sharoni, S. K. A., Jamal, K. N., Fauzi, R., & Yusoff, M. K. M. (2021). Psychosocial and physical stressors among healthcare providers in Intensive Care Unit and Emergency and Trauma Department. *ESTEEM Journal of Social Sciences and Humanities,* *5*(2), 49–60. https://esteemjssh.uitm.edu.my/index.php/journal/article/view/104

Taherdoost, H. (2016). Sampling method in research methodology: How to choose a sampling technique for research. *International Journal of Academic Research in Management, 5*(20), 18 – 27. http://doi.org/ 10.2139/ssrn.3205035

Thabane, L., Ma, J., Chu, R., Cheng, J., Ismaila, A., Rios, L. P., Robson, R., & Goldsmith, C. H. (2010). A tutorial on pilot studies: The what, why and how. *BMC Medical Research Methodology, 10*, 1–7. https://doi.org/10.1186/1471-2288-10-67

Van Veldhoven, M., & Meijman, T. F. (1994). *Het meten van psychosociale arbeidsbelasting met een vragenlijst:De Vragenlijst Beleving en Beoordeling van de Arbeid* [*The measurement of psychosocial strain at work: The questionnaire experience and evaluation of work*]. NIA.

Willie, M. M. (2024). Population and target population in research methodology. *Golden Ratio of Social Science and Education*, *4*(1), 75–79. https://doi.org/10.52970/grsse.v4i1.405

Woon, L. S., & Tiong, C. P. (2020). Burnout, mental health, and quality of life among employees of a Malaysian hospital: A cross-sectional study. *Annals of Work Exposures and Health, 64*(9), 1007–1019. https://doi.org/10.1093/annweh/wxaa075

Yun, G. W., & Trumbo, C. W. (2000). Comparative response to a survey executed by post, e-mail, and web form. *Journal of Computer Mediated Communication*, *6*(1), Article 613. https://doi.org/10.1111/j.1083-6101.2000.tb00112.x

Zikmund, W. G., Babin, B. J., Carr, J. C., & Griffin, M. (2010). *Business research methods*. South Western Cengage Learning.

Zikmund, W. G., Babin, J., & Carr, J. (2000). *Business research methods*. South Western Greengage Learning.

Zikmund, W. G., Carr, J. C., Babin, B., & Griffin, M. (2013). *Business research methods*: Nelson Education.

APPENDICES

APPENDIX A

A STUDY ON PSYCHOLOGICAL STRESS

Dear Participant,

Thank you for agreeing to participate in this research.

I would appreciate it if you could answer the questions carefully as the information you provide will influence the accuracy and the success of this research. It will take no longer than 30 minutes to complete the questionnaire. All answers will be treated with strict confidence and will be used for the purpose of the study only.

If you have any questions regarding this research, you may address them to me at the contact details below.

Thank you for your cooperation and the time taken in answering this questionnaire.

Yours sincerely,

Zul Hilmi Bin Shamsuddin
Master Candidate
School of Business Management
Universiti Utara Malaysia
HP: 0179747971
Email: zulhilmishamsuddin@moh.gov.my

APPENDIX A

SECTION ONE

INSTRUCTION: Please read each of the following items and indicate whether you agree or disagree with each of the statement. Please indicate your choice by circling the number in the range given.

	Strongly diagree	Disagree	Neutral	Agree	Strongly agree
PS1 I feel calm (R)	1	2	3	4	5
PS2 I feel rushed, I do not seem to have enough time	1	2	3	4	5
PS3 I suffer from physical aches and pains, sore back, headaches, stiff neck, stomach aches	1	2	3	4	5
PS4 I feel preoccupied, tormented or worried	1	2	3	4	5
PS5 I feel confused, my thoughts are muddled, I lack concentration	1	2	3	4	5
PS6 I feel full of energy and keen (R)	1	2	3	4	5
PS7 I feel a great weight on my shoulders	1	2	3	4	5
PS8 I have difficulty controlling my reactions, emotions, moods or gestures	1	2	3	4	5
PS9 I feel stressed	1	2	3	4	5

APPENDIX A

SECTION TWO

INSTRUCTION: Please read each of the following items and indicate whether you agree or disagree with each of the statement. Please indicate your choice by circling the number in the range given.

