

Impact of Stressors caused by Covid-19 to Employees' Mental Health

By

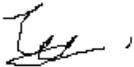
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**Project Paper Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Business Administration
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DECLARATION

The author hereby declares that this project paper is the original study undertaken by him unless stated otherwise. The acknowledgement has been given to references quoted in the list of references. The views and analysis in this study are that of author's, based on the references made, and this does not constitute an invitation to use this study as a technical tool for management purpose.

Signature : 

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Date : November 6, 2020

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Abstract of the project paper submitted to the Senate of Universiti Tun Abdul Razak in partial fulfillment of the requirements for the Master of Business Administration.

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By

Lee Loh Joo

November, 2020

This paper examines the impact of coronavirus COVID-19 outbreak on employees' mental health, specifically psychological distress and depression. It aims at identifying the main stressors during and post COVID-19, examining the main moderating factors which may mitigate or aggravate the impact of COVID-19 on employees' mental health and finally to suggest recommendations from a human resource management perspective to mitigate COVID-19's impact on employees' mental health. The research identifies negative impact of COVID-19 on individual's mental health. Stressors include perception of safety, threat and risk of contagion, infobesity versus the unknown, quarantine and confinement, stigma and social exclusion as well as financial loss and job insecurity. Furthermore, three dimensions of moderating factors have been identified: organizational, institutional and individual factors. In addition, a list of recommendations has been presented to mitigate the impact of COVID-19 on the employee's mental health, during and after the outbreak, from a human resource management perspective. Coronavirus is still in a rapid progress while writing this paper. Most of current researches are biomedical focusing on individuals' physical health. In this context, mental health issues seem overlooked. This paper helps to broaden the scope of research on workplace mental health, by examining the impact of a complex new pandemic: COVID-19 on employees' mental health, from social sciences perspective, mobilizing psychology and human resource management.

CHAPTER 1

INTRODUCTION

This chapter provides the research background and rationale for the topic of the study. In addition, the research problem and objectives are discussed, and the value of this study is outlined. The last section concludes with an overview of the organization of the thesis.

1.1. Background and Rationale of the Study

On March 11, 2020, the World Health Organization (WHO) declared coronavirus (COVID-19) a pandemic. Which means a global disease outbreak threatening the whole planet. COVID-19 is an infectious disease caused by coronavirus. 'Coronaviruses (CoV) are a large family of viruses that cause illness ranging from the common cold to more severe diseases such as Middle East Respiratory Syndrome (MERS-CoV) and Severe Acute Respiratory Syndrome (SARS-CoV). A novel coronavirus (nCoV) is a new strain that has not been previously identified in humans.' (WHO, 2020a). They are transmitted between animals and humans. They include fever, dry cough, shortness of breath and breathing difficulties, tiredness with possible symptoms of aches and pains, nasal congestion, runny nose, sore throat or diarrhea (WHO, 2020a)

Coronavirus is a new virus which has been discovered with its outbreak in Wuhan, China, in December 2019. Now, it has spread at a lightning speed to affect several countries. According to WHO (2020b), on March 31, 2020, this virus has reached 202 countries, areas or territories with 693,224 confirmed cases and 33,391 deaths.

Many countries have demonstrated leadership by implementing emergency measures to prevent the infection spreading. In this context, schools and university, kindergartens, cinemas,

museums, restaurants have been closed, public gatherings and events have been cancelled, people quarantined, travel restrictions, close borders and cancelled flights from and to countries with a high level of contamination (e.g. China, Italy, France, Spain, US, Canada...)

Besides the negative impact on the individual, a pandemic can lead to sharp shocks to the worldwide economies and societies (MacIntyre, 2020; Shigemura *et al.*, 2020). According to the Organisation for Economic Co-operation and Development's (OECD) latest Interim Economic Outlook (2020), 'the coronavirus Covid-19 presents the global economy with its greatest danger since the financial crisis'. 'Even in the best-case scenario of limited outbreaks in countries outside China, a sharp slowdown in world growth is expected in the first half of 2020 as supply chains and commodities are hit, tourism drops and confidence falters. Global economic growth is seen falling to 2.4% for the whole year, compared to an already weak 2.9% in 2019' (OECD, 2020). This situation can have a negative impact on business sustainability and individual employment. In fact, this has triggered furloughs and layoffs (World Economic Forum, 2020). Employees, in this case, need to take care of themselves, of their families and to try to maintain their job position. What about their mental health in this context?

It is estimated that Malaysia loss is approximately at RM2.4 billion/day, which is 35 billion/month during the movement control order (MCO) period. Almost 50 percent of self-employed Malaysians have lost their jobs due MCO, while 28 percent of employers experienced more than 90 percent drop in their income. Among the sectors that are badly hit are manufacturing and tourism, including air travel industries. Employers are struggling to cut costs to retain their employees and might face threat of legal action for non-fulfilment of legal obligations. He called for measures to further support the needs of businesses during and post-COVID. Workers are facing serious threats during MCO that include forced leave, no-pay leaves, salary deductions and union busting.

Such unforeseen situation has cause companies from most sectors trying to reserve capitals to prepare for the rest of the emergency period, which is still a ingoing phenomenon during the time of August 2020. As the result of the budget saving act, human capital faced significant run down. Most employees have the working hour reduced, salaries cut with percentages, and unfortunate for some, being resigned by the companies. Apart from working employees, work seeker and fresh graduate have difficulties getting a job during pandemic period.

Faced with this epidemiological catastrophe, individuals have presented anxiety-related behaviours, translated into a significant shortage of sanitizers, medical masks (Shigemura *et al.*, 2020) and toilet paper (Corkery & Maheshwari, 2020). Which suggests that the coronavirus is not only a physical health's risk, but it also weighs heavily on the mental health of individuals. The best example is the tragically apparent suicide of a 37-year-old government worker, in Japan, who was responsible for looking after isolated returnees from Wuhan (China) (The Japan Times, 2020). In China, COVID-19 outbreak has led to tremendous psychological problems that have created an emerging serious challenge for mental health services in China (Li *et al.*, 2020)

Indeed, it seems that during a pandemic outbreak, especially in the case of an unknown new virus, individuals' mental health issues can sometimes be largely overlooked. The objectives of the present paper were twofold. First, to examine COVID-19 impact on employees' mental health in organizations. Secondly, to evaluate the main organizational interventions, from human resource management perspective, which may mitigate this impact. As we write this paper, the coronavirus is spreading so fast. Considering its novelty, studies, which have investigated its impact on individuals' mental health, are sparse. In addition, there are few studies that have examined this epidemiological catastrophe from a managerial perspective.

1.2. Research Problem and Objective

Even before Covid-19 there were certain features contribute to an employees' mental illness. The Covid-19 is no doubt added to this issue. Uncertain prognoses, looming severe shortages of resources for testing and treatment and for protecting responders and health care providers from infection, imposition of unfamiliar public health measures that infringe on personal freedoms, large and growing financial losses, and conflicting messages from authorities are among the major stressors that undoubtedly will contribute to widespread emotional distress and increased risk for psychiatric illness associated with Covid-19.

Public health emergencies may affect the health, safety, and well-being of both individuals (causing, for example, insecurity, confusion, emotional isolation, and stigma) and communities (owing to economic loss, work and school closures, inadequate resources for medical response, and deficient distribution of necessities). These effects may translate into a range of emotional reactions (such as distress or psychiatric conditions), unhealthy behaviors (such as excessive substance use), and noncompliance with public health directives (such as home confinement and vaccination) in people who contract the disease and in the general population. Extensive research in disaster mental health has established that emotional distress is ubiquitous in affected populations — a finding certain to be echoed in populations affected by the Covid-19 pandemic.

In this paper examine two mental health outcomes: psychological distress and major depression that can result from a pandemic or an epidemic outbreak and how managers can reduce the risks.

The objectives of this research are to:

- Investigate whether there is a positive link between Covid-19 and employees' mental illness
- Examine the effect of occupational role impact on the potency of the stressors
- Create a bridge between epidemiology, psychology and human resource management

1.3. Value of the Research

Given the importance of employees' mental health will affect employees' performances, the examination of which stressors will highly affect an employee's mental health provide an invaluable research opportunity.

Apart from reviewing the literatures, a conceptual model with well-defined and measurable variables and hypotheses is presented. The model considers the role of each different stressors cause by Covid-19 towards the employees' mental illness. The model proposed higher the stressors level, the more it impact employees' mental health. Also, it also suggests that difference of occupational role will also affect the stressors.

This research adds value for practitioners by justifying how the stressors will impact an employees' mental health, especially during pandemic. Understanding various stressors as they relate to employees can provide practitioners to further plan for future possibly catastrophe.

1.4. Research Methodology

The study adopted a quantitative approach with a field survey instrument. A questionnaire was developed in order to proceed with the data collection phase of the study. Once the field survey was completed, the study empirically tested the explanatory capabilities of the conceptual model. The results of the survey were analysed with Structural Equation Modelling (SEM) to test the research hypotheses and answer the research questions.

1.5 Structure of the thesis

The thesis is organized into six chapters. A brief description of each chapter is provided below. Chapter 2 provides a concept of global pandemic and Covid-19 and a background overview of Malaysia.

In Chapter 3, prior literature is reviewed to gain an understanding of previous studies: psychological distress and major depression that can result from a pandemic or an epidemic outbreak (Chiu et al., 2020; Lai et al., 2020; Perlis, 2020; Wu et al., 2005; Xiang et al., 2020). Based on the literature review, the conceptual model is developed and the relationships between Covid-19's stressors and mental health.

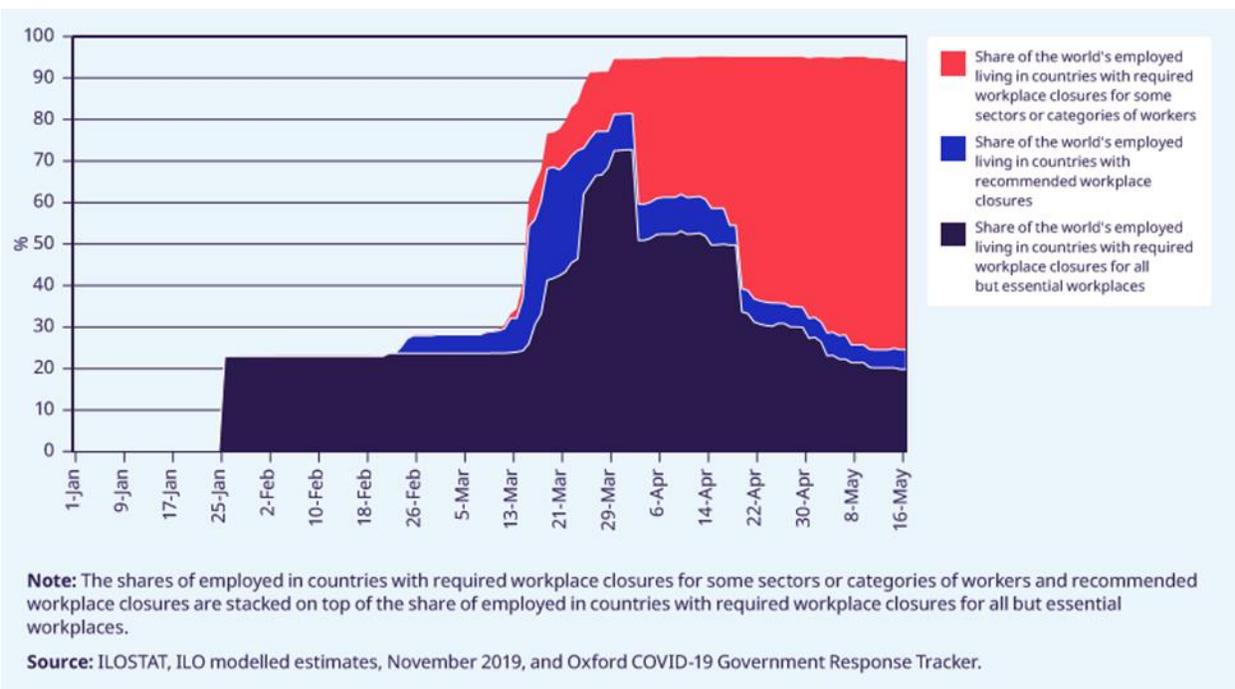
Chapter 4 represents the research design of the study. The rationale for adopting a quantitative approach and its elements of the study are described. The statistical technique to test the hypotheses is also discussed.

Chapter 5 analyses the data from the field survey and presents the results of the hypotheses. Finally, Chapter 6 discusses the key findings, and considers them in relation to the conceptual model and the hypotheses. It also specifies the key academic and theoretical contributions of the study, followed by implications for managerial practices. Additionally, the limitations of the study are acknowledged and areas for future research are suggested.

CHAPTER 2

AN OVERVIEW OF THE GLOBAL PANDEMIC

The world has been rocked by the emergence of a novel coronavirus (referred to as COVID-19), which continues to wreak havoc worldwide. It has been characterized as a global pandemic by the World Health Organization (WHO, 2020) as the number of confirmed cases and associated fatalities continue to rise. This ongoing global health crisis, along with worldwide efforts to contain the virus' transmission by “flattening the curve”, have not only resulted in unparalleled impact on human health and the global economy but also introduced unprecedented challenges for the working lives and careers of millions of people. For example, the International Labor Organization (2020) estimates a significant reduction of work hours in the second quarter of 2020 worldwide, in the order of 10.5% or the equivalent of 305 million full-time workers, along with a higher year-end projection of unemployment.



2.1. The Challenges of Maintaining Psychological Well-Being

Disease outbreaks not only disrupt basic life activities and impede economic growth (McKibbin & Fernando, 2020; Smith, KeoghBrown, & Barnett, 2011), they can also elicit both acute and long-term effects on individuals' well-being. In other words, the toll on individuals is not just physical and financial, but emotional as well. Many studies have consistently found relationships between the occurrence of infectious disease outbreaks and a host of psychological and behavioral consequences. Among the negative psychological consequences that have been most frequently reported are greater incidence of depression and psychological distress (Bai et al., 2004 Bults et al., 2011; Jones & Salathé, 2009; Shultz et al., 2016), worry (Thompson, Garfin, Holman, & Silver, 2017) functional impairment (Thompson et al., 2017), anxiety about being infected (Horney, Moore, Davis, & MacDonald, 2010; Jehn, Kim, Bradley, & Lant, 2011; Rubin, Potts, & Michie, 2010; Leggat, Brown, Aitken, & Speare, 2010), and reduced quality of life (van Hoek, Underwood, Jit, Miller, & Edmunds, 2011) and subjective well-being (Lau et al., 2008).

In terms of behavioral consequences, exposure to outbreaks also resulted in preventive behaviors such as improved hygienic practices (Bults et al., 2011; Kiviniemi, Ram, Kozlowski, & Smith, 2011), seeking medical assistance (Lau et al., 2008, Lau, Griffiths, Au, & Choi, 2011) and engaging in social distancing and isolation (Setbon, Le Pape, Létroublon, Caille-Brillet, & Raude, 2011; Wong & Sam, 2010). The above psychological and behavioral consequences are experienced by the broader workforce but perhaps more acutely by essential workers. In studies focusing on health care workers, they often report concerns about the (non) availability of personal protective equipment (PPE), personal safety, vaccine availability, caregiving responsibilities at home, and prioritizing the well-being of family members (e.g., Damery et al., 2009; Ives et al., 2009; Martin, 2011; Tippett et al., 2010). Psychological distress also occurs as a result of mitigation strategies (e.g., social distancing, home containment, and travel

restrictions) aimed to prevent the spread of the disease. For example, in a study of health care workers in a treatment facility during the SARS outbreak, Maunder et al. (2003) reported incidents of professional isolation arising from the use of protective masks and observance of non-physical contact with coworkers reduced morale among health care workers, and refusal to work among administrative and professional staff. Bai et al. (2004) investigated reactions of health care workers and professional staff shortly after 57 health care workers was quarantined due to the SARS epidemic.

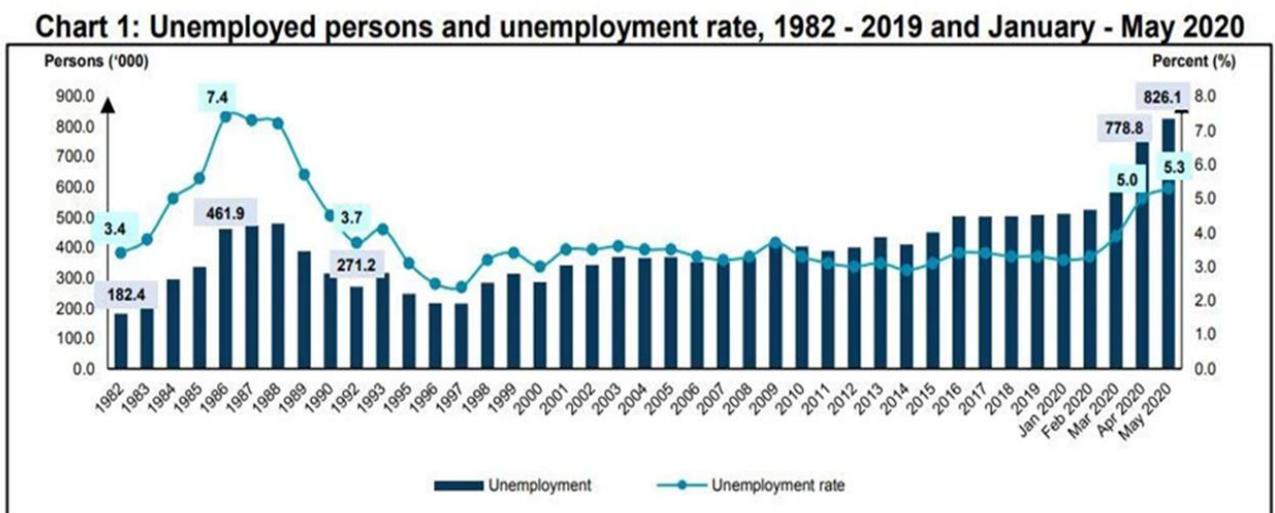
Results revealed that 20% of the participants reported feeling stigmatized, ostracized and rejected in their neighborhoods due to their hospital work while 9% expressed reluctance to return to work or had thoughts of quitting their job. Beyond those in the health care sector, in response to disease outbreaks, individuals in many organizations and industries have to endure harsh workplace conditions such as limited availability of social and work support, increased work demands, irregular work hours, inadequate work benefits, and poor access to healthcare (Blake, Blendon, & Viswanath, 2010; Blendon et al., 2008, International Labor Organization, 2020).

2.2. The Challenges of Facing an Uncertain Labor Market and Work Environment

The economic downturn associated with the COVID-19 pandemic has and will likely continue to result in layoffs, downsizing, and involuntary unemployment that threaten the job security of workers across different career stages and across different business sectors, such as hospitality and food services, manufacturing, retail, travel and trade (International Labor Organization, 2020; Morath, Torry, & Guilford, 2020). The labor market conditions resulting from COVID-19 may also substantially alter career trajectories and impede job search strategies among individuals entering the workforce. Those in school-to-work transition contexts as well as

younger workers face scarce employment and apprenticeship prospects that not only disrupt formal entry to the labor market but also delay the acquisition of career competencies (Berkman, 2008; Blake et al., 2010; International Labor Organization, 2020).

In addition, findings from national surveys involving US workers before and after previous economic downturns show that those who remain employed may experience significant pay cuts, reduction in work hours, and prolonged furloughs while also facing increased work demand and challenging working conditions (Frone, 2018). Aside from these career and financial impacts, the widespread labor market uncertainty is also associated with many deleterious psychological outcomes (Cauchemez et al., 2009), including increased anxiety and fear about one's future career options and opportunities. Decades of research has demonstrated that involuntary unemployment is associated with poor psychological and physical health (Paul & Moser, 2009; Wanberg, 2012). Similarly, employed workers may also experience increased anxiety because of the uncertainty they face about the future of their jobs (Rothstein & Talbott, 2007; Shoss, 2017).





2.3. The Challenges of Managing Family and Work Responsibilities

Since the COVID-19 outbreak and the resulting need for social distancing, many organizations have imposed remote work policies that require individuals to work at home (Adalja, Toner, & Inglesby, 2020), gradually blurring the lines between family and work roles (Capitano & Greenhaus, 2018). Simultaneously, the closure of childcare and school facilities force many working parents to abruptly take on full-time child-caring responsibilities and home-school instruction while also adjusting to their new work-from-home arrangements. The impact of these changes cannot be underestimated, as maintaining family and work boundaries may become more challenging than ever as people now must undertake multiple role transitions (Ashforth, Kreiner, & Fugate, 2000). Although permeable family and work boundaries may be beneficial (Kossek & Lautsch, 2012; Olson-Buchanan & Boswell, 2006), enacting segmented roles that compete for primacy (e.g., as a parent and as an employee) may lead to inter-role conflict, family-work interference, and emotional strain (Allen, Cho, & Meier, 2014; Kossek, Ruderman, Braddy, & Hannum, 2012). The current lockdowns being imposed by government around the world further exacerbate these challenges as individuals have narrow opportunities

to replenish cognitive and emotional resources depleted from fulfilling family and work demands. The need to balance challenging work and family demands not only may cause individuals to underperform in both the work and family domains but can also result in increased emotional exhaustion, stress and burnout (Sonnentag, Kuttler, & Fritz, 2010).

2.4. Country Overview: Malaysia

Malaysia is a country in Southeast Asia. The federal constitutional monarchy consists of thirteen states and three federal territories, separated by the South China Sea into two regions, Peninsular Malaysia and Borneo's East Malaysia. Peninsular Malaysia shares a land and maritime border with Thailand and maritime borders with Singapore, Vietnam, and Indonesia. East Malaysia shares land and maritime borders with Brunei and Indonesia and a maritime border with the Philippines and Vietnam. Kuala Lumpur is the national capital and largest city while Putrajaya is the seat of the federal government. With a population of over 32 million, Malaysia is the world's 43rd-most populous country. The southernmost point of continental Eurasia is in Tanjung Piai. In the tropics, Malaysia is one of 17 megadiverse countries, home to a number of endemic species.

2.4.1. Political History and Structures

Malaysia has its origins in the Malay kingdoms which, from the 18th century, became subject to the British Empire, along with the British Straits Settlements protectorate. Peninsular Malaysia was unified as the Malayan Union in 1946. Malaya was restructured as the Federation of Malaya in 1948 and achieved independence on 31 August 1957. Malaya united with North Borneo, Sarawak, and Singapore on 16 September 1963 to become Malaysia. In 1965, Singapore was expelled from the federation.

Malaysia is multi-ethnic and multi-cultural, which has a significant effect on its politics. About half the population is ethnically Malay, with large minorities of Chinese, Indians, and indigenous peoples. The country's official language is Malaysian, a standard form of the Malay language. English remains an active second language. While recognising Islam as the country's established religion, the constitution grants freedom of religion to non-Muslims. The government is closely modelled on the Westminster parliamentary system and the legal system is based on common law. The head of state is an elected monarch, known as the Yang di-Pertuan Agong, chosen from among the nine state sultans every five years. The head of government is the Prime Minister.

2.4.2. Economy of Malaysia

After independence, the Malaysian GDP grew at an average of 6.5% per annum for almost 50 years. The economy has traditionally been fuelled by its natural resources but is expanding in the sectors of science, tourism, commerce and medical tourism. Malaysia has a newly industrialised market economy, ranked third-largest in Southeast Asia and 33rd-largest in the world.

2.5. Economy During Covid-19

It is estimated that Malaysia financial loss is approximately at RM2.4 billion/day, which is 35 billion/month during the movement control order (MCO) period. Almost 50 percent of self-employed Malaysians have lost their jobs due MCO, while 28 percent of employers experienced more than 90 percent drop in their income. Among the sectors that are badly hit are manufacturing and tourism, including air travel industries. Employers are struggling to cut costs to retain their employees and might face threat of legal action for non-fulfilment of legal

obligations. Also, measures to further support the needs of businesses during and post-COVID also needed. Workers are facing serious threats during MCO that include forced leave, no-pay leaves, salary deductions and union busting.

The main sources of economic damage in Malaysia are twofold: the first is the knock-on effect from the impacts of the coronavirus abroad, the second is generated domestically due to the newly-imposed movement control measures.

First, long before the partial lockdown measures in Malaysia, the outbreak of the new coronavirus in China had created wide-ranging supply and demand shocks that have reverberated across the globe. Commodity exporters around the world braved lower prices as Chinese demand collapsed, while global manufacturers faced production cuts as Chinese factories are locked down.

In Malaysia, the effects of these China shocks may be dire. The Malaysian economy is amongst the most highly exposed economies in the region to both Chinese demand and supply. China is Malaysia's number one trading partner, a large source of foreign investments, and its top tourist source outside of ASEAN.

Additionally, over the past decade, Malaysian firms have become amongst the most deeply integrated in the global production networks. This is compounded by the fact that regional supply chains have become increasingly China-centric. Indeed, more than a quarter of Malaysia-China trade (about US\$20 billion in 2018) is made up of intermediate components—exactly the kind of products that gets affected the most when global supply chains are disrupted.

Second, the MCO measures, while absolutely essential in impeding the outbreak of the new coronavirus in Malaysia, will have devastating economic costs too.

On a macro level, the closure of businesses and services, along with the travel and movement controls will have outsized impacts on private consumption and business investment.