	Strongly diagree	Disagree	Neutral	Agree	Strongly agree
JD1 I have to work fast	1	2	3	4	5
JD2 I have too much work to do	1	2	3	4	5
JD3 I have to work extra hard to finish a task	1	2	3	4	5
JD 4 I work under time pressure	1	2	3	4	5
JD5 I can do my work in comfort (R)	1	2	3	4	5
JD6 I have to deal with a backlog at work	1	2	3	4	5
JD7 I have problems with the pace of work	1	2	3	4	5
JD8 I have problems with the workload	1	2	3	4	5

APPENDIX A

SECTION THREE

INSTRUCTION: Please read each of the following items and indicate whether you agree or disagree with each of the statement. Please indicate your choice by circling the number in the range given.

	Strongly diagree	Disagree	Neutral	Agree	Strongly agree
ER1 I effectively collaborate with others to handle unexpected challenges at work.	1	2	3	4	5
ER2 I successfully manage a high workload for long periods of time.	1	2	3	4	5
ER3 I resolve crises competently at work.	1	2	3	4	5
ER4 I learn from mistakes at work and improve the way I do my job.	1	2	3	4	5
ER5 I re-evaluate my performance and continually improve the way I do my work.	1	2	3	4	5
ER6 I effectively respond to feedback at work, even criticism.	1	2	3	4	5
ER7 I seek assistance to work when I need specific resources.	1	2	3	4	5
ER8 I approach managers when I need their support.	1	2	3	4	5
ER9 I use change at work as an opportunity for growth.	1	2	3	4	5

APPENDIX A

SECTION FOUR

INSTRUCTION: Please read each of the following items and indicate whether you agree or disagree with each of the statement. Please indicate your choice by circling the number in the range given.

	Strongly diagree	Disagree	Neutral	Agree	Strongly agree
SS1 My supervisor is concerned about the welfare of those under them	1	2	3	4	5
SS2 My supervisor pays attention to what I am saying	1	2	3	4	5
SS3 My supervisor is helpful in getting the job done	1	2	3	4	5
SS4 My supervisor is successful in getting people to work together	1	2	3	4	5
SS5 People I work with are competent in doing their jobs	1	2	3	4	5
SS6 People I work with take a personal interest in me	1	2	3	4	5
SS7 People I work with are friendly	1	2	3	4	5
SS8 When needed, my colleagues will help me	1	2	3	4	5

PERSONAL INFORMATION

This part contains few demographic information pertaining to yourself.
Please tick **(√) in the box or write your response in the space provided.**

1. My gender:

☐ Male ☐ Female

2. My age:

☐ 21-30 years ☐ 41-50 years
☐ 31-40 years ☐ 50 years and above

3. My marital status:

☐ Single ☐ Married ☐ Divorced / Separated / Widowed

4. My highest academic qualification:

☐ Secondary School
☐ Certificate
☐ Diploma
☐ First Degree
☐ Master degree
☐ Doctorate Degree (PhD)

5. My current monthly salary:

☐ Below RM 1000 ☐ RM 1001 – RM 2000
☐ RM 2001 – RM 3000 ☐ RM 3001 – RM 4000
☐ RM 4001 – RM 5000 ☐ Above RM 5001

6. Number of years with company:

☐	Less than a year	☐	1 – 3 years
☐	4 – 7 years	☐	More than 7 years

7. Number of years in present position:

☐	Less than a year	☐	4 - 7 years
☐	1 - 3 years	☐	More than 7 years

8. My current position: _____

--THANK YOU FOR TAKING THE TIME TO COMPLETE THIS SURVEY--

APPENDIX B

KAJIAN BERKAITAN STRES PSIKOLOGI

Kepada responden,

Terima kasih kerana bersetuju untuk terlibat dalam penyelidikan ini.

Saya amat-amat menghargai sekiranya anda dapat menjawab soalan dengan teliti kerana maklumat yang diberikan akan mempengaruhi ketepatan dan kejayaan kajian ini. Soal selidik ini dijangka akan mengambil masa sekurang-kurangnya 30 minit sahaja. Semua maklumat yang diberikan akan dirahsiakan pada setiap waktu tanpa mendedahkan nama responden dan hanya digunakan untuk tujuan penyelidikan semata-mata.

Sekiranya terdapat sebarang pertanyaan mengenai penyelidikan ini, responden boleh menghubungi penyelidik seperti nombor di bawah.

Terima kasih di atas kerjasama dan masa yang diambil bagi menjawab soal selidik ini.

Yang benar,

Zul Hilmi Bin Shamsuddin
Pelajar Pascasiswazah
Pusat Pengajian Pengurusan Perniagaan
Universiti Utara Malaysia
HP: 0179747971
Email : zulhilmishamsuddin@moh.gov.my

APPENDIX B

BAHAGIAN SATU

ARAHAN: Sila baca setiap pernyataan di bawah dan nyatakan samada anda bersetuju atau tidak bersetuju dengan setiap pernyataan tersebut. Sila nyatakan pilihan anda dengan membulatkan nombor dalam julat yang diberikan.

	Sangat tidak setuju	Tidak setuju	Neutral	Setuju	Sangat setuju
PS1 Saya berasa tenang (R)	1	2	3	4	5
PS2 Saya berasa seperti tergesa-gesa, seolah-olah saya tidak mempunyai masa yang mencukupi	1	2	3	4	5
PS3 Saya mengalami sakit fizikal seperti sakit belakang, sakit kepala, leher yang tegang, sakit perut	1	2	3	4	5
PS4 Saya berasa seperti asyik memikirkan sesuatu, terseksa atau bimbang	1	2	3	4	5
PS5 Saya berasa keliru, fikiran berserabut, kurang tumpuan	1	2	3	4	5
PS6 Saya berasa bertenaga dan bersemangat (R)	1	2	3	4	5
PS7 Saya berasa seperti ada beban yang berat di bahu	1	2	3	4	5
PS8 Saya sukar untuk mengawal reaksi, emosi, mood atau gerak geri	1	2	3	4	5
PS9 Saya berasa tertekan	1	2	3	4	5

APPENDIX B

BAHAGIAN DUA

ARAHAN: Sila baca setiap pernyataan di bawah dan nyatakan samada anda bersetuju atau tidak bersetuju dengan setiap pernyataan tersebut. Sila nyatakan pilihan anda dengan membulatkan nombor dalam julat yang diberikan.

	Sangat tidak setuju	Tidak setuju	Neutral	Setuju	Sangat setuju
JD1 Saya perlu bekerja dengan cepat	1	2	3	4	5
JD2 Saya mempunyai banyak kerja untuk dilaksanakan	1	2	3	4	5
JD3 Saya perlu bekerja lebih keras untuk menyiapkan sesuatu tugasan	1	2	3	4	5
JD 4 Saya bekerja di bawah tekanan masa	1	2	3	4	5
JD5 Saya boleh melakukan kerja dengan selesa (R)	1	2	3	4	5
JD6 Saya perlu menangani tunggakan kerja di tempat kerja	1	2	3	4	5
JD7 Saya mempunyai masalah dengan kelajuan dalam menyiapkan kerja	1	2	3	4	5
JD8 Saya mempunyai masalah bebanan kerja	1	2	3	4	5

APPENDIX B

BAHAGIAN TIGA

ARAHAN: Sila baca setiap pernyataan di bawah dan nyatakan samada anda bersetuju atau tidak bersetuju dengan setiap pernyataan tersebut. Sila nyatakan pilihan anda dengan membulatkan nombor dalam julat yang diberikan.

	Sangat tidak setuju	Tidak setuju	Neutral	Setuju	Sangat setuju
ER1 Saya boleh bekerjasama dengan orang lain secara efektif dalam menangani cabaran yang tidak dijangka di tempat kerja	1	2	3	4	5
ER2 Saya berupaya mengurus beban kerja yang tinggi dalam tempoh yang panjang	1	2	3	4	5
ER3 Saya cekap menguruskan krisis di tempat kerja	1	2	3	4	5
ER4 Saya belajar dari kesilapan semasa di tempat kerja dan memperbaiki cara saya melakukan kerja	1	2	3	4	5
ER5 Saya menilai semula prestasi saya dan memperbaiki cara saya melakukan kerja secara berterusan	1	2	3	4	5
ER6 Saya memberi respon secara efektif terhadap maklumbalas termasuklah kritikan	1	2	3	4	5
ER7 Saya mendapatkan bantuan dalam bekerja apabila saya memerlukan sumber tertentu	1	2	3	4	5
ER8 Saya berjumpa dengan pengurus apabila saya memerlukan sokongan mereka	1	2	3	4	5

	Sangat tidak setuju	Tidak setuju	Neutral	Setuju	Sangat setuju
ER9 Saya mengunakan perubahan yang berlaku di tempat kerja sebagai peluang untuk pengembangan	1	2	3	4	5

APPENDIX B

BAHAGIAN EMPAT

INSTRUCTION: Please read each of the following items and indicate whether you agree or disagree with each of the statement. Please indicate your choice by circling the number in the range given.