Its adverse effects on individual livelihoods and businesses will be even more pernicious. Individuals and businesses affected by the temporary closures will be at high risk of facing immediate cash flow constraints as their earnings dwindle.

Critically, this liquidity squeeze will be disproportionately felt by small-and-medium enterprises (SMEs), and vulnerable groups such as lower-income individuals, and part-time and unemployed workers. This can have knock-on effects on the entire economy—leaving businesses insolvent, individuals bankrupt, and the financial system saddled with non-performing loans.

2.6. Role of Government in Responding the Pandemic

Unlike the global financial crisis in 2008, and the Asian financial crisis in 1997, Malaysia's COVID-19 crisis is a public health crisis first, and an economic crisis second. Following this, economists generally agree that economic policy should focus mainly on bolstering public health efforts in handling the pandemic whilst ensuring the welfare of the rakyat and businesses.

The RM20 billion stimulus package announced in February is a good start and already contains many of the measures proposed here, but in light of the recent developments and the severity of the crisis, there is a sense that the package can be much larger. Indeed, when the February stimulus package was announced, there were 23 confirmed cases of COVID19. At time of writing, there are now 1,792 confirmed cases—a 78-fold increase.

For comparison, the stimulus packages unveiled during the Global Financial Crisis in 2008-2009 amounted to RM67 billion (or 8.4 per cent of GDP)—more than three times larger than the planned RM20 billion (only about 1.4 per cent of GDP). As such, many analysts note

that there is an urgent need for a second add-on package, especially if movement controls are extended, to strengthen and broaden many of the initiatives in the February stimulus package.

Broadly, Malaysia's economic policy response to the coronavirus pandemic should comprise **two** separate stages. Stage one measures should be implemented when quarantine/partial lockdown measures are imposed to safeguard the income and liquidity of affected businesses and individuals. Stage two measures should comprise a hefty fiscal stimulus component and should be implemented as soon as the outbreak shows signs of subsiding and movement controls are lifted.

2.6.1 Stage One Measures: Safeguarding Employment and Livelihoods

Stage one measures should primarily involve supporting the welfare of the rakyat through income and liquidity support. As economists Steven Hamilton and Stan Veuger [note](#), this would enable individuals and businesses to temporarily suspend work without adverse impacts on their ability to remain solvent. As much as possible, the goal should be to allow them to be able to pick up where they left off after the pandemic subsides.

For individuals, stage one measures should primarily aim to cushion the impact of the outbreak on the livelihoods of the rakyat—particularly vulnerable groups such as the lower-income and the unemployed, and part-time/gig economy workers.

On this, there is a need for an expansion and temporary extension of unemployment insurance, especially the Job Search Allowance (JSA) component under PERKESO's EIS mechanism. Under this expansion plan, individuals currently receiving EIS benefits should receive a temporary freeze in their maximum six-month period benefit eligibility period for as long as the movement control measures are in place.

Additionally, the JSA benefit amount should be supplemented by a temporary special provision to increase the amount transferred, increasing the income replacement rates for unemployed recipients. This would enable the unemployed to weather cash flow shocks for longer whilst remaining ready to resume job search after the outbreak subsides. Lastly, broadening existing coverage of the EIS would also be hugely beneficial. PERKESO's SIP plus 600 initiative, which relaxes eligibility conditions for the receipt of temporary benefits, is a commendable attempt at this.

In normal times, the EIS is primarily funded by a tax on workers' paychecks, but in times of crisis, this proposed temporary extension and expansion of EIS benefits would need to be briefly funded by the federal government for as long as the pandemic remains a national crisis—akin to economist Arindrajit Dube's plan in the US. A major obstacle to this expansion proposal may be a need to amend or circumvent the Employment Insurance System Act 2017.

For workers forced to take unpaid leave, PERKESO's newly announced Employment Retention Program (ERP) is a great start. Nonetheless, as Christopher Choong from Khazanah Research Institute (KRI) has noted, the current ERP amount of RM600 is broadly insufficient, constituting only about 26 per cent of the median wage (using 2018 data). Instead, incentivising employers to keep paying workers via conditional credit lines for large firms or via matching wage assistance policies are needed.

Outside of the labour force, direct cash flow support via BSH should be increased to reach low-income households who may not be formally employed or are unable to work. Similarly to the ERP, current plans under the fiscal stimulus package to increase annual BSH payments by only RM150 per household will be inadequate, representing only about a 10 per cent increase compared to the normal BSH annual benefits. Here, a one-off increase in the BSH transfer amount for the poorest households would enable communities to purchase necessities during the movement controls.

For businesses, the primary aim of stage one measures should be to reduce the number of business deaths from the outbreak. UC Berkeley Professor Pierre-Olivier Gourinchas makes the point in a recent article that the permanent closure of a business destroys jobs and creates negative spillover effects on other businesses along the supply chain.

On this, affected businesses will need cash flow support to allow them to remain solvent during periods of reduced demand and allow them sufficient liquidity to continue paying their workers. This will need to include measures similar to the recently announced Bank Negara Malaysia Special Relief Facility, but with higher amount, lower interest rate, and a longer repayment tenure—particularly to SMEs who are most susceptible to cash flow pressures. Large firms heavily affected by the outbreak may require access to emergency credit lines, which can be made conditional on the fact that the firm retains its payroll full-time throughout the crisis period.

Additionally, this can be coupled with cost-relieving measures for businesses like deferment on tax and utilities payments. Some of these measures to support businesses are already included in the planned fiscal stimulus package—but to be more effective, they need to be extended to sectors outside of tourism.

2.6.2 Stage Two Measures: Supercharging Economic Activity

Subsequently, once the pandemic has passed its peak and movement controls are lifted, stage two measures need to kick in immediately. Stage two measures can complement stage one measures by adding in an expansionary component with the primary aim of helping the businesses and individuals bounce back. Economic policy should now shift gears to focus on boosting the economy via proactive fiscal stimulus.

Stage two measures should encompass an expansion of the main proposals contained in the government's earlier RM20 billion planned fiscal stimulus package, including measures to increase infrastructure spending and broaden personal tax relief. In general, past experience suggests that successful fiscal stimulus should consist of a multi-pronged approach in one single package, from the immediate-term to the longer-term.

For the immediate-term, a simple one-time cash injection to every Malaysian, structured as a fully-refundable lump-sum tax rebate would put money in the hands of the rakyat almost immediately, rapidly kickstarting aggregate demand. Research suggests that such cash injections work much quicker in getting money into the real economy compared to things like corporate tax cuts.

For the medium-and-longer-term, periods of crises present good opportunities to increase productivity-improving expenditure and invest in deepening social safety nets. Increasing infrastructure spending, especially in lagging regions as proposed in the February stimulus package can have long-term effects on productivity and economic growth. Similarly, continuing to deepen social safety net and strengthen automatic stabilizers like the EIS will both incentivise human capital accumulation and ensure both the Malaysian economy and Malaysian workers are better prepared for future crises.

2.7. Chapter Summary

Government budget deficit targets will need to be overshoot. Difficult decisions will need to be made later on how to boost tax revenues progressive income and wealth taxes these costs need not be borne by the middle or lower classes.

Additionally, intense amounts of political determination will be required. As mentioned above, some policy responses may require the circumvention or amendment of certain laws via a special or emergency parliamentary session (see: restrictions on government borrowing to fund operational expenditures, and restrictions via the Employment Insurance System Act). Lastly, there will be huge financial pressures on the banking sector, demanding action from our monetary policymakers.

Besides, even with comprehensive and valiant efforts at cushioning the blow to the rakyat and businesses, some amount of job losses and business closures will be unavoidable. Yet, the economic, social and political cost of inaction—or even insufficient action—is far greater and far more frightening. Surely, this is no time to be timid. In light of the emerging risks, it is clear that the fiscal policy needs to go further beyond the February stimulus package in safeguarding the livelihoods of the rakyat.

After all, the current COVID-19 crisis will eventually be conquered through vigorous public health efforts, but without a sufficiently large and forceful fiscal response, the economic scars it leaves behind will be viciously long-lasting.

CHAPTER 3

LITERATURE REVIEW AND THEORETICAL FRAMEWORK

3.1. Introduction

In this research I have two mental health outcomes: psychological distress and major depression that can result from a pandemic or an epidemic outbreak (Chiu *et al.*, 2020; Lai *et al.*, 2020; Perlis, 2020; Wu *et al.*, 2005; Xiang *et al.*, 2020). Psychological distress is largely used as an indicator of mental health (Drapeau *et al.*, 2011). It refers to a state of individual's emotional suffering, accompanied by symptoms of depression (e.g. sadness and loss of interest) and anxiety (e.g. restlessness) (Drapeau *et al.*, 2011; Mirowsky & Ross, 2003; Payton, 2009) and somatic symptoms like insomnia (Drapeau *et al.*, 2011; Marchand, 2004). Psychological distress is related to a set of psychophysiological and behavioural symptoms that are distributed over a continuum of time (Marchand, 2004). While depression is psychiatric mood disorder, characterized by persistent reduced mood and interest (Bonde, 2008), persistent feelings of sadness, negative emotions and difficulty to cope with everyday responsibilities (Cummins *et al.*, 2015). If not identified psychological distress may lead to major depression (Marchand, 2004). While depression may lead to severe consequences like suicide (Beck & Alford, 2009; Cummins *et al.*, 2015).

Psychological distress and depression are the results of an intense or a continuous stress which has not been managed, mainly due to the individual's difficulty to cope with stressful life events (Cummins *et al.*, 2015; Drapeau *et al.*, 2011; Marchand, 2004). The current pandemic is a source of intense stress for the whole world population.

The COVID-19 pandemic can be related to many stressors that may drain employees' mental health, during and after this pandemic. In this section, we have made the distinction

between the stressors during the coronavirus pandemic and those that can evolve after this pandemic. The distress that an individual feels is not the problem. It is rather the consequence of the problem (Mirowsky & Ross, 2003). Therefore, it is important to understand the problem in order to be able to identify solutions which will help employees and organizations to reduce the risk of mental health issues. This is the main objective of this article.

3.2. Conceptualization

3.2.1 Stressors during the Coronavirus Pandemic

The main stressors during a pandemic are the 1) perception of safety, threat and risk of contagion (Brooks *et al.*, 2020; Xiang *et al.*, 2020) ; 2) Infobesity and the Unknown (Gao *et al.*, 2020; Garfin *et al.*, 2020) 3) quarantine and confinement (Brooks *et al.*, 2020; Qiu *et al.*, 2020; Wang *et al.*, 2020), 4) stigma and social exclusion (Brooks *et al.*, 2020; Xiang *et al.*, 2020) and 5) financial loss and job insecurity (Brooks *et al.*, 2020; Zhou *et al.*, 2020).

3.2.1.1 Perception of Safety, Threat and Risk of Contagion

During pandemic, fear and panic set in. In fact, individuals' anxiety may increase following the first death and an increased media reporting related to the number of new cases (Rubin & Wessel, 2020). In this case, individuals are afraid about their own health and the health of the members of their family (Bai *et al.*, 2004; Brooks *et al.*, 2020; Xiang *et al.*, 2020). The outbreak of COVID-19 itself and the control measures taken may lead to widespread fear and panic (Zhang *et al.*, 2020a). Fear behaviours can propel the virus transmission and spread in pandemic areas (Chan, 2014; Shultz *et al.*, 2015). For example, during Ebola, there were some cases of fearful symptomatic patients' escape from treatment centres, concealing sick

relatives at home (Chan, 2014; Shultz *et al.*, 2015). Feeling unsafe and vulnerable to pandemics are, according to some authors, predictors of poor mental health (Brooks *et al.*, 2018).

3.2.1.2 Infobesity versus the Unknown

During pandemic outbreak, individuals face an infobesity or an information overload. They become overwhelmed by the known lethality of the infection as well as the intensity of media coverage of this pandemic outbreak, which exacerbates their perception of danger (Bai *et al.*, 2004; Garfin *et al.*, 2020; Shigemura *et al.*, 2020), increases their anxiety (Shigemura *et al.*, 2020) and undermines their mental health. In this case, misinformation spreads faster than COVID-19.

Social media is one of the main channels providing updated information regarding COVID-19 (Bao *et al.*, 2020; Gao *et al.*, 2020). Although it could play an important role in facilitating the communication of individuals who are quarantined with their relatives who are far away (Brooks *et al.*, 2020), social media is not always a trusted source of information for updates about the pandemic (Gao *et al.*, 2020). In fact, it may spread rumours or false information leading to misinformation overload (Bontcheva *et al.*, 2013; Roth & Brönnimann, 2013), which stokes unfounded fears among many individuals. The study of Gao *et al.* (2020) showed that there was a high prevalence of mental health problems (depression and anxiety or a combination of both) which was positively associated with frequent social media exposure during the COVID-19 outbreak in Wuhan, China.

Furthermore, news coverage of a pandemic outbreak may contain an amount of conflicting information which can shake an individual's trust (McCauley *et al.*, 2013), creates confusion, uncertainty and increases the level of stress felt by the individual and his incapacity to cope with the intensity of the current situation. Moreover, the lack of clear information about

the different levels of risks may lead individuals to imagine the worst, which exacerbates their anxiety (Desclaux *et al.*, 2017). In fact, insufficient clear information about the pandemic and clear explanation about the necessity of quarantine have been identified as important sources of stress for individuals during the pandemic (Brooks *et al.*, 2020).

3.2.1.3 Quarantine and Confinement

Quarantine refers to separating individuals (or communities) who have potentially been exposed to an infectious disease from the rest of the community (Hawryluck *et al.*, 2004; Parmet & Sinha, 2020). It also refers to the reduction of movement of individuals who have potentially been exposed to an infectious disease (Brooks *et al.*, 2020). COVID-19 is an infectious disease, as it spreads around the world, governments like China, Italy and many other countries have adopted draconian measures, such as imposing quarantines and travel bans, on an unexpected and unprecedented scale (Parmet & Sinha, 2020; MacIntyre, 2020). Although quarantines are generally established for the public good, they may result in a heavy psychological, emotional and financial burden for individuals (Hawryluck *et al.*, 2004). In fact, individuals quarantined might experience boredom, anger and loneliness (Xiang *et al.*, 2020). Some studies pointed out that quarantine during a pandemic, like COVID-19, is associated with poorer mental health (Brooks *et al.*, 2020, Rubin & Wessely, 2020), with high prevalence of symptoms of psychological distress and disorder (Wang *et al.*, 2020). This association can be worse due to the duration of the quarantine (Brooks *et al.*, 2020). Furthermore, the study of Bai *et al.* (2004) on health care workers showed that quarantined employees were significantly more likely to report exhaustion, anxiety when dealing with febrile patients, insomnia, irritability, low levels of work performance and poor concentration. Brooks *et al.* (2020) suggested that there can be long-term negative psychological outcomes of quarantine experiences; not only for the

individuals quarantined, but also for the health care system administrating the quarantine, as well as the politicians and public health officials mandating it.

3.2.1.4 Stigma and Social Exclusion

Stigma is one of the common social consequences of a pandemic (Xiang *et al.*, 2020). Being afraid of the risk of a potentially lethal contagious disease, people develop a form of stereotyping toward individuals associated with the epicentre of the disease, by avoiding them, blaming new disease outbreaks on them (Desclaux *et al.*, 2017; Kinsman, 2012; Koh, 2020; McCauley *et al.*, 2013; Shigemura *et al.*, 2020; Shultz *et al.*, 2015; Xiang *et al.*, 2020) and spreading misleading rumours about them on social media (Depoux *et al.*, 2020). Furthermore, stigma and social exclusion can be directed towards confirmed patients, survivors and their relations (Zhang *et al.*, 2020a), and individuals who have been quarantined or who have been in contact with those who have been quarantined (Bai *et al.*, 2004; Brooks *et al.*, 2020). Rejection, isolation, and discrimination are associated with poor psychological outcomes (Brooks *et al.*, 2018).

Health workers are not spared from this stigma. In fact, they can even feel more stigmatization than the general public (Brooks *et al.*, 2018). The study of Bai *et al.* (2004) showed that health care workers were more likely to feel stigmatized and rejected in their neighbourhood because of their work at the hospital. This stigmatization may lead to a high level of psychological distress and depression (Kinsman, 2012; Zhang *et al.*, 2020a). They may suffer from it in extreme ways, for example during the Ebola outbreak there were cases neighbours throw stones at healthcare workers and chase them from their houses (Guimard *et al.*, 1999). According to some authors, providing accurate and timely information about the disease may minimize stigmatization of health care workers (Bai *et al.*, 2004).

3.1.5. Financial Loss and Job Insecurity

Pandemics lead to business disruption. The outbreak of a pandemic causes the closure of schools and workplaces (Ferguson *et al.*, 2006), as well as the shortening of working hours (Tyko, 2020) as measures to mitigate the severity and spread of the disease. As businesses cannot operate at their previous capacity, most of them close, which will lead to a wide spread of staff lay-offs and redundancies that will substantially decrease the level of employment (Page *et al.*, 2006). This situation will have a negative impact on the individuals' financial capacity due to the loss of income (Zhou *et al.*, 2020). Financial loss can also be an issue for individuals who are quarantined, since they are not able to work or to maintain their professional activities, often without the prior ability to plan for this eventuality long-term, with potential long-lasting effects (Brooks *et al.*, 2020). The study of Zhang *et al.* (2020b) showed that individuals who stopped working due to Covid-19 outbreak reported worse health and distress. Likewise, the study of Mihashi *et al.* (2009) showed, in the case of SARS infection, that income reduction highly predicts psychological disorder with odds of 25.0. In addition, some authors identify inadequate insurance and compensation as one of the risk factors for poor mental health (Tam *et al.*, 2004).

Furthermore, the impact of the pandemic outbreak on businesses would significantly increase an individual's feeling of job insecurity, which can have a negative impact on the mental health of employees who are affected by the organizational reforms of closure and reduction of working hours during COVID-19. The negative effect of job insecurity has been widely documented in literature on mental health in the workplace (Strazdins *et al.*, 2004; Virtanen *et al.*, 2002).

3.3. Stressors Post Coronavirus

Studies suggest that some stressors that have evolved during pandemic outbreaks have long-lasting effects (Brooks *et al.*, 2020). Which means that they remain even after the disappearance of this pandemic. At the time of writing this paper, COVID-19 is still present. Thus, it is not possible to accurately identify its effects on individuals' mental health after its disappearance. However, if we build on recent literature related to COVID-19, literature related to previous pandemics and epidemics such as SARS, some predictions can be made concerning the potential stressors post COVID-19 which may have a negative impact on employees' mental health. In this case, besides posttraumatic stress disorder related to the recovery from a life threatening physical illness (Wu *et al.*, 2005), it seems that stigma, financial loss and job insecurity may have a long-lasting effect after COVID-19.

It appears, according to the study of Siu (2008), that stigma persists in the post SARS era. The author argued that SARS victims were still experiencing stigmatization up to four years after the SARS outbreak, which maintained their social isolation, increased their level of stress and worsened their mental health. The participants of this study have reported that they have encountered stigmatization and isolation in their workplace after SARS, from their colleagues and even from their employers.

Furthermore, financial loss and job insecurity may be considered as long-lasting stressors related to COVID-19. In fact, COVID-19 has led to business disruption of some companies that will need time to recover from the financial consequences of this pandemic. This may create a spillover effect on the employment market with a potential long-lasting negative impact on employees' finances which may lead to a negative impact on their mental health. Indeed, it appears that those disasters that result in major financial issues for individuals are associated with high levels of severe and persistent psychological effects (Norris *et al.*, 2002).

These lead to the following hypothesis:

H1: The greater the degree of stressors, the more it impact on employees' mental health

3.4. Moderators: What Are the Mitigating or Aggravating Factors of COVID-19's Effects on Employees' Mental Health

Three main dimensions of moderating factors that may mitigate or aggravate COVID's impact on employees' mental health are examined in this paper: organizational factors, institutional factors and individual factors.

3.4.1 Organizational Factors

Organizational factors are related to occupational role, occupational safety and health management as well as teleworking.

3.4.1.1 Occupational Role

The exposure to the pandemic vary based on the working environment and the employee's occupational role (Bai *et al.*, 2004; Brooks *et al.*, 2018). Therefore, its impact on employees' mental health is supposed to vary as well. In this context, besides their work overload (Mauder, 2004), health care employees have a very high exposure to the virus since they are in constant contact with the general public, which makes their occupation high risk in terms of mental health, especially during a pandemic (Bai *et al.*, 2004; Chen *et al.*, 2005; Huang & Zhao, 2020; Huang *et al.*, 2020; Ho *et al.*, 2020; Koh, 2020; Mauder *et al.*, 2006; Mauder, 2004; Wu *et al.*, 2009; Xiang *et al.*, 2020; Zhu *et al.*, 2020). During the COVID-19 in China, the

vice minister at the National Health Commission announced on February 14, 2020, that six health workers have died from the new coronavirus and more than 1,700 have been infected (CNA, 2020). Maunder (2004) pointed out that being a nurse, having contact with SARS and having children is associated with a high level of psychological distress.

3.4.1.2. Occupational Safety and Health Management

Employers have the responsibility to protect their employees and to ensure a workplace free from hazards that may physically harm them or cause their death. The current situation caused by COVID-19 is challenging for organizations all over the world. In this context, managers should work closely with human resource practitioners and health institutions in order to develop a safety and health plan which will prevent the risk of contagion and coronavirus spread within the organization. Organization's policies play an important role in this context in minimizing the spread of the virus. For this purpose, they need to follow the guidelines of health officials, of their country's government and of the World Health Organization (Benson & Dix, 2009). They need to educate and train their employees about prevention behaviours and to provide the required protection material for those who need to be present in the workplace (e.g. Masks, Sanitizers, social distancing...). They also need to post prevention guidelines (e.g. wash hands, avoid touching eyes, nose and mouth) (Ramesh *et al.*, 2020), and to allow telework if possible (Benson & Dix, 2009). Having clear preventive measures in the workplace will build trust which will help to reduce employees' level of stress. They will feel protected and supported by their employer (Brooks *et al.*, 2018).

3.4.1.3 Teleworking

In order to control the risk of COVID-19's spread, many employees in different countries were required to stay at home away from their workplace, triggering teleworking practices.

Teleworking is the best solution to maintain the company's operations while ensuring the health and safety of employees during a pandemic, and to secure an income for the quarantined employees (Greer & Payne, 2014). However, it can lead to a negative impact on employees' mental health, mainly because it increases social isolation (Gajendran & Harrison, 2007; Henke *et al.*, 2016; Tavares, 2017), which is associated with a high risk of psychological distress and depression. In fact, being away from his workplace and colleagues, an employee can feel isolated. Furthermore, teleworking can cause employees to work more hours because the boundaries between private and professional life are not clear (Gajendran & Harrison, 2007; Henke *et al.*, 2016; Tavares, 2017). In addition, the level of stress may increase with the presence of children at home since schools are closed.

3.4.2. Institutional Factors

In this paper institutional factors refer to the governmental programs that aim to support employees financially and psychologically during and after the pandemic.

Governmental programs, mainly financial security programs, help to reduce the incidence of psychological disorder during pandemics (Mihashi *et al.*, 2009). They are important factors to take into consideration in future strategies for mass isolation during pandemics (Mihashi *et al.*, 2009). For example, countries that have a high level of COVID-19 infection such as France, Spain and the UK have implemented emergency packages that include direct payouts to employees; loans and guarantees for companies to mitigate the economic impact of

the pandemic (Mallet & Dombey, 2020), which will help individuals to maintain an income during the pandemic.

Furthermore, the presence of an effective mental health system can mitigate the consequences of COVID-19 on individuals' mental health (Qiu *et al.*, 2020; Zhang *et al.*, 2020a; Zhou *et al.*, 2020). Shultz *et al.* (2015) argue that the absence of mental health and psychosocial support systems, paired with an absence of well-trained mental health professionals, have increased the risks of psychological distress during Ebola. Prioritization of investment like the Pandemic Emergency Financing Facility launched by the World Bank Group aids the development of sustainable health systems (Bitanihirwe, 2016). In fact, during and immediately after the pandemic outbreak, psychosocial support is crucial for quarantined people and health workers (Zhang *et al.*, 2020a). During the COVID-19 outbreak in China mental health services have been provided using various channels like hotlines, online consultations, online courses (Gao *et al.*, 2020; Liu *et al.*, 2020) and telemental health services (Zhou *et al.*, 2020).

According to Xiang *et al.* (2020), mental health care for patients and health workers affected by COVID-19 has been under-addressed. The authors argued that although emergency psychological crisis interventions based on the SARS outbreak has been launched on January 26, 2020, in China, to provide psychological support during COVID-19, most health professionals working in isolation units and hospitals have not received training in how to provide mental health care. Xiang *et al.* (2020) suggest an urgent development of timely mental health care, based on the creation of multidisciplinary mental health teams established by health officials; provide a clear communication with a regular update about COVID-19 and the set-up of secure services to offer psychological counselling using electronic devices and applications (e.g. Smartphones and WeChat); and regular screening for depression, anxiety and suicidal tendencies should be performed for COVID-19 patients as well as health workers. In this context, public health officials should develop a nationwide strategic planning for psychological

first aid through telemedicine (Qiu *et al.*, 2020) and provide effectively clear messages that will help individuals to have an accurate understanding of the situation (Brooks *et al.*, 2020) .