	Sangat tidak setuju	Tidak setuju	Neutral	Setuju	Sangat setuju
SS1 Penyelia saya mengambil berat tentang kebajikan orang di bawah seliaan mereka	1	2	3	4	5
SS2 Penyelia saya memberi perhatian kepada apa yang saya katakan	1	2	3	4	5
SS3 Penyelia saya sangat membantu dalam memastikan kerja dapat disiapkan	1	2	3	4	5
SS4 Penyelia saya mempunyai keupayaan dalam membuat orang lain untuk bekerja secara bersama	1	2	3	4	5
SS5 Rakan sekerja saya sangat cekap dalam melakukan kerja mereka	1	2	3	4	5
SS6 Rakan sekerja saya mengambil berat secara peribadi terhadap saya	1	2	3	4	5
SS7 Rakan sekerja saya sangat mesra	1	2	3	4	5
SS8 Apabila diperlukan, rakan sekerja saya akan membantu saya	1	2	3	4	5

MAKLUMAT LATAR BELAKANG

Bahagian ini mengandungi maklumat demografi berkaitan dengan diri anda. Sila tandakan (√) di kotak atau isikan maklumat di ruang yang disediakan

1. Jantina:

   ☐ Lelaki ☐ Perempuan

2. Umur:

   ☐ 21-30 tahun ☐ 41-50 tahun

   ☐ 31-40 tahun ☐ 50 tahun dan ke atas

3. Status perkahwinan:

   ☐ Bujang ☐ Berkahwin ☐ Bercerai / Balu / Berpisah

4. Kelayakan Akademik Tertinggi:

   ☐ Sekolah Menengah

   ☐ Sijil

   ☐ Diploma

   ☐ Ijazah Sarjana Muda

   ☐ Ijazah Sarjana

   ☐ PhD

5. Gaji bulanan:

   ☐ Bawah RM 1000 ☐ RM 1001 – RM 2000

   ☐ RM 2001 – RM 3000 ☐ RM 3001 – RM 4000

   ☐ RM 4001 – RM 5000 ☐ Atas RM 5001

6. Jumlah tahun dengan organisasi sekarang:

☐	Kurang dari setahun	☐	1 – 3 tahun
☐	4 – 7 tahun	☐	Lebih daripada 7 tahun

7. Jumlah tahun dengan jawatan sekarang:

☐	Kurang dari setahun	☐	4 - 7 tahun
☐	1 - 3 tahun	☐	Lebih daripada 7 tahun

8. Jawatan sekarang: _____

-TERIMA KASIH DI ATAS MASA YANG DIAMBIL UNTUK MENJAWAB SOAL SELIDIK INI -

SPSS OUTPUT

Descriptive Analysis

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PS1	129	1	5	3.51	1.232	-.244	.213	-.997	.423
PS2	129	1	5	2.72	1.287	.157	.213	-1.097	.423
PS3	129	1	5	2.53	1.398	.476	.213	-1.012	.423
PS4	129	1	5	2.29	1.041	.352	.213	-.859	.423
PS5	129	1	5	2.36	1.172	.229	.213	-1.116	.423
PS6	129	2	5	3.98	.848	-.283	.213	-.875	.423
PS7	129	1	5	2.83	1.269	.047	.213	-.983	.423
PS8	129	1	5	2.45	1.218	.290	.213	-1.088	.423
PS9	129	1	5	2.57	1.249	.239	.213	-1.055	.423
Valid N (listwise)	129								

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
JD1	129	1	5	3.99	.870	-.923	.213	1.186	.423
JD2	129	2	5	4.05	.883	-.645	.213	-.305	.423
JD3	129	1	5	4.08	.797	-.800	.213	1.053	.423
JD4	129	1	5	3.75	1.046	-.567	.213	-.346	.423
JD5	129	1	4	2.02	1.046	.593	.213	-.918	.423
JD6	129	1	5	3.44	1.022	-.442	.213	.034	.423
JD7	129	1	5	3.40	.939	-.180	.213	.023	.423
JD8	129	1	5	3.50	.885	-.469	.213	.258	.423
Valid N (listwise)	129								