3.4.3 Individual Factors

In this paper, individual factors encompass sociodemographic factors (gender, age and education), the history of the individual's mental illness, and the perception of physical health vulnerability.

There are no specific studies which investigate this moderating role of these factors in the relationship between COVID-19 outbreak and employees' mental health. However, it is possible to make some predictions based on workplace mental health's literature. In fact, research has shown that women are more prone to depression than men (Bonde, 2008; Read & Gorman, 2011) and they have greater psychological vulnerability to stress, which suggest that they may react more intensely to stress compared to men, in the case of a pandemic (Brug *et al.*, 2004; Zhu *et al.*, 2020). In addition, the study of Braunack-Mayer *et al.* (2013) showed that pregnant women, and those with young children, are more concerned about becoming infected or transmitting the virus to others; which may suggest that they might be more stressed than men and other women who are not in the same situation. Conversely, one study showed that being a male was a predictive factor for the onset of psychological disorders during SARS (Mihashi *et al.*, 2009). Furthermore, it appears that older adults are more likely to be at high risk of mental health issues, mainly because of the high rate of mortality among them during COVID-19 (Yang *et al.*, 2020), which make them vulnerable physically and psychologically. Generally, they are lonely with little social support (no children or their children have left home) (Yang *et al.*, 2020), and they have limited access to the online mental health services due to the lack of technological skills, which might significantly undermine their mental health (Yang *et al.*, 2020).

Moreover, education is supposed to have a buffer effect because more educated people have better cognitive skills which may help them to cope with the consequence of any disability (Brug *et al.*, 2004; Drapeau *et al.*, 2011; Mihashi *et al.*, 2009) In addition, a history of mental illness is a risk factor during pandemics (Brooks *et al.*, 2020). An individual's perception of their physical health, if poor, is also associated with higher stress and psychological morbidity (Tam *et al.*, 2004) It is also the case if they have a history of chronic illnesses (Wang *et al.*, 2020).

Based on the theoretical and empirical support, the following hypothesis is proposed:

H2: Working experience moderates the potency of stressors to employees' mental health

H2a: Senior employees will be more affected by the stressors than Junior employees

H3: Education level moderates the potency of stressors to employees' mental health

H4: Current Body Health Status moderates the potency of stressors to employees' mental health

3.5. Chapter Summary

The novelty of the COVID-19 and its potential negative impact on employees' mental health urge this type of review. The main goal of this paper is to provide the necessary information to prevent or mitigate the negative impact of COVID-19 on employees' mental health. We consider that the quality of the literature reviewed in this paper helps to achieve this goal.

The contribution of the literature review should be, however, considered in light of certain limitations. First, the potential for the selection of the articles to be subjective. However, the databases used (Google scholar, web of science and semantic scholar) provide the most cited

articles. Furthermore, the informative character of this paper and its main objective to provide useful information for employees and organizations do not require a systematic review of the literature. Therefore, this article is contributing with a well-condensed and a well-structured paper based on information obtained from a large literature review of the impact of COVID-19 or other pandemics on employees' mental health. This literature review can be useful for the development of a conceptual model that can be tested empirically in future research to determine the association between the identified stressors and employee's mental health during or post COVID-19 outbreak. Second, the studies related to COVID-19 were conducted while the pandemic is still going, which does not help to identify the real stressors post COVID-19 and to confirm the presence of a causal relationship. Future research needs to be performed in this case to explore this relationship. Moreover, future research may explore other stress factors or moderating factors that are not explored in this paper, like the history of the physical health of the individual, marital status, organization size. Finally, most of the articles highlight the vulnerability of health care workers' mental health during and after the pandemic. Future research may explore specifically the impact of COVID-19 on health workers mental health. It may cover, in this case, other mental health outcomes like burnout.

Relevant literature and previously proposed models of Covid-19's stressors are reviewed to introduce a conceptual framework of this study. The requirement for stressors measure and constructs for operationalization are discussed. Each of the model components is discussed, with respect to the linkages between each construct along with moderator, and four hypotheses are proposed for testing. The study investigates the relationship between stressors, mental conditions and work experience. The next chapter discusses the research methodology that is used to conduct the research, in order to answer the research question.

CHAPTER 4

METHODS AND DATA

4.1. Introduction

This chapter covers the research methodology and data collection procedures employed to test the conceptual model proposed in Chapter 3. The chapter begins with survey design and defines the explanatory and dependent variables in the study. The procedures adopted for sample selection and data collection are also discussed. The test of common method bias is explained next, followed by a description of the analytical techniques used for testing the hypotheses and answering the research questions.

4.2 Research Design

A couple of factors should be considered when making a decision on whether to use qualitative or quantitative research. These factors include the researcher's own beliefs about the appropriate way to study human behaviour, the research questions, and the rigour of the research, which includes both the universality and verifiability of results. Other factors involve the degree of understanding of the problem provided by the method, the extent to which the results will generalise to other settings and persons, and the usefulness of the findings (Creswell, 1994; Maxwell, 1996; Patton, 1990).

This study adopted a quantitative research approach and the decision was guided by the purpose of the study, the nature of the research inquiry and the concepts to be investigated. The purpose of this study is to examine the possible relationship between stressors caused by

Covid-19 and employees' mental health, which is explanatory in nature. Therefore, the quantitative approach is well-suited to addressing this research objective, where the main concern is establishing a causal relationship between two or more variables (Mokhlis, 2006b). Moreover, the quantitative approach is more suitable in this study for hypotheses testing and generalisation.

Quantitative research is more suitable in mature research streams that emphasise testing rather than exploration. A quantitative research approach allowed this study to examine the complex relationships between stressors and degree of employees' mental health.

The quantitative research approach also provides the researcher with additional credibility in terms of interpretations and the confidence level of the findings. Statistical technique applications (such as bivariate and multivariate) have the advantage of allowing the researcher to measure and control variables (Edwards, 1998). These statistical techniques help to describe a relationship in a way that makes understanding easier (i.e. the modelling role) and to assess the strength and validity of any relationship defined (i.e. the testing role) (Cowan, 1990).

4.2.1. Survey Design

A questionnaire was developed comprising two sections: Demographic sections and Psychological conditions during MCO period. The questionnaire was designed in such a way as to uncover specific information on how the stressors and employees' personal status would affect their mental health. As individuals disclose more sensitive information under anonymous conditions (Hill, Dill, & Davenport, 1988; Klein & Cheuvront, 1990; Ong & Weiss, 2000; Werch, 1990), this study's questionnaire did not try to obtain any information that was traceable to the respondents, so they could be assured that the information they provided would be treated as

confidential at all times. The wording of the survey questionnaire was kept simple to ensure respondents' participation: it avoided jargon and included commonly used words to ensure a universal meaning and relevance for all participating in the study.

The respondents were asked to rate most of the questions in the questionnaire on a Likert scale. The literature suggests that the scales used most often are 3 to 7-point Likert scales. Past research on the number of response categories varies from a 3-point scale to a 25-point scale, but the general rule suggested is plus 7 or minus 2 categories. There is a reasonable level of reliability on all 3, 5, 7 and 9-point scale categories. A 5-point Likert scale is used in this study to measure the intensity of responses, where 1 meant "strongly disagree" and 5 meant "strongly agree".

4.2.2. Measuring the Variables

Impact of Events Scale

The IES is used to measure psychological response to traumatic stressors. It is a self-reported 17-item questionnaire. Scores 60 are high. The IES subscale shows high consistency. Test-re-test for the total score was $r=0.93$ over a 1-week interval. Correlations were fair to moderate, but statistically significant with measures such as the Mississippi scale (MS) and the Minnesota Multiphasic Personality Inventory Post-Traumatic Stress Disorder scale (Horowitz et al, 1979). The IES has 92.3% sensitivity and 64.2% specificity. In this study, an IES score ≥ 50 indicates the presence of posttraumatic stress symptoms (Neal et al, 1994). Questionnaire on changes in life priorities and ways of coping. This self-reported questionnaire, which had not gone through a reliability or validity check, was developed because there were none available to specifically measure changes in life priorities and coping. It has 17 items on a 5-point scale, ranging from strongly disagree to strongly agree. It consists of two subscales: one looking at the

changes in life priorities resulting from Covid-19 and the other finding out what coping methods are used to handle the emotional stress caused by Covid-19.

GAD-7 and PHQ-9

The Patient Health Questionnaire 9-item depression scale (PHQ-9) and 7-item Generalized Anxiety Disorder scale (GAD-7) are among the best validated and most commonly used depression and anxiety measures, respectively. They have been used in hundreds of research studies, incorporated into numerous clinical practice guidelines, and adopted by a variety of medical and mental health care practice settings. In our research we adopted GAD-7 and PHQ-9 to examine the conditions of mental health.

The PHQ-9 and GAD-7 are standardised measures used to monitor clinical outcomes as part of Efficacy's Clinical Governance strategy. These are increasingly used in robust mental health research to indicate a diagnosis, a classification of severity and outcome monitoring within national CBT therapy services.

The GAD-7 is a measurement for Anxiety Disorders and the PHQ-9 is a measurement for Depression. The PHQ-9 and GAD-7 are designed to facilitate the recognition for depressive disorders and anxiety disorders respectively. These are the national standard measures routinely used by GP's, therapists and psychiatrists as screening tools.

The scoring for both measures helps people to ascertain how severe the issue is. The general rule is that the higher the number, the more severe the case is.

Each PHQ module can be used alone (e.g. the PHQ-9 if depression is the condition of interest), together with other modules, or as part of the full PHQ. Also, alternative or abbreviated versions of the PHQ-9 and GAD-7 are sometimes used in certain screening or research settings [10-14] Although the PHQ was originally developed to detect five disorders, the depression, anxiety, and somatoform modules (in that order) have turned out to be the most popular.[10]

Also, most primary care patients with depressive or anxiety disorders present with somatic complaints and cooccurrence of somatic, anxiety, and depressive symptoms (the SAD triad) is exceptionally common.

The full PHQ, Brief PHQ, and PHQ for Adolescents (PHQ-A) can be used to establish provisional diagnoses for selected DSM-IV disorders. The other measures are principally used to derive severity scores (PHQ-9 and PHQ-8 for depressive symptom severity; GAD-7 for anxiety symptom severity; PHQ-15 for somatic symptom severity) or as ultra-brief screeners (PHQ-2, GAD-2, PHQ-4). Over time, the severity scores have been a particularly popular use of the measures, and are now used much more commonly than the provisional diagnoses. For example, cutpoints of 5, 10, and 15 represent mild, moderate, and severe levels of depressive, anxiety, and somatic symptoms, on the PHQ-9, GAD-7, and PHQ-15 respectively. Also, a cutpoint of 10 or greater is considered a —yellow flag on all 3 measures (i.e., drawing attention to a possible clinically significant condition), while a cutpoint of 15 is a —red flag on all 3 measures (i.e., targeting individuals in whom active treatment is probably warranted).

For the ultra-brief measures (PHQ-2 and GAD-2), a score of 3 or greater should prompt administration of the full PHQ-9 and/or GAD-7, as well as a clinical interview to determine whether a mental disorder is present. The final question on the PHQ (and some of its abbreviated versions) asks the participants to report —how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people? This single patient-rated difficulty item is not used in calculating any PHQ score or diagnosis but rather represents the patient's global impression of symptom-related impairment. It may be useful in decisions regarding initiation of or adjustments to treatment since it is strongly associated with both psychiatric symptom severity as well as multiple measures of impairment and health-related quality of life.

4.3. Data Collection Procedure

4.3.1. Sample Selection

As this study is interested in investigating stressors affecting employees' mental health context, Malaysia was chosen as the field for this research. Malaysia practices movement control since 18 March 2020, and have extended until 31 December 2020 during the time of this research.. The data for the study was collected from Kuala Lumpur, the main city of Malaysia so that the collected data represents the country.

It is important to decide the minimum sample size prior to data collection, in order to achieve the desired level of statistical power with a given model (Hoe, 2008; McQuitty, 2004). The sample size required depends on the normality of the data and estimation method that researchers use (Schreiber, Nora, Stage, Barlow, & King, 2006). It is generally agreed that sample sizes should be greater than 10 times the number of every free estimated parameter (Byrne, 2010). There is little agreement on the recommended sample size for SEM (Sivo, Fan, Witta, & Willse, 2006), but the proposed critical sample is 200 (Garver & Mentzer, 1999; Hoelter, 1983). As a rule of thumb, any number above 200 is understood to provide sufficient statistical power for data analysis (Hoe, 2008; Sharma & Singh, 2012).

The target participants are all working adults regardless of their age to prevent bias. They are categorized with their working experience to reflect how they will react to the stressors during pandemic. As the minimum sample size for SEM is more than 200, the study aimed to have at least 600 respondents.

4.3.2. Data Collection

The data was collected mainly online, both personal contact and the researcher's social networks were used to obtain the respondents from the various organizations. The online method was chosen especially during this global pandemic period to support governments' policy to avoid close contacts with others. The respondents were advised that their participation in the survey would be completely voluntary and anonymous. All responses were coded in an excel spread sheet for further analysis.

4.4. Analytical Techniques

The data coded in an Excel spread sheet was later summarised using SPSS, and structural equation modelling (SEM) was used to analyse the data, validate the measurement model and test the hypotheses.

4.4.1. Structural Equation Modelling

All analyses were performed using SPSS 11.0 (SPSS Inc, Illinois). Descriptives of the IES, GAD and PHQ scores were presented using mean (standard deviation) range and median. A factor analysis was performed to cluster the coping strategies and life's priorities during the Covid-19 situation. Finally, logistic regression analysis was performed to determine predictors (the reduced factors for the coping strategies and changes in priorities determined from the factor analysis) indicative of severe psychiatric symptoms or post-traumatic stress disorder. Statistical significance was set at $P < 0.05$.

Structural equation modelling (SEM) is used extensively in a number of academic disciplines, including the marketing arena (Chau, 1997; Maruyama, 1998). SEM is described as

a powerful, yet complex, second-generation multivariate analysis technique (Fornell & Larcker, 1981; Shook, Ketchen, Hult, & Kacmar, 2004) that can be used for analysing results having a number of variables, allowing the assessment of measurement properties and theoretical (structural) relationships, including unobservable latent variables with multiple relationships, at the same time within the same analysis (Chin, 2000; Chin, 1998). In a more general form, SEM consists of multiple regression, factor analysis and path analysis techniques to simultaneously estimate the measurement of, and the relationships between, a number of theoretically related constructs (latent variables) (Hoyle, 1995; Jöreskog, 1993; Kelloway, 1998; Kline, 2011; Maruyama, 1998; Richard, 2008; Schumacker & Lomax, 2004; Shook, et al., 2004). There are four general advantages of SEM procedures over other multivariate analysis techniques based on the general linear model (Quintana & Maxwell, 1999). Firstly, SEM and path analysis allow for greater flexibility when representing relationships among theoretical constructs than is possible with other GLM procedures (Kenny, 1979). A second advantage is that SEM, like factor analysis, allows researchers to posit latent constructs that are presumed to be the underlying causes of observed manifest variables (Bollen, 1989; MacCallum, 1995). Thirdly, in most other statistical procedures based on the general linear model, constructs are assumed to be measured without error; measurement error that is present but unaccounted for can bias statistical results, such as regression coefficients (Bollen, 1989). In contrast, SEM procedures can be employed to calculate the reliability of measurement instruments, as well as estimated latent constructs (Kenny, 1979). Fourthly, SEM provides assessments for the general compatibility that is goodness of fit of the model for the data also to evaluating the strength of relationships among constructs (Hoyle, 1995).

SEM is based on two very important techniques: covariance-based and principal component based (Richard, 2008). Covariance-based SEM is mainly applied for model validation, whereas principal component-based SEM is used for score computation that can be

applied to small sample sizes (Tenenhaus, 2008). Covariance-based SEM presupposes data to be multivariate normal; this approach enables the requirements of univariate normality, linearity, homoscedasticity, non-multicollinearity, and scaled relative variance to be met, and requires a large sample size (the definition of large varies from one author to another: samples of 250 or more are often mentioned) (Hair, Black, Babin, Anderson, & Tatham, 2006; Kline, 2011; Richard, 2008; Schumacker & Lomax, 2004). Data distributions without these assumptions may not provide valid SEM results. Therefore, covariance-based SEM does not cope well with comparatively small sample sizes when examining large numbers of links, non-linear relationships between variables and constructs, multicollinearity and heteroscedasticity (Gefen, Straub, & Boudreau, 2000). The covariance-based SEM approach must be applied properly with regard to: (a) data characteristics (b) reliability and validity (c) evaluating model fit (d) model respecification and (e) equivalent models (Shook, et al., 2004).

4.4.1.1. Multinomial Logistic Regression Analysis

Multinomial logistic regression is a classification method that generalizes logistic regression to multiclass problems, i.e. with more than two possible discrete outcomes. That is, it is a model that is used to predict the probabilities of the different possible outcomes of a categorically distributed dependent variable, given a set of independent variables (which may be real-valued, binary-valued, categorical-valued, etc.).

Multinomial logistic regression is known by a variety of other names, including polytomous LR, multiclass LR, softmax regression, multinomial logit (mlogit), the maximum entropy (MaxEnt) classifier, and the conditional maximum entropy model.

The multinomial logistic model assumes that data are case specific; that is, each independent variable has a single value for each case. The multinomial logistic model also

assumes that the dependent variable cannot be perfectly predicted from the independent variables for any case. As with other types of regression, there is no need for the independent variables to be statistically independent from each other (unlike, for example, in a naive Bayes classifier); however, collinearity is assumed to be relatively low, as it becomes difficult to differentiate between the impact of several variables if this is not the case.

If the multinomial logit is used to model choices, it relies on the assumption of independence of irrelevant alternatives (IIA), which is not always desirable. This assumption states that the odds of preferring one class over another do not depend on the presence or absence of other "irrelevant" alternatives. For example, the relative probabilities of taking a car or bus to work do not change if a bicycle is added as an additional possibility. This allows the choice of K alternatives to be modeled as a set of $K-1$ independent binary choices, in which one alternative is chosen as a "pivot" and the other $K-1$ compared against it, one at a time. The IIA hypothesis is a core hypothesis in rational choice theory; however numerous studies in psychology show that individuals often violate this assumption when making choices. An example of a problem case arises if choices include a car and a blue bus. Suppose the odds ratio between the two is 1 : 1. Now if the option of a red bus is introduced, a person may be indifferent between a red and a blue bus, and hence may exhibit a car : blue bus : red bus odds ratio of 1 : 0.5 : 0.5, thus maintaining a 1 : 1 ratio of car : any bus while adopting a changed car : blue bus ratio of 1 : 0.5. Here the red bus option was not in fact irrelevant, because a red bus was a perfect substitute for a blue bus.

If the multinomial logit is used to model choices, it may in some situations impose too much constraint on the relative preferences between the different alternatives. This point is especially important to take into account if the analysis aims to predict how choices would change if one alternative was to disappear (for instance if one political candidate withdraws from

a three candidate race). Other models like the nested logit or the multinomial probit may be used in such cases as they allow for violation of the IIA.

4.5. Chapter Summary

This chapter outlined the methodological approach that is followed in this study. The research strictly follows a quantitatively-oriented approach. A quantitative method is executed in this study as it provides accuracy, reliability and testability. Moreover, it suggests a high degree of generalisability of the findings from the sample of the population. This study intends to test hypotheses that have been developed from existing theory and research. A survey method was used to collect the primary data required in this study because it is scientifically based and the findings can be quantified. A structured questionnaire was designed to collect the data through a field survey. The development of the questionnaire was based on the conceptual model that helps to identify the required information and the relationship that needed to be investigated.

CHAPTER 5

DATA ANALYSIS AND RESULT

5.1 Introduction

The purpose of this chapter is to present an analysis of the relevant data collected from the field survey conducted in Bangladesh. The chapter presents the results from the questionnaire survey, including the multigroup analysis techniques undertaken, and the results of the hypotheses testing.

5.2 Survey Response Analysis

5.2.1 Response Rate

In order to conduct research, scholars have to depend on the willingness of people to respond to questionnaires. A maximum response is not expected in studies where participation in a survey is voluntary (DeMaio, 1980). Survey methods using questionnaires should aim for the maximum response rate possible. Higher response rates lead to larger data samples and statistical power, as well as findings that have higher credibility among key stakeholders (Baruch & Holtom, 2008; Rogelberg & Stanton, 2007). The average aggregate response rate has settled at about 50% as a benchmark at individual level (Baruch & Holtom, 2008).

This study intended to collect data from a target sample size of 600. A total of 900 questionnaires were distributed to business organizations (both public and private sector). Survey questionnaires totaling 712 were returned, which corresponds to a total response rate of 79.11%. Seventy of the questionnaires received were missing data, resulting in a usable response rate of 71.33% (642 respondents).

Though large samples have many advantages, they may create potential problems when interpreting statistical significance. Researchers using statistical implication should be aware of the p-value problem related to large samples. P-values can quickly reach zero when a very large sample is used (Lin, Lucas, & Shmueli, 2013). There is no commonly accepted definition of large (Pedhazur & Schmelkin, 1991) but, in general, samples sizes of 50 as viewed as very poor, 100 as poor, 200 as fair, 300 as good, 500 as very good and 1000 as excellent (Comrey & Lee, 1992; Nabatchi, 2007). Sample size of 642 is considered sufficient for undertaking statistical analyses and modelling in this study.

5.3. Result

5.3.1 Demographic Variables

The survey received total 642 participants , with the average of (32.82±6.41) years old, 136 male participants(21.18%), 506 female participants(78.81%), among them 205(31.93) with the working experience less than 5 years, 325(50.62%) more than 5 years, and 112(17.45) more than 10 years working experience. As for their education level, 125(19.47%) master and above, 284(44.24%) undergraduates, 233(36.29%) diploma and below.

5.3.2 Model Construction and Evaluation

The test result shows 29.44% have encountered anxiety while 36.45% have depression. Working experience, education levels, the stress level and current personal health would affect the participants mental health, and there is statistics significance in the difference ($P < 0.05$).

Table 1: Participants' Demographic Data and Mental Conditions

	Sample N=642	Anxiety (GAD-7 >4)			Depression (PHQ-9>4)		
		Count	χ^2	P	Count	χ^2	P
Gender			0.414	0.520		0.082	0.774
Male	136(21.18)	37(27.21)			51(37.5)		
Female	506(78.81)	162(30.03)			183(36.17)		
Age			0.996	0.608		2.109	0.348
18-25	43(6.70)	15(34.88)			20(45.51)		
26-45	563(87.69)	162(28.77)			202(35.87)		
46-65	36(5.61)	12(33.33)			12(33.33)		
Working Experience			21.044	0.000		18.021	0.000
Junior<5 years	205(31.93)	40(19.51)			59(28.78)		
Senior>5 years	325(50.62)	100(30.77)			116(35.69)		
Expert>10 years	112(17.45)	49(43.75)			59(52.58)		
Education Level			9.000	0.705		9.306	0.609
Master and above	125(19.47)	26(20.80)			31(24.80)		
Undergraduate	284(44.24)	80(28.17)			109(38.38)		
Diploma and below	233(36.29)	83(25.62)			94(40.34)		
Stress Level (Reflect of Stressors in Scores)			86.087	0.000		56.551	0.000
Not worry(<20)	56(8.72)	4(7.14)			7(12.50)		
Slightly worry(21-35)	342(53.27)	69(20.18)			96(29.07)		
Moderately worry (36-45)	58(9.03)	23(39.66)			29(50.00)		
Really worry (46-55)	121(18.85)	48(39.67)			64(52.89)		
Extremely worry (>56)	65(10.12)	45(69.23)			38(58.46)		
Health Status			41.233	0.000		43.601	0.000
Good	545(84.89)	134(24.59)			171(31.38)		
Normal	89(13.86)	50(56.18)			56(62.92)		
Deteriorate	6(0.93)	4(66.67)			6(100.00)		
Bad	2(0.31)	1(50.00)			1(50.00)		

Note: the comparison of Stress Level and Demographic Data, 1. Anxiety measures $P<0.05$, 2. Depression measures $P<0.05$

5.3.3 Multinomial Logistic Regression Analysis

The anxiety was mostly due to the stressors caused by Covid-19 and their current health status, while their working experience is the buffer ($P<0.05$). Education level has no connection with the anxiety measures (Table 2). Stressors due to Covid-19 and health status($P<0.05$) is the main cause of depression, with the working experience as the buffer ($P<0.05$). Educational level has no significant connection with the depression measures (Table3).