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
ER1	129	2	5	4.05	.878	-.459	.213	-.786	.423
ER2	129	1	5	3.47	.993	-.170	.213	-.243	.423
ER3	129	1	5	3.56	.918	.072	.213	-.276	.423
ER4	129	2	5	4.31	.769	-.807	.213	-.150	.423
ER5	129	2	5	4.11	.822	-.462	.213	-.706	.423
ER6	129	1	5	4.09	.875	-1.020	.213	1.338	.423
ER7	129	1	5	4.07	1.084	-1.150	.213	.738	.423
ER8	129	1	5	4.04	1.056	-.846	.213	-.196	.423
ER9	129	1	5	4.11	.929	-.991	.213	.793	.423
Valid N (listwise)	129								

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
SS1	129	1	5	3.20	1.214	.004	.213	-.936	.423
SS2	129	1	5	3.36	1.191	-.386	.213	-.605	.423
SS3	129	1	5	3.40	1.176	-.217	.213	-.873	.423
SS4	129	1	5	3.53	1.001	-.028	.213	-.655	.423
SS5	129	1	5	3.67	1.148	-.543	.213	-.399	.423
SS6	129	1	5	3.19	1.249	-.237	.213	-.963	.423
SS7	129	1	5	3.86	1.095	-.589	.213	-.409	.423
SS8	129	1	5	4.18	.996	-.994	.213	.251	.423
Valid N (listwise)	129								

Descriptive Statistics

	N	Minimum	Maximum	Mean	Std. Deviation	Skewness		Kurtosis	
	Statistic	Statistic	Statistic	Statistic	Statistic	Statistic	Std. Error	Statistic	Std. Error
PSYCHOSOCIAL	129	1	4	2.47	.667	.096	.213	-.678	.423
JOB	129	3	5	3.77	.549	-.007	.213	-.278	.423
EMPLOYEE	129	2	5	3.98	.675	-.355	.213	-.740	.423
SOCIAL	129	2	5	3.55	.809	.125	.213	-.639	.423
Valid N (listwise)	129								

Correlations Analysis

Correlations

		PSYCHOSOCIAL	JOB	EMPLOYEE	SOCIAL
PSYCHOSOCIAL	Pearson Correlation	1	.017	-.541***	-.515***
	Sig. (2-tailed)		.848	<.001	<.001
	N	129	129	129	129
JOB	Pearson Correlation	.017	1	.186*	.103
	Sig. (2-tailed)	.848		.034	.247
	N	129	129	129	129
EMPLOYEE	Pearson Correlation	-.541***	.186*	1	.580***
	Sig. (2-tailed)	<.001	.034		<.001
	N	129	129	129	129
SOCIAL	Pearson Correlation	-.515***	.103	.580***	1
	Sig. (2-tailed)	<.001	.247	<.001	
	N	129	129	129	129

***. Correlation at 0.001(2-tailed)

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

Regression Analysis

Model Summary[b]

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	Change Statistics					Durbin-Watson
					R Square Change	F Change	df1	df2	Sig. F Change	
1	.606[a]	.367	.352	.537	.367	24.207	3	125	<.001	1.835

a. Predictors: (Constant), SOCIAL, JOB, EMPLOYEE

b. Dependent Variable: PSYCHOSOCIAL

ANOVA[a]

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	20.910	3	6.970	24.207	<.001[b]
	Residual	35.992	125	.288		
	Total	56.902	128			

a. Dependent Variable: PSYCHOSOCIAL

b. Predictors: (Constant), SOCIAL, JOB, EMPLOYEE

Coefficients[a]

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.	Collinearity Statistics	
		B	Std. Error	Beta			Tolerance	VIF
1	(Constant)	4.330	.402		10.777	<.001		
	JOB	.146	.088	.121	1.664	.099	.965	1.036
	EMPLOYEE	-.383	.087	-.388	-4.389	<.001	.647	1.545
	SOCIAL	-.249	.072	-.302	-3.460	<.001	.664	1.507

a. Dependent Variable: PSYCHOSOCIAL

Reliability Analysis (Psychological Stress)

Reliability Statistics

Cronbach's Alpha	N of Items
.734	9

Reliability Analysis (Job Demand)

Reliability Statistics

Cronbach's Alpha	N of Items
.714	8

Reliability Analysis (Employee Resilience)

Reliability Statistics

Cronbach's Alpha	N of Items
.888	9

Reliability Analysis (Social Support)

Reliability Statistics

Cronbach's Alpha	N of Items
.861	8