Table 2: Logistic Regression for Binary Outcomes (Anxiety)

Method	B	SE	Wald	OR	P	95%CI
Working Experience			12.63		0.002	
(1)	-1.01	0.28	12.62	0.37	0.005	0.21~0.64
(2)	-0.54	0.25	4.64	0.59	0.031	0.36~0.95
Stress Level	0.62	0.08	59.26	1.86	0.000	1.59~4.36
Health Status	1.04	0.22	22.67	2.84	0.000	1.85~4.36

Note: Using Working Experience, Expert as reference, creating 2 dummy variables, (1): Junior = 1, Non Junior = 0, (2): Senior = 1, Non Senior = 0

Table 3: Logistic Regression for Binary Outcomes (Depression)

Method	B	SE	Wald	OR	P	95%CI
Working Experience			11.93		0.003	
(1)	-0.86	0.26	10.92	0.37	0.001	0.25~0.70
(2)	-0.70	0.24	8.66	0.42	0.003	0.31~0.79
Stress Level	0.47	0.08	38.62	0.50	0.000	1.38~1.85
Health Status	1.15	0.23	26.00	3.16	0.000	2.03~4.91

Note: Using Working Experience, Expert as reference, creating 2 dummy variables, (1): Junior = 1, Non Junior = 0, (2): Senior = 1, Non Senior = 0

5.4. Hypothesis Testing Summary

Hypothesis testing is appropriate when the purpose is to test the probability of assumption about population parameters based on samples from such populations. Hypotheses cannot be proved precisely, but statistically can be accepted or rejected based on levels of significance and confidence intervals. Therefore, to “accept” or “reject” the hypothesis represents that there is enough statistical evidence to actually accept or reject the hypotheses.

The hypothesis in this study focus on the relationship between stressors (independent variable) and employees’ mental condition. In the model, employees’ mental health is dependent variable and their working experience is mediator. All these variables were measured by the working adults’ responses. Each structural path of the model represents a possible relationship between the two variables and can be analyzed for significance. The path coefficient may be considered equivalent to a regression coefficient (β) and measures the unidirectional relationship between two constructs (Fornell, 1982; Pedhazur, 1982).

As shown by the tables, under Covid-19 the public has been tested with anxiety 29.44% and depression 36.45%. H1, H2, H2a, H4 proved to be accepted, while H3 proved to be not related.

5.5. Chapter Summary

This chapter outlines the survey response analysis, confirmatory factor analysis, the process of measurement refinement, establishes measurement validity and reliability, and presents SPSS analysis and hypotheses testing. Most of the hypotheses are accepted as significant and one hypothesis is not significant. The important finding is that stressors positively and directly influences employees' mental health. In addition, there is empirical support that working experience, employee's current health status moderates the relationship between stressors and employees' mental health.

CHAPTER 6

DISCUSSION AND CONCLUSION

6.1. Introduction

The main focus of the study is to determine the effect of stress occurred during pandemic on employees' mental health. It investigates the impact of stressors on mental health and the impact of personal factors. In this context, an initial research model is conceptualized and tested using a questionnaire survey working adults in Malaysia. Data was collected from the major city of Malaysia across a number of organizations, The results of the nationwide survey were analysed using structural equation modelling (SEM).

This chapter discusses the results of the study with reference to the extant relevant literature. It also provides implications, limitations, future research areas and conclusions. The study seek to extend the field of employees mental health by investigating the impact of stressors on mental health and personal factors affecting the stressors. The main findings suggest that stressors influence employees mental health. This finding also shows that employee's experience and health status have a partial moderating effect on the relationship between stressors and mental health.

6.2. Effect of Stressors on Employees' Mental Health

6.2.1. Covid-19's Stressors and Employees' Psychological Health

The finding indicate significant impact of the stressors to the employees. In addition to the biological health and safety of the general population as well as health care professionals, a stream of research has also addressed potential threats to the mental/psychological health and

domestic safety challenges posed by the COVID-19 crisis (Dalton et al., 2020; Davis et al., 2020; Joob and Wiwanitkit, 2020; Kanget al., 2020a; Liu et al., 2020 b; Montemurro, 2020; Shi and Hall, 2020). It is clear that psychological well-being and physical safety are intrinsically interconnected and cannot be reasonably categorized as fully separate safety dimensions. Severe depression and anxiety can lead to self-harm and even suicide and domestic violence which all affect the physical well-being of individuals. Nevertheless, the focus of studies in this stream is on the indirect mental health impacts of this global epidemic rather than the biological and clinical aspects.

Disease outbreaks not only disrupt basic life activities and impede economic growth (McKibbin & Fernando, 2020; Smith, Keogh Brown, & Barnett, 2011), they can also elicit both acute and long-term effects on individuals' well-being. In other words, the toll on individuals is not just physical and financial, but emotional as well. Many studies have consistently found relationships between the occurrence of infectious disease outbreaks and a host of psychological and behavioral consequences. Among the negative psychological consequences that have been most frequently reported are greater incidence of depression and psychological distress (Bai et al., 2004; Bults et al., 2011; Jones & Salathé, 2009; Shultz et al., 2016), worry (Thompson, Garfin, Holman, & Silver, 2017), functional impairment (Thompson et al., 2017), anxiety about being infected (Horney, Moore, Davis, & MacDonald, 2010; Jehn, Kim, Bradley, & Lant, 2011; Rubin, Potts, & Michie, 2010; Leggat, Brown, Aitken, & Speare, 2010), and reduced quality of life (van Hoek, Underwood, Jit, Miller, & Edmunds, 2011) and subjective well-being (Lau et al., 2008).

In terms of behavioral consequences, exposure to outbreaks also resulted in preventive behaviors such as improved hygienic practices (Bults et al., 2011; Kiviniemi, Ram, Kozlowski, & Smith, 2011), seeking medical assistance (Lau et al., 2008, Lau, Griffiths, Au, & Choi, 2011) and engaging in social distancing and isolation (Setbon, Le Pape, Létroublon, Caille-Brillet, & Raude,

2011; Wong & Sam, 2010). The above psychological and behavioral consequences are experienced by the broader workforce but perhaps more acutely by essential workers. In studies focusing on health care workers, they often report concerns about the (non) availability of personal protective equipment (PPE), personal safety, vaccine availability, caregiving responsibilities at home, and prioritizing the well-being of family members (e.g., Damery et al., 2009; Ives et al., 2009; Martin, 2011; Tippet et al., 2010).

Psychological distress also occurs as a result of mitigation strategies (e.g., social distancing, home containment, and travel restrictions) aimed to prevent the spread of the disease. For example, in a study of health care workers in a treatment facility during the SARS outbreak, Maunder et al. (2003) reported incidents of professional isolation arising from the use of protective masks and observance of non-physical contact with coworkers reduced morale among health care workers, and refusal to work among administrative and professional staff. Bai et al. (2004) investigated reactions of health care workers and professional staff shortly after 57 health care workers were quarantined due to the SARS epidemic. Results revealed that 20% of the participants reported feeling stigmatized, ostracized and rejected in their neighborhoods due to their hospital work while 9% expressed reluctance to return to work or had thoughts of quitting their job. Beyond those in the health care sector, in response to disease outbreaks, individuals in many organizations and industries have to endure harsh workplace conditions such as limited availability of social and work support, increased work demands, irregular work hours, inadequate work benefits, and poor access to healthcare (Blake, Blendon, & Viswanath, 2010; Blendon et al., 2008, International Labor Organization, 2020).

These challenging work conditions often increase general health complaints such as fatigue, upset stomach, sleeping difficulties and headaches (Matsuishi et al., 2012; Shigemura, Ursano, Morganstein, Kurosawa, & Benedek, 2020). Additionally, school closures and suspension of religious activities (Baum, Jacobson, & Goold, 2009; Berkman, 2008; Cauchemez

et al., 2009; Lee, 2020) arising from social distancing measures further exacerbate these adverse psychological difficulties and contributed to serious financial strain (Cauchemez et al., 2009; Chen, Huang, Chuang, Chiu, & Kuo, 2011). Taken as a whole, these studies suggest that disease outbreaks can have pervasive consequences for mental health and well-being across the workforce.

6.2.2. Moderating Effect of Working Experiences

The findings of the study indicate the partial moderating effect of working experiences towards the relationship between stressors and mental health. This is possibly due to the higher working experience the more stress the employees are bearing, thus bringing pressure to perform in workplace. Employees who start to feel the “pressure to perform” can get caught in a downward spiral of increasing effort to meet rising expectations with no increase in job satisfaction. The relentless requirement to work at optimum performance takes its toll in job dissatisfaction, employee turnover, reduced efficiency, illness and even death. According to Cartwright *et al*(2002) absenteeism, illness, alcoholism, “petty internal politics”, bad or snap decisions, indifference and apathy, lack of motivation or creativity are all by-products of an over stressed workplace. Employees who start to feel the “pressure to perform” can get caught in a downward spiral of increasing effort to meet rising expectations with no increase in job satisfaction. The relentless requirement to work at optimum performance takes its toll in job dissatisfaction, employee turnover, reduced efficiency, illness and even death. Absenteeism, illness, alcoholism, “petty internal politics”, bad or snap decisions, indifference and apathy, lack of motivation or creativity are all by-products of an over stressed workplace.

Role determines the obligation of the person holding that office. Pestonjee and Pareek (1997) explains role as the totality of formal tasks, informal tasks and Distress, Wellness and

OR acts as organized by an individual. Each individual is a member of social systems and the expectation as well as demand of one may put pressure on the other. There are 2 role systems: Role Space and Role Set. Both have built in potential for conflict and stress (Pareek, 2003). It may be expected that organizational role stress will operate in interaction with the general ill-being and well-being. There is unexpected high relationship of organizational role stress with these two. There is ample literature to associate life stress and coping resources to feeling of ill being and well-being. The stress diathesis model essentially says that the effect of stressors on illness and wellness is not absolute, but a function of moderating factors like inner strength and coping techniques. One significant study by J Health Soc Behav.(2000) asserted that three lines of research provide strong evidence that environmental adversity is important in the occurrence not only of post-traumatic stress disorder (PTSD) but also of other types of psychopathology, including major depression, alcoholism, substance use disorders, antisocial personality disorder and nonspecific distress.

The exposure to the pandemic vary based on the working environment and the employee's occupational role (Bai et al., 2004; Brooks et al., 2018). Therefore, its impact on employees' mental health is supposed to vary as well. In this context, besides their work overload (Mauder, 2004), health care employees have a very high exposure to the virus since they are in constant contact with the general public, which makes their occupation high risk in terms of mental health, especially during a pandemic (Bai et al., 2004; Chen et al., 2005; Huang & Zhao, 2020; Huang et al., 2020; Ho et al., 2020; Koh, 2020; Mauder et al., 2006; Mauder, 2004; Wu et al., 2009; Xiang et al., 2020; Zhu et al., 2020). During the COVID-19 in China, the vice minister at the National Health Commission announced on February 14, 2020, that six health workers have died from the new coronavirus and more than 1,700 have been infected (CNA, 2020). Mauder (2004) pointed out that being a nurse, having contact with SARS and having children is associated with a high level of psychological distress.

Employers have the responsibility to protect their employees and to ensure a workplace free from hazards that may physically harm them or cause their death. The current situation caused by COVID-19 is challenging for organizations all over the world. In this context, managers should work closely with human resource practitioners and health institutions in order to develop a safety and health plan which will prevent the risk of contagion and coronavirus spread within the organization. Organization's policies play an important role in this context in minimizing the spread of the virus. For this purpose, they need to follow the guidelines of health officials, of their country's government and of the World Health Organization (Benson & Dix, 2009). They need to educate and train their employees about prevention behaviours and to provide the required protection material for those who need to be present in the workplace (e.g. Masks, Sanitizers, social distancing...). They also need to post prevention guidelines (e.g. wash hands, avoid touching eyes, nose and mouth) (Ramesh et al., 2020), and to allow telework if possible (Benson & Dix, 2009). Having clear preventive measures in the workplace will build trust which will help to reduce employees' level of stress. They will feel protected and supported by their employer (Brooks et al., 2018).

6.3. Research Contribution and Implications

The present paper is a quantitative and literature research which examines the impact of coronavirus COVID-19 on employees' mental health, mainly psychological distress and depression. It presents a review of the main stressors during and post pandemic, as well as the potential moderating factors in the relationship between COVID-19 and employees mental health. Three dimensions of moderators have been reviewed: organizational, institutional and individual dimensions. The goal of this paper is to enrich the understanding of COVID-19's impact on employees' mental health, and to suggest avenues for organizational actions from a human resource management perspective, during and post COVID-19 in order to mitigate its

effects. Very few articles have examined COVID-19 from psychological and managerial perspectives. This paper helps to broaden the scope of research on workplace mental health, and to provide some insights for managers and human resource management practitioners.

6.3.1 Practical implications for organizations

COVID-19 crisis is unprecedented in terms of infectiousness, how quickly the illness spread to different countries, impacting the world's economy. Companies are not all equipped to cope with this pandemic, in terms of information, resources and competencies. Managers and human resource practitioners need to find ingenious solutions to maintain operations while ensuring the protection of their employees. This paper provides valuable information that helps organizations to understand the main stressors during COVID-19 and those potentially to be present after COVID-19. It also provides information about the main moderating factors that may mitigate or aggravate the impact of the COVID-19 on employees' mental health. The recommendations presented in this paper should help the managers and human resource practitioners to develop an intervention plan for the period during and after COVID-19, to maintain an efficient and rapid continuous communication with their employees including managers and to maintain partnership of managers, human resource practitioners, health and government's officials.

6.3.2 Managerial Implications

COVID-19 crisis is unprecedented in terms of infectiousness, how quickly the illness spread to different countries, impacting the world's economy. Companies are not all equipped to cope with this pandemic, in terms of information, resources and competencies. Managers and human resource practitioners need to find ingenious solutions to maintain operations while

ensuring the protection of their employees. This paper provides valuable information that helps organizations to understand the main stressors during COVID-19 and those potentially to be present after COVID-19. It also provides information about the main moderating factors that may mitigate or aggravate the impact of the COVID-19 on employees' mental health. The recommendations presented in this paper should help the managers and human resource practitioners to develop an intervention plan for the period during and after COVID-19, to maintain an efficient and rapid continuous communication with their employees including managers and to maintain partnership of managers, human resource practitioners, health and government's officials.

6.4. Suggestions and recommendations: What can be done from a human resource management perspective to mitigate the outcomes of COVID-19 on employees' mental health during and after the pandemic outbreak

Based on the identified stressors which may explain the potential negative effects of COVID-19 outbreak on employees' mental health and moderating factors that may mitigate or aggravate these effects, we have developed a list of considerations and recommendations for workplaces, mainly for managers and for human resource management practitioners. It appears that mitigation measures are needed during and after a pandemic in order to reduce its potential negative effects on an individual's mental health (Brooks et al., 2020). In this context, we suggest that organizations should develop a short- and long-term organizational plan, based on the following recommendations:

Optimize communication and transparency

Managers in collaboration with human resource management professionals need to develop a communication plan, which clearly presents the decisions related to the business continuity plan of the organization during the pandemic (Smith et al., 2007). Furthermore, managers should maintain continuous communication with their employees whether they are physically present or not in the workplace (Greer & Payne, 2014). Moreover, employers should involve employees in the preparation of the post pandemic business plan, which will reduce employees' level of stress, foster positive attitude and reinforce team cohesion. In fact, decision latitude has been largely documented as a buffer of the stressors that may undermine employees' mental health (Karasek, 1979).

Communication is also crucial following the pandemic, in order to reduce employees' uncertainty and their level of stress. In this context, a communication plan should be developed in order to provide clear information to employees about what will happen after COVID-19, what are the main actions that will be taken to resume organizational operations, and the potential impact of these actions on employees' work. Indeed, providing clear and transparent information about the organization's future plans may reduce the fear of the unknown.

Prevention of stigma

Stigmatization can be minimized by providing accurate and timely COVID-19 information (Bai et al., 2004) and training (Brooks et al., 2020) to employees and managers during and after the pandemic outbreak. Furthermore, organizations should develop or reinforce workplace policies that address stigma prevention. For example, the development of a zero-tolerance policy (anti-discrimination) (Stewart, 2018) is a valuable tool to protect employees, prevent stigma, and enhance health and wellbeing in the workplace.

Training

Training is also essential during and after the pandemic. It is considered as a protective factor against mental health issues (Brooks et al., 2018). It helps to educate employees about the necessary behaviours and their importance in the prevention of viral spread. General education about COVID-19 and the reasons for quarantine can reduce stigmatization (Brooks et al., 2020) in the workplace. Training also needs to involve managers. COVID-19 is an unexpected crisis, managers need to be coached and trained on how to properly manage it, which may reduce their level of stress. They also need to be trained on how they should manage virtual teams, considering the context of teleworking, in order to be able to support their team members. Co-development programs should be implemented in this context, to develop employees and managers' abilities to cope with the COVID-19 impact on the workplace.

Management of teleworking and prevention of social isolation

In order to prevent the negative outcomes of teleworking on employees' mental health during COVID-19, organizations should develop proper strategies to support employees during organizational changes. The study of Greer & Payne (2014) put forward some strategies identified by teleworkers, that may help to overcome the challenges of teleworking. These strategies encompass continuous communication with co-workers and supervisors, during teleworking, about expectations, work progress and availability. As well as providing flexibility to the employee to organize his work schedule and priorities. Moreover, good technological equipments should be provided to employees, in order to facilitate their work and interaction with their supervisor and co-workers, and reduce their level of stress. Teleworkers also need to be trained on the utilization of technology to facilitate their work and communication while they are away from their workplace, which will reduce their level of stress (Greer & Payne, 2014).

Social support

Social support at work is largely documented in the literature as a protective factor against workplace mental health issues (Karasek & Theorell, 1990). The development and implementation of mental health support and services are crucial to prevent mental health outcomes of COVID-19 (Xiang et al., 2020; Xiao et al., 2020). Some studies pointed out that inadequate psychological support from the employer represents a risk factor for poor mental health (Brooks et al., 2018; Tam et al., 2004). The study of Wu et al. (2005) showed that mobilization of resources for emotional support may enhance resilience of SARS survivors. In order to mitigate the potential negative impact of quarantine, social isolation, fear of contagion and uncertainty on employees, managers should foster a supportive environment in the workplace (Brooks et al., 2018). In this context, social support programs need to be developed during and after COVID-19, by maintaining continuous communication with employees (Greer & Payne, 2014), for example by organizing regular virtual team meetings. Employee assistance should also be provided in this situation (Benson & Dix, 2009), it can be through employee assistance programs which should be offered for managers and non-managers. Indeed, although managers are those who enable organizations to recover from a major crisis (Wooten & James, 2008), they are not immune from mental health problems, they also need support from their team members (Hamouche, 2019), by maintaining continuous contact with them.

Development of return-to-work plan

Employers should also develop a return-to-work plan for employees who have been quarantined or was in a teleworking mode, during COVID-19. This type of plan may reduce the employees' level of stress and the risk of mental health issues. In this case, the employer should discuss expectations and the company's future plans with the employee prior to his

return to work. Work accommodations and a gradual return-to-work can be considered, in this context (Durand et al., 2014), if needed by the employee who has been quarantined or has suffered from a mental health issue during the pandemic.

6.5. Limitation of the Research Study

The novelty of the COVID-19 and its potential negative impact on employees' mental health urge this type of research. The main goal of this paper is to provide the necessary information to prevent or mitigate the negative impact of COVID-19 on employees' mental health.

The contribution of the research should be, however, considered in light of certain limitations. First, the potential for the selection of the articles to be subjective. However, the databases used (Google scholar, web of science and semantic scholar) provide the most cited articles. Furthermore, the informative character of this paper and its main objective to provide useful information for employees and organizations do not require a systematic review of the literature. In this study, the type of occupation (e.g. Healthcare and First line) and ages of the employees were not examined. It is understood that these factors would highly affect the result of the research.

This research can be useful for the development of a conceptual model that can be tested empirically in future research to determine the association between the identified stressors and employee's mental health during or post COVID-19 outbreak. Second, the studies related to COVID-19 were conducted while the pandemic is still going, which does not help to identify the real stressors post COVID-19 and to confirm the presence of a causal relationship. Future research needs to be performed in this case to explore this relationship. Moreover, future research may explore other stress factors or moderating factors that are not explored in this

paper, like the history of the physical health of the individual, marital status, organization size. Finally, most of the articles highlight the vulnerability of health care workers' mental health during and after the pandemic. Future research may explore specifically the impact of COVID-19 on health workers mental health. It may cover, in this case, other mental health outcomes like burnout.

6.6. Conclusion

Having a perceived sense of control, a reduced perceived risk and available social support were important in the health and wellbeing of the staff during the Covid-19 crisis. Hence, clear directives and disease information, as well as being able to ventilate and voice their concerns, are important in empowering staff and in turn, improving their ability to cope. Making all protective measures to all employees did not just protect them physically – it made them feel safer. The sense of control and the perceived risk level appear to be the actual determinants of emotional impact, despite the actual risk level.

Employees in a safe and supportive environment feel better and are healthier, which in turn leads to reduced absenteeism, enhanced motivation, improved productivity and a positive organization's image. The prevention of occupational accidents and diseases, the promotion of a healthy working life and the building of a preventive culture is a shared responsibility of governments, employers and workers, health professionals and societies as a whole.

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APPENDICES

Appendix A – Questionnaire

A. Demographics Section

1. What is your gender?

Male

Female

2. Your age

18-25

26-45

46-65

3. Highest education level:

Diploma and below

Undergraduate

Master and above

4. How long have you been working?

Less than 5 years

5 to 10 years

More than 10 years

5. How are your current health conditions? (includes minor sickness)

Good

Normal

Deteriorate

Bad

B. Detailed Stressors Experienced During MCO Period

Stressors Experienced	Strongly Disagree → Strongly Agree				
1. Safety Concern					
Feared getting infected with Covid19	1	2	3	4	5
Always wore mask and use sanitizer	1	2	3	4	5
Anxiety when dealing with outsiders	1	2	3	4	5
Uncertainty about company's safety policy	1	2	3	4	5
2. Infobesity and Fear of The Unknown					
Invest a majority of free time reading or watching Covid-19 related information	1	2	3	4	5
Pessimism or hopelessness	1	2	3	4	5
Irritability	1	2	3	4	5
Insomnia	1	2	3	4	5
3. Quarantine and Confinement					
Afraid to be asked to work from home	1	2	3	4	5
Ever been quarantined (including self-quarantine)	1	2	3	4	5
4. Sigma and Social Exclusion					
Absence of emotional response	1	2	3	4	5
Detachment from others	1	2	3	4	5
Stigmatization and rejection by neighborhood	1	2	3	4	5
5. Financial Loss & Job Security					
Deteriorating work performance	1	2	3	4	5
Reduced salary	1	2	3	4	5
Reluctant to work or considered resignation	1	2	3	4	5
Worry to be discharged by company	1	2	3	4	5

GAD-7 Anxiety Test

Over the Covid-19 period, how often you been bothered by the following problems?	Not at all	Several Days	More than half the days	Nearly every day
1. Feeling nervous, anxious or on edge	0	1	2	3
2. Not being able to stop or control worrying	0	1	2	3
3. Worrying too much about different things	0	1	2	3
4. Trouble relaxing	0	1	2	3
5. Being so restless that it is hard to sit still	0	1	2	3
6. Becoming easily annoyed or irritable	0	1	2	3
7. Feeling afraid as if something awful might happen	0	1	2	3

Column totals: ___ + ___ + ___ + ___
= Total Scores _____

If you checked off any problems, how difficult have these problems made it for you to do your work, take care of things at home, or get along with other people?

- Not difficult at all
- Somewhat difficult
- Very difficult
- Extremely difficult

PHQ-9 Depression Test

Over the Covid-19 period, how often you been bothered by the following problems?	Not at all	Several Days	More than half the days	Nearly every day
1. Little interest or pleasure in doing things	0	1	2	3
2. Feeling down, depressed, or hopeless	0	1	2	3
3. Trouble falling or staying asleep, or sleeping too much	0	1	2	3
4. Feeling tired or having little energy	0	1	2	3
5. Poor appetite or overeating	0	1	2	3
6. Feeling bad about yourself – or that you are a failure or have let yourself or your family down	0	1	2	3
7. Trouble concentrating on things, such as reading and watching	0	1	2	3
8. Moving or speaking so slowly that other could have noticed? Or the opposite – being so fidgety or restless that you have been moving around a lot more than usual	0	1	2	3
9. Thoughts that you would be better off dead or of hurting yourself in some way	0	1	2	3

Column totals: + + +
= Total Scores

From the Primary Care Evaluation of Mental Disorders Patient Health Questionnaire (PRIME-MD PHQ). The PHQ was developed by Drs. Robert L. Spitzer, Janet B.W. Williams, Kurt Kroenke and colleagues. For research information, contact Dr. Spitzer at rls8@columbia.edu. PRIME-MD® is a trademark of Pfizer Inc. Copyright© 1999 Pfizer Inc.

Scoring notes.

- **PHQ-9 Depression Severity**

Scores represent: 0-5 = mild 6-10 = moderate 11-15 = moderately severe 16-20 = severe depression

- **GAD-7 Anxiety Severity.**

This is calculated by assigning scores of 0, 1, 2, and 3, to the response categories of “not at all,” “several days,” “more than half the days,” and “nearly every day,” respectively. GAD-7 total score for the seven items ranges from 0 to 21.

Scores represent: 0-5 mild 6-10 moderate 11-15 moderately severe anxiety 15-21 severe anxiety

APPROVAL PAGE

**TITLE OF PROJECT: IMPACT OF STRESSORS CAUSED BY COVID-19
 TO EMPLOYEES' MENTAL HEALTH**

NAME OF AUTHOR: LEE LOH JOO

The undersigned certify that the above candidate has fulfilled the condition of the project paper prepared in the partial fulfillment for the degree of Master of Business Administration.

SUPERVISOR

Signature : _____
Name :
Date :

ENDORSED BY:

Dean
Graduate School of Business
Date: