# Psychological Impact of Covid-19 Pandemic among Malaysia Population

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**for the Degree of Master of Business Administration**
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DECLARATION

I hereby declare that the case study is based on my original work except for quotations and citations that have been duly acknowledged. I also declare it has not been previously or concurrently submitted for any other degree at Universiti Tun Abdul Razak (UNIRAZAK) or other institution.



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

**Psychological Impact of Covid-19 Pandemic among Malaysia Population**

**By**

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Purpose : The purpose of this study is to identify and discuss the key conceptual and empirical issues if the demographical group influenced the Malaysian mental health during covid-19.

Methodology : A cross-sectional online form of survey was be carried out to gather data using an online questionnaire from Warwick - Edinburgh Mental Well- Being scale (WEMWBS), Participant Health (PHQ-9), Participant Health (GAD-7) and Participant Health (ISI). These questionnaires were to assess the level of depression, self-report of participants' anxiety level, and the index level of insomnia

Result : To identify which demographic group are significantly effect of mental well-being which impacted during pandemic of covid -19.

Conclusion : After conducting a documentary review on the psychological impact of the mental health crisis due to covid-19, in which the most frequent were: stress and anxiety, depression, insomnia, and consequences according to the life cycle. Therefore, direct awareness campaigns, counselling programs, distress helplines, and mental health programs need to be expanded nationwide to decrease the number of affected populations in Malaysia.

# Chapter 1: Introduction

## 1.1 Background of the Study

On 12th of July 2021, The Straits Times reported that there is a hike in suicide rate and many calls to helplines amid the Covid-19 pandemic. A total of 468 suicides have taken place in the first five months of year 2021, as compared to 631 in the entire year of 2020 and 609 in the entire year of 2019 [1]. Befrienders Kuala Lumpur also recorded a total of 20,575 distress calls from January to June 2021 was made as compared to a total of 32,710 the entire year of 2020. A 45% hike of distress calls to befrienders from March to June 2021 as compared to the preceding year of same period [1]. A sentence from the article read "I'm burnt out, and it's almost impossible to juggle parenting, work, school and taking care of my differently-abled child. And for the first time in my life, I'm tired of staying at home. I've been a good citizen but why are cases still increasing?"

Many attributes the lockdown and pandemic to be the cause of these depression, anxiety, insomnia and mental health breakdown. Originating from a seafood market at Wuhan, China. The COVID- 19 outbreak started in December 2019. A public health emergency of international concern was declared by the world health organization on 30th January 2020 and a global pandemic declared on 11th March 2020. As of 28th April 2020, more than 2,900,000 cases reported worldwide with more than 200,000 deaths [2]. Due to this rapid increase in the number of cases and massive number of deaths, many have been experiencing psychological issue, including depression, anxiety and stress [3]. Like many countries globally, Malaysia is also looking into assessing and finding the right a process to move towards recovery plans to control the outbreak from getting overwhelming.



## 1.2 Problem Statement

To the authors knowledge, until today there is no such data available in Malaysia on the psychological impact of the Covid 19 pandemic on sociodemographic group and if this impact (if any) is significantly different between the groups. As stated by B Bhattacharjee based on a study conducted in USA, certain age group are more particularly at risk. In order to completely assess the impact of the Covid 19 pandemic on mental health, it is important to identify the susceptible population groups [13).

Worldwide attention has been on the transmission of the Covid 19 virus, neglecting the psychosocial consequences of the pandemic [15]. This mental health impact may develop into long-term health problems, isolation and stigma as stated by J Torales et al[10]. It is therefore important to collect and publish such data so that these susceptible individuals will be picked up early and appropriate psychosocial support and medical attention can be given to these individuals. The virus has been life threatening for years now and as of today, the numbers are still growing significantly.

### 1.3 Research Objectives

The purpose of this study is to determine the prevalence of mental health, depression, anxiety and insomnia which was affected due to Covid 19 on different sociodemographic of the Malaysian population based on the Warwick-Edinburgh Mental Well-being Scale, Participant Health (PHQ-9), Participant Health (GAD-7) and Participant Health (ISI). Specifically, the author pursues the following objectives:

1. To examine whether age factor influence well-being during covid-19.
2. To examine whether age factor influence factor influence depression during covid-19.
3. To examine whether age factor influence factor influence anxiety during covid-19.
4. To examine whether age status factor influence insomnia during covid-19
5. To examine whether gender factor influence well-being during covid-19.
6. To examine whether gender factor influence factor influence depression during covid-19.
7. To examine whether gender factor influence factor influence anxiety during covid-19.
8. To examine whether gender status factor influence insomnia during covid-19
9. To examine whether race factor influence well-being during covid-19.
10. To examine whether race factor influence factor influence depression during covid-19.
11. To examine whether race factor influence factor influence anxiety during covid-19.
12. To examine whether race status factor influence insomnia during covid-19
13. To examine whether marital status factor influence well-being during covid-19.
14. To examine whether marital status factor influence factor influence depression during covid-19.
15. To examine whether marital status factor influence factor influence anxiety during covid-19.
16. To examine whether marital status factor influence insomnia during covid-19

## 1.4 Research Questions

1. Does age factor influence well-being during covid-19.
2. Does age factor influence depression during covid-19.
3. Does age factor influence anxiety during covid-19.
4. Does age factor influence insomnia during covid-19
5. Does gender factor influence well-being during covid-19.
6. Does gender factor influence depression during covid-19.
7. Does gender factor influence anxiety during covid-19.
8. Does gender factor influence insomnia during covid-19
9. Does race factor influence well-being during covid-19.
10. Does race factor influence depression during covid-19.
11. Does race factor influence anxiety during covid-19.
12. Does race factor influence insomnia during covid-19
13. Does marital status factor influence well-being during covid-19.
14. Does marital status factor influence depression during covid-19.
15. Does marital status factor influence anxiety during covid-19.
16. Does marital status factor influence insomnia during covid-19



## 1.5 Significance of the Study

By determining these objectives, information can be made available if the ongoing Covid-19 pandemic has the similar mental well-being, depression, anxiety and insomnia impact on the Malaysian population as reported in other countries. Also, if any specific sociodemographic targeted therapy or treatment needed or general measures are needed to address these issues.

Example: If condominium community population is not significantly as this group of samples was the busiest among the 4 types of residential as base on the data collected, they have very high commitment and busy with their fix monthly income work, then a more conceptual strategy approach shall be targeting on this group of community to create more awareness on the importance of urban farming especially during pandemic.

## 1.6 The Organization of the Study

This study, we will be using quantitative method, an online survey form has been created and will be sent during the period mentioned, and we will be performing an online data collecting. The survey will be performed by using google form with the Warwick-Edinburgh Mental Well-being Scale, Participant Health (PHQ-9), Participant Health (GAD-7) and Participant Health (ISI). All perticipants will be notified about the study purpose and all information gathers shall be use for this research study purpose only. The participations are voluntary, confidentiality and anonymous. The samples that will then be collected shall be filtered accordingly.

After the survey are being completed, data will be collected and extracted via excel format. As for requirement, who does not agree for their voluntary participation will be “disqualified”. After that, those survey which did not answer full 14 questions on mental well-being, 9 survery questions on depression (Participant Health (PHQ-9)), 7 survey questions on anxiety (Participant Health (GAD-7)) and 7 questions on insomnia (Participant Health (ISI)) will be remove too under “incomplete”. This group of data shall be categorize as “Completed Questionnaire”. As for demographical questions, if the partipants did not declared any of the demographic questionaire, they will be excluded under “with missing data”. We shall finally label this category under “completed survey” which will be our “n”. Please refer to the Figure 1 below for the study flowchart.

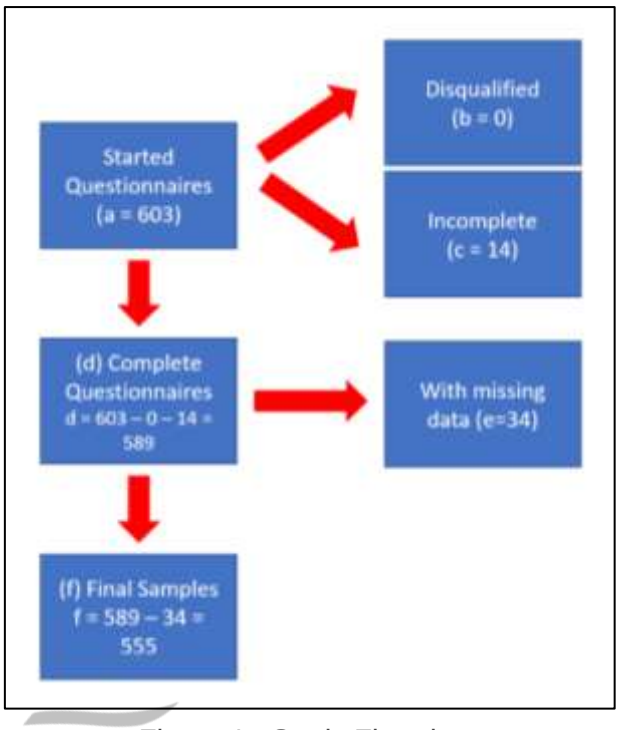


Figure 1 : Study Flowchart



After completion of the survey compilation and final sample size has been accumulated with a total of 555, all results are being analyze by using quantitative methods (SPSS version 25.0). Then we will generate the summary report of the survey conducted. Data will be compiled and enable the study to assess the overall the impact during Covid-19 pandemic on Malaysian population mental well-being, depression, anxiety and insomnia by sociodemographic. The study will be displayed by using tables to show on the summary report and analytical data. Refer to Figure 2 for the organization of study below for the overview of the study.

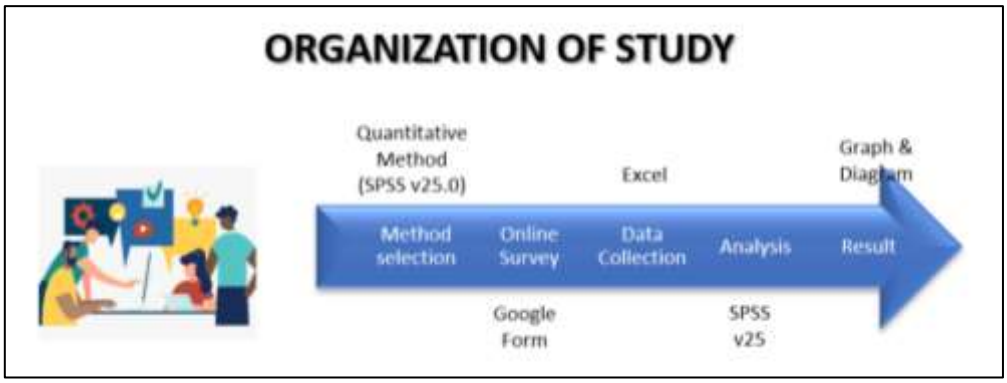


Figure 2 : Organization of study

# CHAPTER 2: Literature Review

## 2.1 Introduction

The Straits Times reported a rise in suicide rates and calls to helplines on July 12, 2021, in the midst of the Covid-19 pandemic. In the first five months of 2021, 468 people committed suicide, compared to 631 in the entire year of 2020 and 609 in the entire year of 2019 [1]. Befrienders Kuala Lumpur reported receiving 20,575 distress calls from January to June 2021, compared to 32,710 for the entire year of 2020.

From March to June 2021, there was a 45% increase in distress calls to befrienders when compared to the same period the previous year [1]. Many people believe that the lockdown and pandemic has causes mental health breakdown, depression, anxiety and insomnia. Those are the possible reason of high rate on distress call and also contributing on the suicide rate. Originating from a seafood market in Wuhan, China. The COVID-19 outbreak began in December of 2019. The World Health Organization declared a public health emergency of international concern on January 30, 2020, and a global pandemic on March 11, 2020. As of April 28th, 2020, there had been over 2,900,000 cases reported worldwide, with over 200,000 deaths [2].



## 2.2 Theoretical Foundation

### 2.2.1 Interpersonal theories

Interpersonal theories tribute psychological difficulties emphasize social well-being, and the relationship and interactions with others. Psychological distress is describe as not adapting adequately during the pandemic of covid-19 which causes non satisfying interactional behavioural during the pandemic. Psychological distress is also recognized when assessing the well-being of person's different patterns of interpersonal relationships. Distress can be improved by using therapy, which improve on improving existing issues within relationships and guidance in order for people to achieve more satisfying relationship through learning of new interpersonal skills.

### 2.2.2 Traditional psychoanalytic theory

Traditional psychoanalytic models focus on pathology from an intrapsychic perspective. They give more attention on the role of insensible processes and defence mechanisms in the determination of both

normal and abnormal behaviour. They aware that the expression of a symptom in the present as an extension of past conflicts. Therefore, psychological distress may elaborate as the trial on how to cope with current difficulties using past childhood defence

mechanisms, which may seem improved and might not be suitable for the current situation.

### 2.2.3 Cognitive Model Theory

For the third model, the cognitive model, emphasize on mind processor. It deliberately focus on the acceptance level of information especially during the pandemic of covid-19, how people digest the information and making sense out of it which including impression, perception, language, memory, thoughts, and consciousness. They look at themselves as not worthy, inadequate, dysfunctional, not lovable, and inefficient. People tend to compare among each other and process information's in a negative way. The core value of this model is that, when a person started to have emotionally difficult, they start to exaggerated the available resources or evidence, therefore, they tend to be thinking negatively and easily being influence in vicious cycle.



Because of the rapid increase in the number of cases and deaths, many people have been suffering from psychological issues such as depression, anxiety, and stress [3]. The sudden change of lifestyle, environment, enforcement of physical distancing rules, restriction on social gathering, and the mandatory on wearing mask at all time has contributing to the psychological effect on the Malaysian population. These viruses can spread rapidly fast, and the risk are more likely defers among different sociodemographic base on their age, race, gender, marital status and underlying decease.

Thomas et al. in his article titled "Adapting to the impact of COVID-19 on mental health: an international perspective" published in July 2020 suggested that based on the early outbreak in China and previous pandemics, a significant mental health consequence on frontliners will ensue [4]. Many people find it hard to adapt to the new changes and rules which needed to be comply immediately which also led to an inconsistent reaction. These dangerous viruses which can spread rapidly fast left the government with no choice but to take an swift action in order for the country to control the growth of the cases as it has been life threatening. This virus not only affected the people, it has been affecting the global economy too.

An online survey conducted by Lance M McCracken et al. in Sweden reported significant symptoms in mental health, including depression, anxiety or insomnia. Majority exhibit more than one symptom and mainly affecting individuals with underlying health issue and of lower socioeconomic status [5].

Roy et al. (2020) suggested that the attributed by anxiety has affected people's mental health, depression, anxiety and insomnia caused by many undesirable lifestyle changes and the impact of misinformation (6). K Cosic et al. suggested an interesting statement. He suggested that the severity of the negative psycho-socio-economic impact differ between countries depending on each respective pre- pandemic, peri-pandemic and post- pandemic factors (7). B Bhattacharjee et al. in his study found that the elderly population, employed professionals, healthcare professionals, children and teenagers, past psychiatry disorder and individuals with family history of psychiatry disorder are at higher risk of having negative mental health impact from the Covid 19 pandemic [8].

M Almeida et al. looked into the impact of the pandemic on gender. She concluded that pregnant women, postpartum, miscarriage and domestic abused women are more susceptible to develop negative mental health impact due to the pandemic [9].



J Torales et al stated an alarming statement, suggesting this pandemic may result in long- lasting health problems, isolation and stigma if this negative mental health is not addressed properly [10]. The lack of access to information and the collective isolation that detainees continue to face in many countries, which preceded Covid-19 but have since worsened, have severe consequences for respect for the absolute prohibition of torture and other ill-treatment. In addition, the lack of transparency and isolation from families and the outside world are crucial risk factors for increased tension and violence in detention centres.

## 2.3 Empirical Research

A multicentre survey conducted by Shuai Liu et. al among 1563 medical personal reported the prevalence of depression to be 50.7%, anxiety 44.7%, insomnia 36.1% and stress related symptoms 73.4% during the COVID-19 outbreak [3]. Similar findings been reported by A.A. Alkhamees et al. based on a study conducted in Saudi Arabia showing that one- fourth of the 1160 participants experienced

moderate to severe psychological impact due to the pandemic [11]. N. Sharma et al. based on a study, the Indian female professionals were among the 537 that the mental health of 27.5% was moderately affected and 27% severely affected [12]. An international survey involving 9565 participants from 78 countries reported 25% exhibits symptoms of depression. 33% reporting high levels of boredom and nearly 50% claims they wasted a lot of time [13]. Carpiniello et al. in his article titled “Psychiatry during the Covid-19 pandemic: a survey on mental health departments in Italy” concluded that the imminent economic crisis due to the ongoing pandemic has led to a relevant reduction in the level of care for mental health resulting in a severe impact on the mental health of the population [14].

Within a study carried out on health professionals in Spain, Turkey, Serbia, the United States, Romania, Italy, and the United Kingdom, it was determined that the most affected group during the pandemic were those who were on the front line against COVID 19, especially nurses, who were characterized by stress, anxiety, Burnout Syndrome, depression and sleep disturbance (insomnia), more than other health professionals. Similarly, an association was found between being a health worker with less experience, a history of previous mental health disorders, or being single as characteristics that influence the aforementioned mental disorders (Danet, 2021).



A study documented that the health personnel who presented the highest levels of stress, depression, anxiety, and insomnia were the doctors over 36 years of age, who expressed their fear of becoming infected and infecting their environment since they lived with people with diseases chronic diseases, and also emphasized their lack of trust towards the population in general regarding compliance with social distancing and the application of hygienic measures (Karabulut et al., 2021).

In another study carried out on 1,422 health workers, it was specified that the risk variables associated with anxiety symptoms were more frequent in women, with shifts of 12 or 24 hours, and being worried that a person you live with may be infected. Additionally, the following probable protective factors were identified: being male, being separated, working in nursing homes or during the day, being a doctor, having a morning-afternoon rotating shift, and not being isolated due to COVID-19 (Luceño-Moreno et al., 2020).

A meta-analysis of studies conducted in China on health workers showed a high prevalence of psychiatric disorders, such as poor sleep quality, anxiety, depression, somatization, and symptoms of obsessive-compulsive disorder. However, young health workers (under 35 years of age) with a higher hospital workload in the face of COVID-19 reported more symptoms of anxiety. Likewise, the main concerns of health workers were infecting their colleagues or their families, the lack of personal protection measures, and medical violence (da Silva & Neto, 2021). In another study, similar findings were found and the fear of transmitting it to their patients. Another minor concern was providing care to an excessive number of patients. In addition, a statistically significant association was found between psychological dissociation and impact on social functions (Sharifi et al., 2021).

Predictive analyses showed that health personnel have a high risk of suffering from an acute stress disorder, not having access to protective equipment, infecting their relatives, and third-party fear of their relatives due to their work. Among other results, the following risk factors are described: female gender, working in an area with a high incidence of COVID-19 cases, and not feeling heard by their colleagues, relating these situations to their general state of health (Rodriguez-Menéndez et al., 2021).



In a systematic review with meta-analysis, it was shown that the psychological impact on health workers is more significant than in the general population when faced with additional stressors such as long working hours, shortage of supplies, precise indications and demands, measures of constant biosecurity, limited social contact, in addition to the permanent requirement of vigilance and concentration, causing them to experience higher levels of anxiety (Krishnamoorthy et al., 2020).

The fact that health personnel are responsible for the care of patients with COVID-19 without specific treatment or adequate support, and are also exposed to critical medical situations and death, makes them especially vulnerable to post-traumatic stress disorder.

On the other hand, a study carried out in Lombardy, Italy, a place considered one of the most affected by the COVID-19 pandemic, shows that post-traumatic stress disorder developed in health workers, highlighting a greater probability of receiving a diagnosis of this condition in vulnerable groups such as women, nurses, front-line workers with individuals with weakened mental health (Baldi et al., 2020).

Another study aimed to publicize the prevalence of suicidal thoughts and ideations (PIS) in health workers, reporting 8% in 5,450 respondents. However, it was shown that female workers, married and with children at home, were not likely to present PIS, unlike single workers, young people between 30 and 49 years old, who did present PIS, unlike those workers older than 50 years who did not present them. In addition, the perception of lack of communication, coordination, personnel, and supervision at work and the degree of financial stress were positively associated with PIS (Dhrisya et al., 2020).

Thanks to studies based on meta-analyses, it is known that the coronaviruses that cause epidemic outbreaks, such as Severe Acute Respiratory Syndrome (SARS) and Middle East Respiratory Syndrome (MERS), are related to neuropsychiatric disorders quite similar to those seen with SARS COV-2, such as depression, confusion, and insomnia, these being symptoms that are explained in part by neurotoxicity and the damage caused by these viruses. The novelty to emphasize in the COVID-19 disease is that the neuropsychiatric symptoms they cause are due to an overresponse of the immune system, more specifically to the neuro-inflammation caused by the cytokine storm. However, this is not the only factor in the game capable of explaining this disease's entire psychiatric and psychological spectrum. Stress, economic insecurity, uncertainty about the future, and anxiety also play a role. All of these aspects increase and strengthen the mental illnesses mentioned.



### 2.3.1 COVID-19

It is a disease whose etiological agent is SARS-COV-2, an RNA-type β-coronavirus, which has bats as a possible natural host. Among its virological characteristics, it presents a considerable affinity for Angiotensin-Converting Enzyme 2 (ACE2) receptors, which are found in various tissues of the human body, causing mild symptoms in 80% of cases reported in previous studies and being more susceptible to patients older than 65 years with comorbidities, such as diabetes mellitus, arterial hypertension, among others (Ali, 2020).

It is the state of well-being in which the individual copes with the usual stress of family and community life due to the person's capacities, which constitutes a fundamental part of public health. Therefore, health promotion and prevention of mental problems or disorders should not be separated from health

in general. Mental health is a fundamental part of public health due to the frequency of presentation of mental disorders, regardless of socioeconomic level or geographical area, representing a considerable economic and emotional cost for the person and their environment and coexisting with physical diseases of the individual.

Overall, all these data were consistent worldwide with individuals experiencing considerable psychological impact during the early stage of covid 19 outbreak period in terms of anxiety, depression and post traumatic symptoms [15].

## 2.4 Proposed Conceptual Framework

Conceptual framework of mental well-being, depression, anxiety and insomnia during COVID-19 pandemic, its risk aspects you may refer to the figure for recommendations resolution. The conceptual framework is illustrated in figure 3 below.

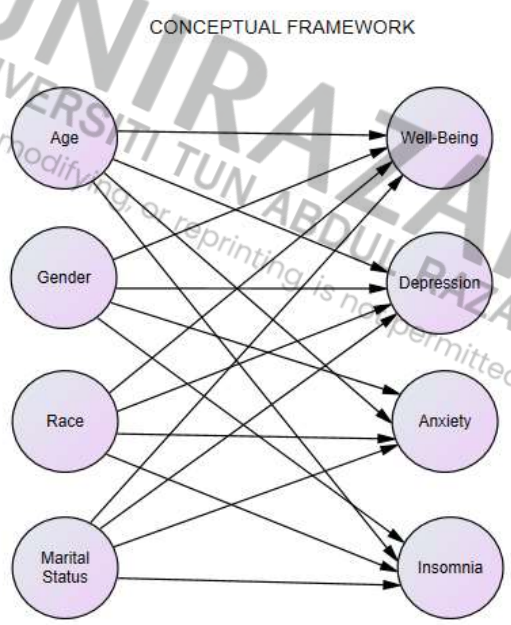




Figure 3 : Conceptual Framework of the research

## 2.5 Hypothesis Development

This study, we will be conducting a hypothesis testing mainly focusing on 4 elements as stated below which aligned with the research objective.

1. Age will influence well-being, during covid-19.
2. Age will influence depression during covid-19.

3. Age will influence anxiety during covid-19.
4. Age will influence insomnia during covid-19.
5. Race will influence well-being, during covid-19.
6. Race will influence depression during covid-19.
7. Race will influence anxiety during covid-19.
8. Race will influence insomnia during covid-19.
9. Gender will influence well-being, during covid-19.
10. Gender will influence depression during covid-19.
11. Gender will influence anxiety during covid-19.
12. Gender will influence insomnia during covid-19.
13. Marital Status will influence well-being, during covid-19.
14. Marital Status will influence depression during covid-19.
15. Marital Status will influence anxiety during covid-19.
16. Marital Status will influence insomnia during covid-19.



## 2.6 Summary

This virus has significant impacting the population in Malaysia during the beginning of the pandemic as it is a very dangerous and highly communicable threat to life where some category can be more significantly affected due to their age, gender, marital status and race. In general, Covid-19 pandemic has given a negative impact on mental health worldwide. Similarly, this impact has been attributed to be the cause of the alarming rise in suicide rates and distress calls in Malaysia. Depending on various pre- pandemic, peri-pandemic and post- pandemic factors, the degree of impact varies between different countries as suggested by K Cosic et al. Certain age group, gender, race or marital status are more at risk to develop this mental health impact. Long term health problems, isolation and stigma may result if this impact is not carefully addressed.

# CHAPTER 3: Research Methodology

## 3.1 Research Design

The current study is a cross-sectional observational online google form survey using the Warwick-Edinburgh Mental Well-Being scale (WEMWBS) with 14 questions on mental well-being, 9 survey question to assess depression (Participant Health (PHQ-9)), 7 survey questions on anxiety (Participant Health (GAD-7)) and 7 questions on insomnia (Participant Health (ISI)). This study we will be conducting a snowball sampling method which will be used for all data compilation. There will be a link of the online survey created by using google form and this study, snowball sampling method by circulated to participants via all types of social media platforms and messaging application such as email, WhatsApp, WeChat, line and Facebook to Malaysian citizen aged 21 and above.

The survey duration will take approximately 3 to 5 minutes and consist of 8 questions on demographical characters of the participants such as age, race, gender, states that they are currently living, marital status, education background, income and employment status of the participants. All 37 questions are related to their psychological health, depression, anxiety and insomnia questions. The WEMWBS was developed and tested by a group of researchers at the University of Edinburgh and Warwick with funding from NHS Scotland, Participant Health (PHQ-9), Participant Health (GAD-7) and Participant Health (ISI). These questionnaires were to assess the level of depression, self-report of participants' anxiety level, and the index level of insomnia. The psychological health questionnaires overall are used in this study to assess subjective well-being to assess Malaysians' adults from aged 21 and above.



The developers define mental well-being as a person's psychological functioning ability, life satisfaction, and ability to develop and maintain mutually beneficial relationships. All the psychological health such as mental well-being, depression, anxiety and insomnia are interrelated among each other, therefore, they are equally important to be asses. Psychological wellbeing includes the ability to maintain a sense of autonomy, self-acceptance, personal growth, purpose in life and self-esteem. Staying mentally healthy is more important than treating or preventing mental illness.

The WEMWBS is scored by adding the responses to each of the 14 test items on a 1 to 5 Likert scale (1 = None of the time to 5 = All of the time). They have grouped the characteristic of the scale selection

is based on strong review of scales of positive mental health validated for use with adults in the UK: technical report [29]. All of the questions are equally weighted. It is a self-administered scale. Scores range from a minimum of 14 to a maximum of 70 points. Higher scores mean higher levels of mental well-being. According the Warwick benchmark approach, a score of 41-44 is indicative of possible/ mild depression and a score of <41 is indicative of probable clinical depression.

As for Participant Health (PHQ-9), is to assess the level of depression from a validated self-administered via online survey form. The assessment with 9 questions in relates to depression and the cut-off score is 10, which were designed by clinicians. The measurement calculated base on their self-administered and understanding where 1 to 4 likert scale (1 = Not at all to 4 = Nearly everyday)

Participant Health (GAD-7) used to interpret the common anxiety symptoms for populations. The assessment and evaluation on the participants' depression level, mental well-being are also being taken into consideration in order for the study to interpret the convergent and divergent validity. The questionnaires for these assessment consume 7 questions in relate to their anxiety condition during the period mentioned, and the score cut-off at 10 has been identified. The measurement calculated base on their self-administered and understanding where 1 to 4 likert scale (1 = Not at all to 4 = Nearly everyday).



Participant Health (ISI) is The Insomnia Severity Index which conceived of seven questions. All the participants are require to complete the seven questions and answers must be base on the 2 weeks health condition of the individual and the score will be added up to get a total score. Study will refer to the 'Guidelines for Scoring/Interpretation' after the completion of the survey to see where the participants sleep difficulty fits. The score cut-off at 10, For participants who score less than 7, there were no clinically significant insomnia, participants who score between the range of 8–14, will falls under Subthreshold insomnia, whereas those who scores 15–21 has moderate severity on clinical insomnia and lastly if the participant score above 22, study shows that the participants might be facing severe clinical insomnia.

### 3.1.1 Participant and procedure

A population based using cross-sectional study to discover the Malaysian psychological effect during covid-19 pandemic. This questionnaire is designed for use in general population which comply to the study. Some of questionnaires may cause the participants to questions aspects of their lives which may be uncomfortable. This event will be conducted and open for participation between 25th Dec 2021 until 30th April 2022 using self-administered questionnaire, and participants are from age 21 to 55 years old through social media and messaging platform via google form distribution.

The google form was develop and data will be auto compiled using Microsoft excel base on submission by the participants. A number of sample size will be taken out to be processed and all participant has given their clear consent. Refer to table 1 for demographic characteristic by of the participants. The survey form also included about the objective of this study and all participants aware that this survey is based on voluntary, confidentiality and anonymous. They can choose not to participate at any point of time. No compensation was given to anyone who participated in this survey. All the questions created is to access each respective individuals and it has been sectionize in order to carry out the research and to get the result.



A population-based, cross-sectional study was conducted to determine how people responded to COVID-19. Multiple venues offered the confidential online survey to responders. To broaden the sample to older age groups and those with different sociodemographic characteristics, the survey was disseminated in the social media (WhatsApp, Wechat, Facebook, Twitter, etc.), The sample was widened. Most nations from whom COVID-19 data was collected have declared an emergency.

| Characteristics | |
|---|---|
| **Ethnicity** | **Marital Status** |
| Malay | Single |
| Chinese | Married / In a Relationship |
| Indian | Divorce / Seperated |
| Others | Widowed |
| **States** | **Education** |
| Johor | Presecondary |
| Kedah | Secondary |
| Kuala Lumpur | High School Diploma |
| Kelantan | Bachelor Degree |
| Labuan | Master Degree and above |
| Melaka | Others |
| N.Sembilan | **Income** |
| Penang | No Income |
| Pahang | RM1,500 and below |
| Putrajaya | RM1,501 - RM3,000 |
| Perak | RM3,001 - RM5,000 |
| Perlis | RM5,001 - RM7,500 |
| Sabah | RM7,501 - RM10,000 |
| Selangor | RM10,001 and above |
| Sarawak | **Occupational Status** |
| Terengganu | Student |
| **Gender** | Unemployed/Homemaker |
| Male | Working part time / Freelance |
| Female | Working full time / Self Employed |
| Prefer Not to Say | |
| **Age** | |
| 21-30 | |
| 31-40 | |
| 41-50 | |
| 51 and abv | |

Table 1: Demographic characteristic of the participants



The target sample size of 700 participants through a cross-sectional data will be compiled via online survey through fellow Malaysian aged 21 to 55 years old however 603 was collected base on the duration or timeline stated. The period of data collection was from 25th Dec 2021 to 30th April 2022 when the new cases still rapidly happening with a total of death reported with a total death of approximately more than 35,000 during that point of time. As mentioned earlier, the participations are voluntary, confidentiality and anonymous. Participant will not be informed on the results and each participant which participated in the online survey are not allow to submit multiple submission from this survey. Respondents will be required to sign in to Google before the participation of this online survey.

The criteria set were: Malaysian citizen aged 21 and above and the final sample included n participants. Figure 4 shows on a flow on tabulation for the final sample are being compiled. Questionnaires was distributed and more than 1000 Malaysia aged between 21 to 55 years old survey has been share out and 603 participants has been participating in the survey. We estimated 5% of participants did not qualify, incomplete and with missing data in the participation of the survey. We targeted more than 700 participate in the survey, however, 603 responded to the survey and we have 555 final sample size, the

participants' profile, 34 participants declare their occupational status, 14 participants did not complete the questionaire in relates to mental well-being, depression, anxiety and insomnia. Therefore, the total final sample size we had successfully participated in this survey is n = 555.

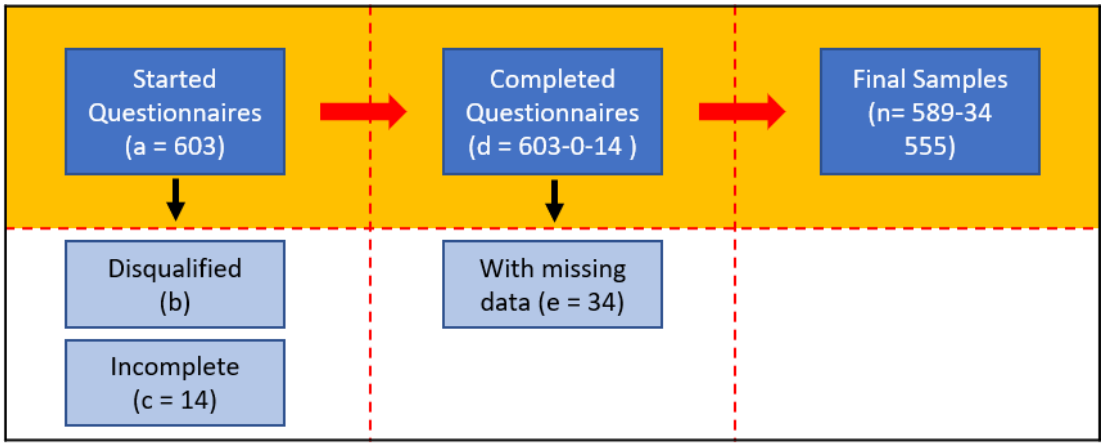


Figure 4 : Flow on tabulation for the final sample

Research design for this research paper is based on data collection. An online survey was share out via social media platform and mobile messaging application to Malaysian citizen aged above 21 years old, which is currently living and working in Malaysia. This will ensure that all data that has been collected can be used to make assumption are free from bias and neutral. It also allows to make opinion regards to the final evaluation and conclusion from multiple individuals from those who answer the survey form.



## 3.2 Study Population and Sampling Procedures

A cross sectional online survey was being distributed one month after the movement control restriction being uplifted when the movement control was being uplifted effective 1st Dec 2021. The snowball sampling methodology was used for all data compilation and all participants were informed and consent was granted before answering all the questionnaires set in a google form. We are targeting to compiled more than 700 samples size within the age range set however 603 participants responded. After excluding all those participants who is disqualified and who provided with incomplete form, the final sample size were 555. The targeted sample size is being calculated based on the estimated Malaysian population.

The total number of population information which can be found on reliable resources are limited. They provided the population age group between 15 to 64 years old is 22.7million. the average population per age (each year) will be = 22.7million/(64+1-15) = 22.7million/49 which will be 463.2k per year. Therefore, the approximate population for age range between 21 years old to 55 years old = 463.2k X 35 years will be 16.21million in total. Since in 2021, Malaysia population for aged 21 till 55 years old is 16.21million, in considering the 95% confidence interval, therefore the targeted minimum sample size will be 385. Study participants open for anyone from the public who is Malaysian aged above 21 years old who can literate and understand the survey questionnaire in English. The survey will takes approximately 3 to 5 minutes to complete. After the closing date, the data will then be extract and downloaded in excel format and sample size will be calculated. Snowball sampling technique was used to recruit the study participants.

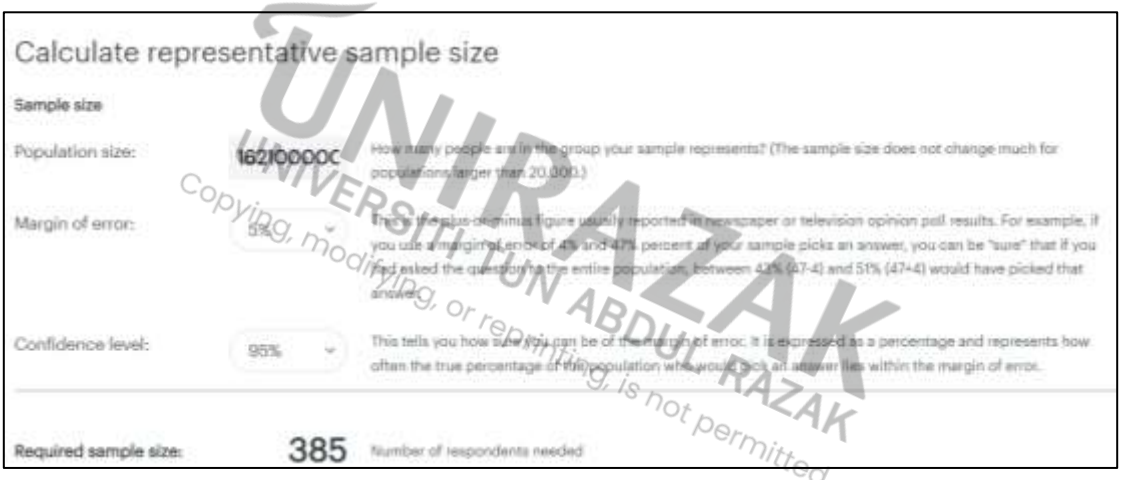



Figure 5 : Calculation of sample size

## 3.3 Data Collection Method

An online google form has been created for the study. All participants will acknowledge that the survey information provided by the participants is based on self-administered and this survey is based on voluntary, confidentiality and anonymous. The survey form has been segregated in 5 sections. Section A, all information's provided are demographical questions, such as race, gender, stated they are living, age, marital status, educational background, monthly income and occupational status. Section B conceive of 14 questions relates to their mental well-being during the pandemic, Part C where the assessment which consume 9 question to assess the participant depression level, Part D is to evaluated the participants level of anxiety and last part which is Part E is to determine the participants sleeping

issue. The experience which was being scaled are base on the past 14 days period. The participants must be Malaysian between the age group of 21 years old and above. The responses are being protected and remain anonymous. A link will be distributed to public and the link can be shared out via social media platform and all types of messaging applications. The questionnaire was developed and tested by group of researchers at the Universities of Edinburgh and Warwick with funding from NHS Scotland and its validated, Participant Health (PHQ-9), designed by clinicians, Participant Health (GAD-7) used to interpret the common anxiety symptoms for populations and Participant Health (ISI) is The Insomnia Severity Index to shows that the participants might be facing severe clinical insomnia.

### 3.4 Operationalization and Measurement

The socio demographical group of the study selection can be considered as the majority population which is generally the most affected by covid-19 pandemic and they are certain demographical group which will bring direct impact to social society. It also considers as the higher frequency of mental health, depression, anxiety and insomnia issues in adults. The objective of this paper is to describe and define the constructive mental well-being state at all angle and all participations is based on conceptual clarity.



The constructs were assessed using well-validated and well-established measures. Forward and reverse translation processes were used when measurements did not previously exist in a language. After a general agreement among the participants of this study, well-validated predictors and outcomes, as well as questions evaluating COVID-19 associated features, were chosen.

### 3.5 Study and Validation Measurement

In total of thirty seven questions in total were chosen to measure the participants base on subjective judgement which the scale that has been constructed and is sufficient to evaluate participant's mental well-being, depression, anxiety, and insomnia such as emotional stability and general life satisfaction during this pandemic of covid-19. It will also enable the study to justify on the composite score, and then, a statistical analysis will be conducted which is called factor analysis study. The scales are being construct which co-related to other variables as this is perform to measure the individual mental well-being during the pandemic. The study questionnaires covering the expressions, emotional in self and others, general happiness and decision making in leading a more stable mental health. This instrument

was used to measure and screen the overall presence and level of depression and is an easy tool to be used in a survey.

### 3.5.1 Independent Variables

The sociodemographic group is the independent variable for this study. In this study, we selected 4 main demographic group to analyse the data which is age, gender, marital status and race. The participants are requiring to select the scale from 1 to 5 for mental well being, where 1 being the lowest representing none of the time, and 5 being all of the time. 0-3 for the severity level of depression and anxiety, 0 for not at all, 3 is the highest severity. As for insomnia, 0 being very satisfied with their sleeping pattern, 4 are much worried on their sleeping patterns which might be affecting their health. The scoring sequence is based on categorical and psychometric which evaluate how well is their mental health during this pandemic period. The scale will be based on hypothesis test where the score reflects their actual mental health level during this pandemic.

### 3.5.2 Dependent Variable

In this study, the depression, anxiety and insomnia or the mental well-being level has been the dependant variable which we will be conducted the hypothesis test.



This study contains 14 question which measure the past 14 days of participant's experience on the impact of psychological functioning during Covid-19. It has been developed according to the Warwick-Edinburgh Mental Well-Being Scale. Participants are supposing to answer question regards to their life-satisfaction and the ability to maintain mutual benefiting relationship. The measurement score is being rate based on 1 to 5. (1 = none all the time, 5 being all the time). Refer to Figure 3 of Conceptual Framework for the relationship between different variables of the study.

As for Participant Health (PHQ-9), is to assess the level of depression from a validated self-administered via online survey form. The assessment with 9 questions in relates to depression and the cut-off score is 10, which were designed by clinicians. The measurement calculated base on their self-administered and understanding where 1 to 4 likert scale (1 = Not at all to 4 = Nearly everyday)

Participant Health (GAD-7) used to interpret the common anxiety symptoms for populations. The assessment and evaluation on the participants' depression level, mental well-being are also being taken into consideration in order for the study to interpret the convergent and divergent validity. The questionnaires for these assessment consume 7 questions in relate to their anxiety condition during the period mentioned, and the score cut-off at 10 has been identified. The measurement calculated base on their self-administered and understanding where 1 to 4 likert scale (1 = Not at all to 4 = Nearly everyday).

Participant Health (ISI) is The Insomnia Severity Index which conceived of seven questions. All the participants are require to complete the seven questions and answers must be base on the 2 weeks health condition of the individual and the score will be added up to get a total score. Study will refer to the 'Guidelines for Scoring/Interpretation' after the completion of the survey to see where the participants sleep difficulty fits. The score cut-off at 10, For participants who score less than 7, there were no clinically significant insomnia, participants who score between the range of 8–14, will falls under Subthreshold insomnia, whereas those who scores 15–21 has moderate severity on clinical insomnia and lastly if the participant score above 22, study shows that the participants might be facing severe clinical insomnia.



### 3.6 Data Analysis Techniques

All participants information were gathered will be extracted via excel and the online google form survey and all responses were being evaluated via scaling method. The data that has been extracted out will be analysed by using SPSS version 25 (Statistical Package for the Social Sciences) system. For demographic information, it will be performed using descriptive statistic. The wellbeing scale based on their feeling and experience in the past 14 days or 2 weeks are from 1-5, 1 they are not affected all the time, and 5 being affected all the time. This study, Multi-collinearity in Regression models will be used as the independent variables are highly correlated. This model is used to evaluate if demographic variable such as race, age, state and gender of the participants will affect participants well-being, depression, anxiety and insomnia during covid-19 In this study, will be performing MANOVA as it is use to test multiple dependent variables in this study. This study is to examine the difference between

groups and also the difference between multiple dependent variables. The study also using reliability test to ensure that high reliability as it provides consistent measure overtime where the result is reliable. As for depression from a validated self-administered via online survey form. The assessment with 9 questions in relates to depression and the cut-off score is 10, which were designed by clinicians. The measurement calculated base on their self-administered and understanding where 1 to 4 Likert scale (1 = Not at all to 4 = Nearly everyday). For assessment of anxiety level, 7 questions in relate to their anxiety condition during the period mentioned, and the score cut-off at 10 has been identified. The measurement calculated base on their self-administered and understanding where 1 to 4 Likert scale (1 = Not at all to 4 = Nearly every day). The Insomnia Severity Index which conceived of seven questions base on the 2 weeks health condition of the individual and the score will be added up to get a total score. Study will refer to the 'Guidelines for Scoring/Interpretation' after the completion of the survey to see where the participants sleep difficulty fits. The score cut-off at 10, For participants who score less than 7, there were no clinically significant insomnia, participants who score between the range of 8–14, will falls under Subthreshold insomnia, whereas those who scores 15–21 has moderate severity on clinical insomnia and lastly if the participant score above 22, study shows that the participants might be facing severe clinical insomnia.



### 3.6.1 Descriptive Analysis Techniques

Participants were n = 505 people from various different age group. Refer to table 3 which shows the demographic characteristic of the target age group from the population. There were 175 participants with 31.5% were from the age group 21-30 years old, 193 participants with 34.8% are from 31-40 years old, 131 participants with 23.6% of the participants from 41-50 years old and remaining of 56 participants with 10.1% are from the age group 51 to 55 years old. 234 participants with 42.2% of them are Malay, 203 participants with 36.6% were Chinese, 96 participants with 17.3% of them are Indian and 22 participants with 4.0% were from other races. As for by gender, 279 participants with 50.3% were female, 273 participants with 49.2% were male and 3 participants with 0.5% choose not to reveal their gender. There were small population of the participants has no income, which 40 out of 555 participants with 7.2% of them was not employed can be due to various reason, 34 participants with 6.1% were earning less than RM1,500.00, 66 participants with 11.9% was earning range between RM1,501 to RM3,000, 151 participants with 27.2% of the participants is earning range between

RM3,001 to RM5,000, 92 participants with 16.6% of them is earning RM5,001 to RM7,500, 80 participants with 14.4% is earning range between RM7,501 to RM10,000 and the remaining 92 participants with 16.6% are earning more than RM10,000. Based on marital status of the participants, 201 of the participants declare single with 36.2%, 179 participants with 32.3% are married, 146 with 26.3% of the participants is divorced, and remaining of 29 participants with 5.2% were widows.

Overall, refer to the table 2 below is showing the assessment score for well-being (M = 45.2, [SD = 11.8]), for depression (M = 6.7, [SD = 4.9]), for anxiety (M = 4.8, [SD = 4.8), and for insomnia (M = 6.3, [SD = 7.2]).

**Descriptive Statistics**

| | N | Minimum | Maximum | Mean | Std. Deviation |
|---|---|---|---|---|---|
| A | 555 | 14.00 | 70.00 | 45.2342 | 11.78275 |
| B | 555 | .00 | 27.00 | 6.6595 | 4.94165 |
| C | 555 | .00 | 21.00 | 4.7964 | 4.79696 |
| D | 555 | .00 | 28.00 | 6.3459 | 7.19752 |
| Valid N (listwise) | 555 | | | | |

Table 2 : Descriptive Statistic by Well-being, Depression, Anxiety and Insomnia



### 3.6.2 Inferential Analysis Techniques

This study, inferential analysing techniques will be conducted to determine appropriate sample sizes for studies will be the foundation of this study design. The current sample size is sufficient to conclude results and findings which we are expecting that the magnitude is less than 0.80. Inferential analysis is to identify the effect sample size of an expected result which may have inherent risk. There are possible that no statistically significant difference was found between the age group. This can also minimize the error which might require a more bigger sample size.

## 3.7 Summary

This chapter is basically to analyse further on the significant level of effect on the mental health, depression, anxiety, and insomnia of adults based on demographic group. Various methodology will be use to study the mental health, depression, anxiety and insomnia level by the demographical group such as MANOVA and multicollinearity in regression will be used. With the demographical information which enable this study to measure by using different methods in order to identify which demographical group that has significant effect on mental health during to covid-19.

# CHAPTER 4 RESULTS AND DISCUSSION

## 4.1 Introduction

A cross-sectional online form of survey carried out to gather data via google form with fourteen online questionnaires from Warwick - Edinburgh Mental Well- Being scale (WEMWBS), nine questionnaires for Participant Health (PHQ-9), seven questionnaires for Participant Health (GAD-7) and seven questionnaires for Participant Health (ISI). These questionnaires were to assess the level of depression, self-report of participants' anxiety level, and the index level of insomnia. The survey was shared via social media. A total of 603 individuals *participated* in the study with 14 survey form was found incomplete and 34 of the survey was having missing data. Data collection from date 25th Dec 2021 to 30th April 2022. This event was conducted and open for participation between the date mentioned using self-administered questionnaire, and participants are from age 21 and above through social media and messaging platform via google form distribution.

## 4.2 Descriptive Analysis

For this study, we include constructive tables, statistical table, which conceive of the significant level, standard deviation, and most of the tabulation relay to the selected demographic group.

Refer to Table 3 : Warwick Mental well Being score by age group (n = 555). The participants age between 21 and above (M = 45.2, [SD = 11.8]), aged 21-30 years old (M = 43.7, [SD = 11.6]), aged 31-40 (M=46.7, [SD = 11.2]), 41-50 years old (M = 46.9, [SD = 10.9]), and 51 years and above (M = 40.9, [SD = 14.3]). Most of the participants was not affected mentally except for participants from aged 51 and above. By race, Malay participants (M = 44.0, [SD11.9]), Chinese participants (M = 46.5, [SD = 11.6]), Indian participants (M = 45.8, [SD11.5]) and other races participants (M = 22.0, [SD = 13.0]). By gender, male participants (M = 45.8, [SD = 12.2]) and female participants (M = 44.7, [SD 11.4]). By marital status, participant who declared single (M = 46.4, [SD = 11.6]), married participants (M = 45.4, [SD = 11.0]), divorced participants (M = 44.0, [SD = 12.6] and widowed participants (M = 42.3, [2.9]). For PHQ assessment which tested on participants depression level, 21.6% (n = 114), assessment for anxiety severity level (GAD), 12.1% (n = 67) and insomnia (ISI) which tested on participants insomnia severity 15.3% (n = 85). For race, gender and marital status, there were no statistical significant result shown on the psychological effect during pandemic of Covid-19. Refer table 17.

### 4.2.1 Demographic

Information about participants' age, gender, place of residence, working status, education, income, marital status, race, educational background, and occupational status were collected. Refer to table 3 for participants demographic characteristic.

| Characteristics | | n | % |
|---|---|---|---|
| **Ethnicity** | | | |
| Malay | 1 | 234 | 42.2% |
| Chinese | 2 | 203 | 36.6% |
| Indian | 3 | 96 | 17.3% |
| Others | 4 | 22 | 4.0% |
| **States** | | | |
| Johor | | 31 | 5.6% |
| Kedah | | 20 | 3.6% |
| Kuala Lumpur | | 125 | 22.5% |
| Kelantan | | 25 | 4.5% |
| Labuan | | 1 | 0.2% |
| Melaka | | 43 | 7.7% |
| N.Sembilan | | 33 | 5.9% |
| Penang | | 28 | 5.0% |
| Pahang | | 32 | 5.8% |
| Putrajaya | | 8 | 1.4% |
| Perak | | 30 | 5.4% |
| Perlis | | 23 | 4.1% |
| Sabah | | 13 | 2.3% |
| Selangor | | 109 | 19.6% |
| Sarawak | | 14 | 2.5% |
| Terengganu | | 20 | 3.6% |
| **Gender** | | | |
| Male | 1 | 273 | 49.2% |
| Female | 2 | 279 | 50.3% |
| Prefer Not to Say | 3 | 3 | 0.5% |
| **Age** | | | |
| 21-30 | 1 | 175 | 31.5% |
| 31-40 | 2 | 193 | 34.8% |
| 41-50 | 3 | 131 | 23.6% |
| 51 and abv | 4 | 56 | 10.1% |
| **Marital Status** | | | |
| Single | 1 | 201 | 36.2% |
| Married / In a Relationship | 2 | 179 | 32.3% |
| Divorce / Seperated | 3 | 146 | 26.3% |
| Widowed | 4 | 29 | 5.2% |
| **Education** | | | |
| Presecondary | 1 | 24 | 4.3% |
| Secondary | 2 | 157 | 28.3% |
| High School Diploma | 3 | 180 | 32.4% |
| Bachelor Degree | 4 | 164 | 29.5% |
| Master Degree and above | 5 | 20 | 3.6% |
| Others | 6 | 10 | 1.8% |
| **Income** | | | |
| No Income | 1 | 40 | 7.2% |
| RM1,500 and below | 2 | 34 | 6.1% |
| RM1,501 - RM3,000 | 3 | 66 | 11.9% |
| RM3,001 - RM5,000 | 4 | 151 | 27.2% |
| RM5,001 - RM7,500 | 5 | 92 | 16.6% |
| RM7,501 - RM10,000 | 6 | 80 | 14.4% |
| RM10,001 and above | 7 | 92 | 16.6% |
| **Occupational Status** | | | |
| Student | 1 | 14 | 2.5% |
| Unemployed/Homemaker | 2 | 31 | 5.6% |
| Working part time / Freelance | 3 | 81 | 14.6% |
| Working full time / Self Employed | 4 | 429 | 77.3% |

Table 3 : Demographic characteristics of the participants (N= 505).



Table 3 shows the demographic information of the participants. Ethnicity of the study participants can be divided into Malay (42.2% study participants belonged to this ethnicity), Chinese (with percentage of 36.6% out of total 100% study participants), Indian (17.3% of study participants) and others (4%). The age of the participants ranged from 18 to 51 and above years old. 31.2% (n = 175) of the study participants were between the ages of 21 and 30, 34.8% (n = 194) study participants were between the ages of 31 and 40, whereas, 23.6% (n = 131) between the ages of 41 and 50, and remaining 10.9% (n = 56) study participants reported to have age of 51 and above. Study participants belonged to 16 different states including Selangor (19.6%), Kuala Lumpur (22.5%), Melaka (7.7%), Negeri Sembilan (5.9%), Johor (5.6%), Pahang (5.8%), Perak (5.4%), Penang (5%), Kelantan (4.5%), Terengganu (3.6%), Perlis (4.1%), Sabah (2.3%), Sarawak (2.5%), Labuan (.2%), Putrajaya (1.4%) and Kedah (3.6).

49.2% of the study participants were male. 50.3% of the study participants where female and remaining .5% opted for “prefer not to say.”

16.2.1.1MANOVA Test

In this study, will be performing MANOVA as it is use to test multiple dependent variables in this study. This study is to examine the difference between groups and also the difference between multiple dependent variables.

**By Age Group.**

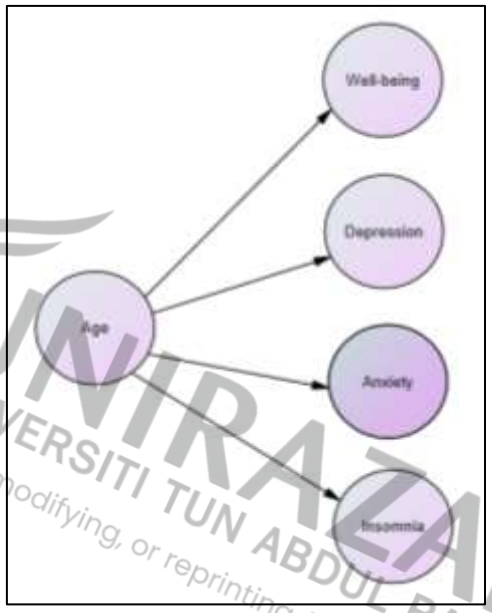




Figure 6 : depicts the use of MANOVA. Age groups are compared on mental well-being, depression, anxiety and insomnia

Figure shows that no significant difference was seen for the well-being, depression, anxiety and insomnia across the age of study participants.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .060[a] | .004 | -.004 | .97213 |

a. Predictors: (Constant), D, A, C, B

b. Dependent Variable: Age

Table 4 : Model Summary for Dependent Variable by Age

R square represent the proportion of variance the dependent variables that can be explained by age. This means it is a number that can interpret the changes on the dependent variable influence by age. 0.4% of the variance for dependent variable which is the assessment of participants well-being, depression, anxiety and insomnia explained by the age.

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.895 | 4 | .474 | .501 | .735[b] |
| | Residual | 519.774 | 550 | .945 | | |
| | Total | 521.668 | 554 | | | |

a. Dependent Variable: Age

b. Predictors: (Constant), D, A, C, B

Table 5 : MANOVA Test Table – By Age group on Well-being, Depression, Anxiety and Insomnia

The F in ANOVA table above is test if the regression model is a not a good sets of data. The table shows that the independent variables significantly predict that the dependent variable, F(4, 550) = 0.501, p > .0001, which show that this regression model is not a good sets of data. Findings of the table for the MANOVA test shows that no significant difference across depression, wellbeing, anxiety and insomnia (P=.735) is observed in study participants across different age groups.



**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | 1.889 | .269 | | 7.011 | .000 | | |
| | A | .003 | .005 | .042 | .749 | .454 | .566 | 1.766 |
| | B | .016 | .012 | .083 | 1.309 | .191 | .454 | 2.204 |
| | C | -.010 | .012 | -.050 | -.874 | .383 | .548 | 1.825 |
| | D | .003 | .007 | .019 | .355 | .723 | .627 | 1.594 |

a. Dependent Variable: Age

Table 6 : Coefficient Table – By Age group on Well-being, Depression, Anxiety and Insomnia

Base on the coefficient table above, the collinearity tolerance statistic, VIF value is 1.766, for well-being, 2.204 for depression, 1.925 for anxiety, and 1.594 for insomnia. The overall value for VIF is less than 10. Therefore, are seen as an indicator for no problem with multicollinearity. The tolerance

are the inverse of the variance inflation factor. Findings of the table shows that impact on age group of Well-being, Depression, Anxiety and Insomnia is non-significant. Furthermore, for the “C” the prediction is in negative direction whereas for remaining three variables it is in positive direction.

**By Gender**

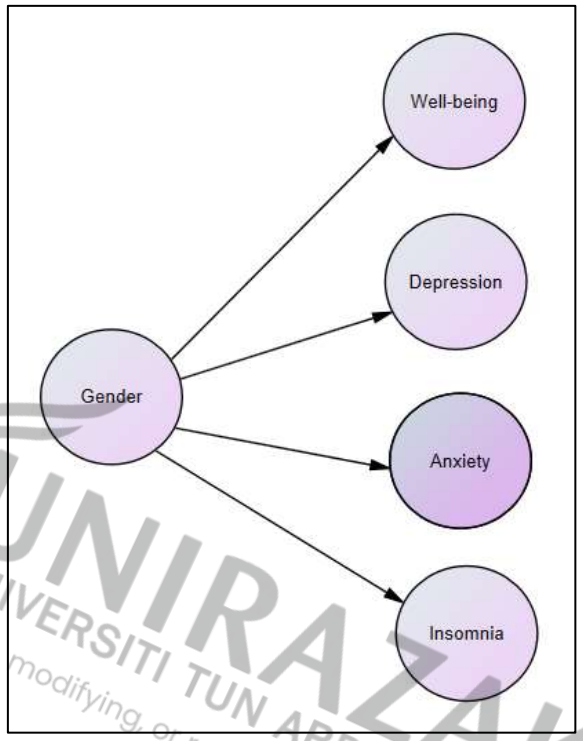




Figure 7 : depicts the use of MANOVA. Gender groups are compared on mental well-being, depression, anxiety and insomnia

Figure shows that no significant difference was seen for the well-being, depression, anxiety and insomnia across the gender of study participants.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .102[a] | .010 | .003 | .51016 |

a. Predictors: (Constant), D, A, C, B

b. Dependent Variable: Gender

Table 7 : Model Summary for Dependent Variable by Gender

R square represent the proportion of variance the dependent variables that can be explained by gender. This means it is a number that can interpret the changes on the dependent variable influence by gender.

1.0% of the variance for dependent variable which is the assessment of participants well-being, depression, anxiety and insomnia explained by the gender.

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 1.506 | 4 | .377 | 1.447 | .217[b] |
| | Residual | 143.142 | 550 | .260 | | |
| | Total | 144.649 | 554 | | | |

a. Dependent Variable: Gender

b. Predictors: (Constant), D, A, C, B

Table 8 : MANOVA Test Table – By Gender group on Well-being, Depression, Anxiety and Insomnia

The F in ANOVA table above is test if the regression model is not a good sets of data. The table shows that the independent variables significantly predict that the dependent variable, F(4, 550) = 0.377, p > .0001, which show that this regression model is not a good sets of data. Findings of the table for the MANOVA test shows that no significant difference across depression, wellbeing, anxiety and insomnia (P=.217) is observed in study participant across gender differences.



**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | 1.769 | .141 | | 12.510 | .000 | | |
| | A | -.004 | .002 | -.100 | -1.772 | .077 | .566 | 1.766 |
| | B | -.003 | .007 | -.030 | -.474 | .636 | .454 | 2.204 |
| | C | -.009 | .006 | -.086 | -1.509 | .132 | .548 | 1.825 |
| | D | .001 | .004 | .012 | .221 | .825 | .627 | 1.594 |

a. Dependent Variable: Gender

Table 9 : Coefficient Table – By Gender group on Well-being, Depression, Anxiety and Insomnia

Base on the coefficient table above, the collinearity tolerance statistic, VIF value is 1.766, for well-being, 2.204 for depression, 1.925 for anxiety, and 1.594 for insomnia. The overall value for VIF is less than 10. Therefore, are seen as an indicator for no problem with multicollinearity. The tolerance are the inverse of the variance inflation factor. Findings of the table shows that impact on gender of Well-being, Depression, Anxiety and Insomnia is non-significant. Furthermore, for the “D” the prediction is in positive direction whereas for remaining three variables it is in negative direction.

**By Race**

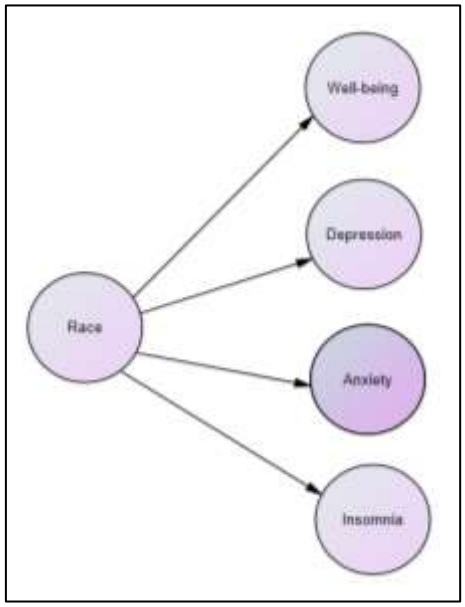


Figure 8 : depicts the use of MANOVA. Race groups are compared on mental well-being, depression, anxiety and insomnia

Figure shows that no significant difference was seen for the well-being, depression, anxiety and insomnia across the race of study participants.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .114[a] | .013 | .006 | .84942 |

a. Predictors: (Constant), D, A, C, B

b. Dependent Variable: Race

Table 10 : Model Summary for Dependent Variable by Race

R square represent the proportion of variance the dependent variables that can be explained by race. This means it is a number that can interpret the changes on the dependent variable influence by race. 1.3% of the variance for dependent variable which is the assessment of participants well-being, depression, anxiety and insomnia explained by the race.

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 5.249 | 4 | 1.312 | 1.819 | .124[b] |
| | Residual | 396.830 | 550 | .722 | | |
| | Total | 402.079 | 554 | | | |

a. Dependent Variable: Race

b. Predictors: (Constant), D, A, C, B

Table 11 : MANOVA Test Table – By Race group on Well-being, Depression, Anxiety and Insomnia

The F in ANOVA table above is test if the regression model is not a good sets of data. The table shows that the independent variables significantly predict that the dependent variable, F(4, 550) = 1.312, p > .0001, which show that this regression model is not a good sets of data. Findings of the table for the MANOVA test shows that no significant difference across depression, wellbeing, anxiety and insomnia (P=.124) is observed in study participant across different races.

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | 1.264 | .235 | | 5.367 | .000 | | |
| | A | .009 | .004 | .128 | 2.275 | .023 | .566 | 1.766 |
| | B | .016 | .011 | .091 | 1.446 | .149 | .454 | 2.204 |
| | C | .011 | .010 | .063 | 1.100 | .272 | .548 | 1.825 |
| | D | -.002 | .006 | -.013 | -.246 | .806 | .627 | 1.594 |

a. Dependent Variable: Race



Table 12 : Coefficient Table – By Race group on Well-being, Depression, Anxiety and Insomnia

Base on the coefficient table above, the collinearity tolerance statistic, VIF value is 1.766, for well-being, 2.204 for depression, 1.925 for anxiety, and 1.594 for insomnia. The overall value for VIF is less than 10. Therefore, are seen as an indicator for no problem with multicollinearity. The tolerance are the inverse of the variance inflation factor. Findings of the table shows that impact on race of Well-being, Depression, Anxiety and Insomnia is non-significant. Furthermore, for the “D” the prediction is in negative direction whereas for remaining three variables it is in positive direction.

**By Marital Status**

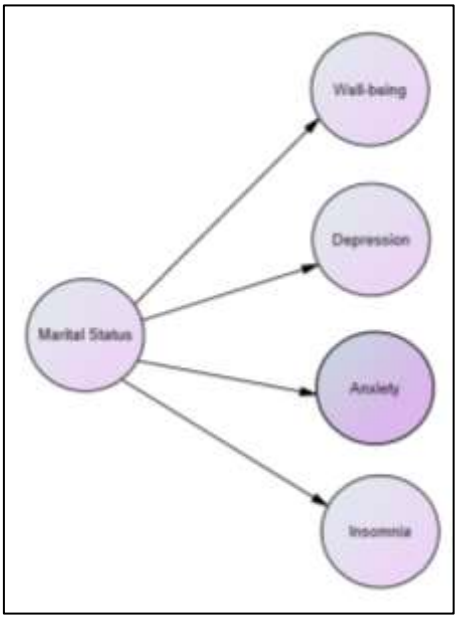


Figure 9 : depicts the use of MANOVA. Marital Status groups are compared on mental well-being, depression, anxiety and insomnia

Figure shows that no significant difference was seen for the well-being, depression, anxiety and insomnia across the race of study participants.

**Model Summary[b]**

| Model | R | R Square | Adjusted R Square | Std. Error of the Estimate |
|---|---|---|---|---|
| 1 | .120[a] | .014 | .007 | .91089 |

a. Predictors: (Constant), D, A, C, B

b. Dependent Variable: Marital

Table 13 : Model Summary for Dependent Variable by Race

R square represent the proportion of variance the dependent variables that can be explained by marital status. This means it is a number that can interpret the changes on the dependent variable influence by marital status. 1.4% of the variance for dependent variable which is the assessment of participants well-being, depression, anxiety and insomnia explained by the marital status.

**ANOVA[a]**

| Model | | Sum of Squares | df | Mean Square | F | Sig. |
|---|---|---|---|---|---|---|
| 1 | Regression | 6.640 | 4 | 1.660 | 2.001 | .093[b] |
| | Residual | 456.343 | 550 | .830 | | |
| | Total | 462.984 | 554 | | | |

a. Dependent Variable: Marital

b. Predictors: (Constant), D, A, C, B

Table 14 : MANOVA Test Table – By Marital Status group on Well-being, Depression, Anxiety and Insomnia

The F in ANOVA table above is test if the regression model is not a good set of data. The table shows that the independent variables significantly predict that the dependent variable, F(4, 550) = 1.660, p > .0001, which show that this regression model is not a good sets of data. Findings of the table for the MANOVA test shows that no significant difference across depression, wellbeing, anxiety and insomnia (P=.093) is observed in study participant across marital status.

**Coefficients[a]**

| Model | | Unstandardized Coefficients | | Standardized Coefficients | | | Collinearity Statistics | |
|---|---|---|---|---|---|---|---|---|
| | | B | Std. Error | Beta | t | Sig. | Tolerance | VIF |
| 1 | (Constant) | 2.318 | .252 | | 9.181 | .000 | | |
| | A | -.007 | .004 | -.092 | -1.634 | .103 | .566 | 1.766 |
| | B | .005 | .012 | .030 | .472 | .637 | .454 | 2.204 |
| | C | .008 | .011 | .043 | .749 | .454 | .548 | 1.825 |
| | D | -.010 | .007 | -.081 | -1.522 | .129 | .627 | 1.594 |

a. Dependent Variable: Marital



Table 15 : Coefficient Table – By Marital Status group on Well-being, Depression, Anxiety and Insomnia

Base on the coefficient table above, the collinearity tolerance statistic, VIF value is 1.766, for well-being, 2.204 for depression, 1.925 for anxiety, and 1.594 for insomnia. The overall value for VIF is less than 10. Therefore, are seen as an indicator for no problem with multicollinearity. The tolerance is the inverse of the variance inflation factor. Findings of the table shows that impact on marital status of Well-being, Depression, Anxiety and Insomnia is non-significant. Furthermore, for the “D and A” the non-significant prediction is in negative direction whereas for remaining two variables it is in positive direction.

### 4.2.2 Multivariate analyses

#### 4.2.2.1 Reliability Test

The study using reliability test to ensure that high reliability as it provides consistent measure overtime where the result is reliable. Nunnally, J. C., & Bernstein, I. H. mentioned that if the Cronbach's alpha is >0.7, the analysis is acceptable.

| Cronbach's alpha | Internal consistency |
|---|---|
| $\alpha \geq 0.9$ | Excellent |
| $0.9 > \alpha \geq 0.8$ | Good |
| $0.8 > \alpha \geq 0.7$ | Acceptable |
| $0.7 > \alpha \geq 0.6$ | Questionable |
| $0.6 > \alpha \geq 0.5$ | Poor |
| $0.5 > \alpha$ | Unacceptable |

Figure 10 : A rule of thumb for interpreting alpha

##### 4.2.2.1.2 Mental Well-Being

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .945 | 14 |

Table 16 : The reliability score for mental well-being

The mean (standard deviation) of the Warwick Mental well Being score among the 555 participants is 45.2 (11.8).

| **Variables** | WEMWBS score, mean (SD) |
|---|---|
| | 45.2 (11.8) |
| **Ethnicity** | |
| Malay | 44.0 (11.9) |
| Chinese | 46.5 (11.6) |
| Indian | 45.8 (11.5) |
| Others | 22.0 (13.0) |
| **Gender** | |
| Male | 45.8 (12.2) |
| Female | 44.7 (11.4) |
| **Age** | |
| 21-30 | 43.7 (11.6) |
| 31-40 | 46.7 (11.3) |
| 41-50 | 46.9 (10.9) |
| 51 and abv | 40.9 (14.3) |
| **Marital Status** | |
| Single | 46.4 (11.6) |
| Married / In a Relationship | 45.4 (11.0) |
| Divorce / Seperated | 44.0 (12.6) |
| Widowed | 42.3 (12.9) |

Table 17 : Warwick Mental well Being score (n = 555)

#### 4.2.2.1.2 Depression.

For assessing participant depression level, (PHQ-9) which conceive of 9- scale based questionnaire on the diagnostic criteria. The PHQ-9 enable research to examine the depressiveness level and at the same time to evaluate the severity of the depression. The question number 9 evaluate the suicidal thinking. The score range for PHQ-9 is between 0 to 27. PHQ-9 represent sufficient reliability and validity. Based on the cut-off points suggested by the article [5] for mild, moderate, moderately severe, and severe depression are 5, 10, 15, and 20, relatively.

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .789 | 9 |

Table 18 : The reliability score for Depression

| Type | Frequency (Percentage) |
|---|---|
| None (0-5) | 257 (46.3) |
| Mild (6-10) | 184 (33.2) |
| Moderate (11-15) | 91 (16.4) |
| Moderately severe (16-20) | 17 (3.1) |
| Severe (21 and above) | 6 (1.1) |

Table 19 : Number of Participants based on Depression Severity Level.



Multivariate analysis for Depression

| Characteristic | B | Sig. | Exp (B) | 95% C.I. for EXP (B) Lower | Upper |
|---|---|---|---|---|---|
| **Ethinicity** | | | | | |
| Malay | | 0.252 | | | |
| Chinese | 0.956 | 0.058 | 2.600 | 0.970 | 6.971 |
| Indian | 0.204 | 0.777 | 1.226 | 0.300 | 5.004 |
| Others | 0.593 | 0.591 | 1.810 | 0.208 | 15.748 |
| **Gender** | | | | | |
| Male | -0.113 | 0.790 | 0.893 | 0.387 | 2.059 |
| Female | | 0.965 | | | |
| **Age** | | | | | |
| 21-30 | | 0.616 | | | |
| 31-40 | -0.261 | 0.645 | 0.770 | 0.254 | 2.337 |
| 41-50 | 0.141 | 0.804 | 1.152 | 0.378 | 3.512 |
| 51 and above | 0.613 | 0.343 | 1.846 | 0.520 | 6.556 |
| **Marital Status** | | | | | |
| Single | | 0.191 | | | |
| Married / In a Relationship | -0.457 | 0.472 | 0.633 | 0.182 | 2.201 |
| Divorced | 0.712 | 0.159 | 2.038 | 0.757 | 5.487 |
| Widowed | 0.719 | 0.385 | 2.053 | 0.405 | 10.397 |

Table 20 Multivariate analysis for Depression

Base on the table 19, there are no significant different between the groups. There are no different between the demographical group across different level. Overall, the hypothesis is rejected. This study accepts the hypothesis null as the significant value is >0.05.

#### 4.2.2.1.3 Anxiety

The General Anxiety Disorder-7 (GAD-7) is the most common assessment which contain of seven anxiety scale which has independent effects and it has been implemented as a tools to assess participants' for General Anxiety Disorder. It has been popularly used as a measure of general anxiety symptoms across various settings and populations. The scores for GAD-7 range between 0 to 21 and a cut-off score of 10 has been identified. GAD-7 has a solid measurement property generally popular in measuring for large population. Prescriptive data has been provided for the general population showed that approximately 12% of subjects had GAD-7 scores of 10 or greater, and 1% had GAD-7 scores of 20 or greater.



**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .863 | 7 |

Table 21 : The reliability score for Anxiety

| Type | Frequency (Percentage) |
|---|---|
| 0-10 | 488 (87.9) |
| 11 - 20 | 61 (11.0) |
| 21 and above | 6 (1.1) |

Table 22 : Number of Participants based on Anxiety Severity Level.

| Characteristic (GAD) | B | Exp (B) | 95% C.I. for EXP (B) | | Sig. |
|---|---|---|---|---|---|
| | | | Lower | Upper | |
| **Ethinicity** | | | | | |
| Malay | | | | | 0.723 |
| Chinese | 0.204 | 1.227 | 0.697 | 2.160 | 0.479 |
| Indian | -0.232 | 0.793 | 0.358 | 1.756 | 0.568 |
| Others | 0.191 | 1.211 | 0.336 | 4.363 | 0.770 |
| **Gender** | | | | | |
| Male | -0.542 | 0.582 | 0.345 | 0.981 | 0.042 |
| Female | | | | | 0.127 |
| **Age** | | | | | |
| 21-30 | | | | | 0.860 |
| 31-40 | -0.264 | 0.768 | 0.411 | 1.435 | 0.408 |
| 41-50 | -0.206 | 0.814 | 0.408 | 1.620 | 0.557 |
| 51 and above | -0.107 | 0.899 | 0.365 | 2.214 | 0.817 |
| **Marital Status** | | | | | |
| Single | | | | | 0.814 |
| Married / In a Relationship | 0.183 | 1.201 | 0.636 | 2.267 | 0.572 |
| Divorced | 0.308 | 1.361 | 0.708 | 2.615 | 0.356 |
| Widowed | 0.316 | 1.371 | 0.435 | 4.323 | 0.590 |

Table 23 : Multivariate analysis for Anxiety



Anxiety. Findings of the multivariate analyses for the result of anxiety can be seen in Table number 8. The highest proactive factor against anxiety was being a male study participant (-.542, 95%CI, .345 to .981). Non-significant positive predictors of anxiety with large effect sizes were being divorced (.308, 95%CI, .708 to 2.615) and widowed (.316, 95%CI, .435 to 4.323), whereas age of study participants 31 to 40 years and above was third one (-0.264, 95%CI, 0.411 to 1.435).

#### 4.2.2.1.4 Insomnia

Even though insomnia is considering a common issue that has been suffered by the people in Malaysia, this decease usually remains untreated. The factor can be varied from case-to-case basis, remedy, treatment, screening, are still needed in order to reduce this illness. The Insomnia Severity Index (ISI) is a brief tool which has seven key questionnaires just to assesses the key nature, severity, and impact of insomnia. The evaluation shall concluded the severity of sleep, sleeping maintenance, morning wake issues, sleeping satisfaction level, interruptions of sleeping difficulties with daytime function, obviousness of sleep issues by people surround, and distress caused by the sleep difficulties. The total score ranges from 0 to 28, and is interpreted as follows: absence of insomnia (0–7); sub-threshold

insomnia (8–14); moderate insomnia (15–21); and severe insomnia (22–28) [37]. The ISI has been evaluated in a population-based sample and has adequate psychometric properties. It is suggested a cut-off score of 10,

**Reliability Statistics**

| Cronbach's Alpha | N of Items |
|---|---|
| .927 | 7 |

Table 24 : The reliability score for Insomnia

| Type | Frequency (Percentage) |
|---|---|
| absence of insomnia (0–7) | 390 (70.3) |
| sub-threshold insomnia (8–14) | 80 (14.4) |
| moderate insomnia (15–21) | 55 (9.9) |
| severe insomnia (22–28) | 30 (5.4) |
| Type | Frequency (Percentage) |
| absence of insomnia (0–10) | 428 (77.1) |
| insomnia (11 and above) | 127 (22.9) |

Table 25 : Number of participants base on insomnia severity level

| Characteristic (ISI) | B | Sig. | Exp (B) | 95% C.I. for EXP (B) Lower | Upper |
|---|---|---|---|---|---|
| **Ethinicity** | | | | | |
| Malay | | 0.068 | | | |
| Chinese | 0.440 | 0.051 | 1.553 | 0.998 | 2.418 |
| Indian | -0.228 | 0.474 | 0.796 | 0.426 | 1.486 |
| Others | 0.619 | 0.203 | 1.857 | 0.716 | 4.813 |
| **Gender** | | | | | |
| Male | -0.069 | 0.733 | 0.933 | 0.627 | 1.389 |
| Female | | 0.861 | | | |
| **Age** | | | | | |
| 21-30 | | 0.661 | | | |
| 31-40 | -0.031 | 0.904 | 0.970 | 0.592 | 1.589 |
| 41-50 | 0.240 | 0.371 | 1.271 | 0.751 | 2.151 |
| 51 and above | -0.160 | 0.676 | 0.852 | 0.403 | 1.803 |
| **Marital Status** | | | | | |
| Single | | 0.904 | | | |
| Married / In a Relationship | 0.032 | 0.894 | 1.033 | 0.641 | 1.665 |
| Divorced | 0.023 | 0.930 | 1.023 | 0.617 | 1.696 |
| Widowed | -0.354 | 0.496 | 0.702 | 0.254 | 1.943 |

Table 26 : Multivariate analysis for Insomnia

Insomnia. Findings of the multivariate analyses for the result of anxiety can be seen in Table number 8. The highest proactive factor against anxiety was being a Chinese study participant (.440, 95%CI, .998 to 2.48). Non-significant positive predictors of anxiety with large effect sizes were being form other states (.619, 95%CI, .716 to 4.813) and widowed (-.354, 95%CI, .254 to 1.943), whereas age of study participants 51 years and above was third one (-0.164, 95%CI, 0.403 to 1.803).

## 4.3 Reliability Analysis of the Instruments

**Wellbeing**. In this study Warwick-Edinburgh Mental Well-Being Scale (WEMWBS) was used to assess wellbeing, which assesses three dimensions of wellbeing: emotional, psychological, and social.

**Depression**. In this current study Participant Health (PHQ-9), was used to assess depressive symptomatology. These questions measured the desire to undertake pleasure activities but not being able to discover anything appealing (i.e. boredom), as well as wasting time. We added an item that indicated how rewarding or joyful people found the activities they were doing, based on the concept of reinforcement deprivation (i.e., a lack of availability to or interaction with positive stimuli), which is known to lead to depression (i.e., reinforcement). The higher the score, the more depression symptoms were present. Reliability of the scale was proven through analysis.

**Anxiety**: to measure anxiety Participant Health (GAD-7) was used in this study. Five new items were added to the initial version of the questionnaire: bored, perplexed, furious, annoyed, and lonely. Scale was proven to be reliable.



## 4.4 Hypothesis Testing

For the hypothesis testing following objectives are being considered:

1. The Covid 19 outbreak have a negative impact on the Malaysians' mental health. Findings of the analysis indicated that sudden outbreak of covid-19 actually had a negative impact on the people of Malaysia. That means that with an increase of covid-19 a decrease in the prevalence of mental health is reported.
2. The impact on mental health is different among the different sociodemographic.

   ANOVA analysis stated that no significant different can be reported for the ethnicity [F(3, 551)=1.705, p=0.165], nor by gender [F(2, 552) = 0.886, p=0.413]. Whereas, the scores differed significantly by age groups in which those aged more than 50 years had lower score [F(3,

551)=5.446, p=0.001]. The scores did not differ by marital status [F(3, 551)=1.864, p=0.135]. therefore, for the second hypothesis or objective of the study it can be stated that it is partially approved.

3. The elderly population are significantly more affected by the Covid 19 pandemic. Multivariate analysis indicated that people of Malaysia with an age of 51 years and above are reported to have more chances of developing covid-19. Reasons for that could be that they are more vulnerable.

## 4.5 Discussion

In the study of epidemics and pandemics, attention has usually focused on medical effects and physical consequences. However, pandemics' social, economic, and psychological effects can be even more significant. Thus, many international reports highlight the impact of the COVID-19 pandemic on the population's mental health. There are numerous studies on COVID 19 in Malaysia, both from a clinical point of view and from a social point of view.



Although the response capacity of Malaysia has been analysed and coordinated regional plans have been proposed for specific issues, direct studies of the psychological impact encompass the joint analysis of several countries (Abdullah et al., 2020). COVID-19 can affect the whole of society. It has psychosocial consequences on individuals who feel stressed and worried. The epidemic and the control measures being carried out can lead to widespread fear. They can lead to the social stigmatization of patients, their families, and the health personnel who care for them, all with psychological consequences. Perhaps, one of the few countries where this last situation is not evident is the population, and the Malaysian state widely recognize Malaysia, where the work is carried out by health personnel (Azlan et al., 2020).

Regarding the prevalence of covid-19 in Malaysia it can be stated that in November 2020, the Ministry of Health revealed that approximately 37,009 calls had been made to mental health and psychosocial support helplines, nationwide, from people in desperate need of medical assistance. emotional and psychological support. However, in this dramatic situation, according to the specialized centre of the University of Malaya (UMSC), the country would have one psychiatrist for 100,000 people, while the

ideal ratio would be one psychiatrist for 10,000. Also, In the first year of the COVID-19 pandemic, the global prevalence of anxiety and depression increased massively, by 25%, according to a scientific note published today by the World Organization Health (WHO). The document highlights which populations have been most affected and summarizes the effects of the pandemic on the availability of mental health services and how the situation evolved during the pandemic.

Age, education, income, the number of young children in the family, and self-reported general health state were all significantly adversely linked with these indicators. The presence of a mental health disorder was found to be the strongest predictor of all mental health outcomes studied. Background vulnerability variables, such as self-reported poor overall health and a history of mental health disorders, contributed the most to the explained variation in depression, anxiety, and sleeplessness in multivariate models.

Simultaneously, the presence of COVID-19 symptoms and specific concerns about this illness contributed significantly to the explained variance. When you look at sadness, anxiety, and insomnia in conjunction, you get a new perspective on how they affect you. 45.6% of respondents fulfill the criterion for a serious difficulty in any of the conditions specified, whereas 54.4% satisfy the requirements for no condition. Naturally, there is a significant level of comorbidity between these illnesses. The percentage of people who meet the criteria for significant symptoms in all three conditions is 16.9%, which is the same as the percentage who meet the criteria for any one of them, 17.0%. Both of these percentages are higher than the percentage who meet the criteria for any two, 11.6%. A significant proportion of those polled reports serious issues, with 6.2% (n = 75) expressing severe depression, 10.6% (n = 128) reporting severe anxiety, and 3.1% (n = 37) reporting severe sleeplessness.



Furthermore, 180 participants (14.9% of the overall sample) said they had suicidal thoughts in the previous two weeks, with 5.5% saying they had these thoughts more than half of the time or nearly every day. Importantly, 28.6% of positive patients have never had a mental health problem before, suggesting that over 1/3 of those affected are experiencing clinically severe levels of sadness, anxiety, and/or insomnia for the first time during the pandemic.

The new world reality resulting from the COVID-19 pandemic has compromised the mental state of the general population. However, a significantly affected group is health professionals, who are at the forefront of the defence against the SARS-CoV virus. The impact on mental well-being in this group of professionals has been severely altered by this condition, presenting medium-high levels of anxiety, depression, nervousness, and insomnia (Spoorthy et al., 2020).

In addition, they present a higher risk of becoming infected and of being exposed to stress, long shifts, excessive workload, receiving, in many cases, inadequate training, and scarce personal protective equipment. Furthermore, health personnel constantly face unprecedented situations, such as the distribution of insufficient resources to equally needy patients, providing care with limited resources, and lack of specific medication. In addition to this situation, an increasing number of health professionals are being infected with COVID-19, generating direct concern about the risk of its complications and indirect fear of transmitting the virus to their family, social and work environment, which leads to an increase in isolation measures with worse psychological results (Zhang et al., 2020).



The appearance on the television, the radio, and digital and print media of unsupervised information and rumours circulating among the public, mentioning COVID-19 as an invented disease or a conspiracy, generates feelings such as anger and denial in part of the population, which defies the rules established by the health authorities, refusing to comply with the preventive measures imposed, thus increasing the risk of spreading the infection and the workload in hospitals.

Defined as the presence of a set of psychological manifestations, such as increased paranoia, anger, frustration, and high levels of emotional exhaustion, presenting in some cases together with symptoms similar to depression or combined with frank depression, and which generally manifests itself by interrupting the accommodation mechanisms in work situations with sustained tension. This syndrome is considered a measure of stress in the professional field. Although it includes all the symptoms mentioned above, three main criteria are taken into account to be considered a true Burnout Syndrome: emotional exhaustion, depersonalization of the individual, and reduced perception of personal fulfilment (Greenberg et al., 2020).

Within the population, two groups are especially susceptible to the development of this syndrome: front-line health professionals in charge of treating patients with coronavirus disease; and a secondary group often not taken into account: doctors in training, the latter having a worldwide prevalence of 44% (Zhang et al., 2020).

**Anxiety.** It is an adaptive response of human existence, which could become pathological, alludes to a state of agitation and unpleasant restlessness, characterized by the anticipation of danger, and is characterized by the presence of psychic symptoms and the sensation of imminent danger. That is a combination of cognitive and physiological symptoms, manifesting a startle reaction, where the individual tries to find a solution to a probable threat. Anxiety symptoms are more frequent in women than in men (Shanafelt et al., 2020).

It is the variation of the sense, perception, or behaviour after an unforeseeable event that threatens the well-being and life of the individual. It exceeds their expectations, causing an alteration in their behaviour, but with the possibility of recovering their initial state. The individual's response often includes fear, despair, and dismay. The clinical picture includes as main characteristics:

a) the re-experiencing of the traumatic event, such as nightmares, images, and memories;
b) the avoidance of places or realities related to the traumatic event, in addition to reactions of terror, pain, and disinterest; and
c) a condition of hyperarousal, which affects their responses, causing difficulty concentrating, and presenting irritable behaviour, anger, and insomnia, with a possible state of hypervigilance (Carmassi et al., 2020).



They are emotions and behaviours that occur in a person after noticing a traumatic event suffered by another individual. This fact causes a desire to mitigate the suffering of others or solve the problem, producing cognitive, behavioural, affective, and physical alterations.

The individual also suffers from the following clinical picture:

a) re-experiencing the traumatic episode,
b) avoidance and torpor,
c) hyperarousal and hypervigilance.

Data suggest that the prevalence of this syndrome may be higher among health professionals due to the work they carry out with trauma victims, a fact for which they apply empathy to understand the process of the affected person, its magnitude, and carry out an adequate treatment. But due to this emotional lability, they could present a clinical picture similar to that of the victim (Orrù et al., 2021).

**Depression** is a psychiatric disorder generally characterized by a depressed, an hedonic, empty and irritable mood, accompanied by somatic and cognitive changes that significantly affect an individual's functional capacities. Previous experiences teach us that widespread diseases such as the Ebola outbreak in Sierra Leone in 2015 cause countless mental illnesses, where depression was prevalent, in addition to anxiety and post-traumatic stress, symptoms firmly rooted in the current pandemic, as we can see from the psychiatric triad seen for the first time in health workers in China, which is made up of: depression, stress, and anxiety, symptoms appreciated by all health personnel who have been under the pressure of managing the pandemic and treating patients (Liu et al., 2021).

**Suicide**. Suicidal behaviour is the human act of self-injury, determined by various factors and psychosocial, family, work, and biological problems carried out to end life. Suicide is a problem within public health that has been present since time immemorial, mainly affecting high-risk populations such as the elderly, adolescents, and young people, and including in the current pandemic new groups at risk: the health personnel, people with previous psychiatric disorders, people exposed to economic insecurity and people who have a family member or acquaintance who died of COVID-19 disease.



Depending on the characteristics of the risk presented by the behaviour of the individual, we can classify the severity of the suicide attempt into: mild, moderate, severe, and extreme, which helps us to provide an appropriate diagnosis (Jahan et al., 2021).

**Wellbeing**. Psychological variables such as individual resilience (Zhai & Du, 2020), collective resilience and institutional resilience (Legido-Quigley et al., 2020) have a fundamental role in the development of effective responses in the face of stressful events such as pandemics.

The measures adopted in each country and the sociocultural elements also have repercussions in response to pandemics and epidemics, particularly in developing countries (Victor & Ahmed, 2019).

The peoples' culture, lifestyles, and traditions have facilitated infections (Liritzis et al., 2020). A clear example of this is the fact that this is the third zoonotic epidemic in the last two decades (Zhang et al., 2020). In addition, customs and beliefs have often been insensitive to mental and behavioural disorders, underestimating pandemics' traumatic, depressive, and suicidal effects.

At the international level, most studies focus on the effects on employment that mobility restrictions have had and the performance of certain economic activities (Beland et al., 2020). Adams-Prassl et al. (2020) introduce a “real-time survey” carried out in the United Kingdom, the United States, and Germany, which allows them to suggest that the pandemic is exacerbating the inequalities that already existed, given that those workers in a disadvantaged situation (women, with low levels of education or immigrants) are usually employed in areas where it is not possible to carry out their work remotely, which coincides with what was found by other similar studies (Dingel and Neiman, 2020; Avdiu and Nayyar, 2020). Several studies have found evidence that higher-paid workers are more likely to carry out their activities remotely, which may help translate social advantages into better health outcomes (Yasenov, 2020; Dingel and Neiman, 2020; Bartik et al. 2020). However, the heterogeneity of activities is identified as one of the main determinants of the unequal effects of the pandemic at work (Béland et al., 2020; Maloney and Taskin, 2020).



Coibion et al.(2020) and Bartik et al. (2020), suggest that the loss of employment is much higher than that recorded in official sources from multiple countries and highlight the existence of "discouraged" workers who have stopped looking for work during the pandemic. Furthermore, Aum et al. (2021) study the case of South Korea to show that even in the absence of mandatory work stoppages, the presence of Covid-19 infections can reduce employment levels for fear of contagion or due to the decrease in activities in the service sector. On the other hand, Forsythe et al. (2020) analyze job offers. Despite the reactivation of activities, they show that the demand for work has decreased uniformly throughout the United States, regardless of the level of transmission or risk of contagion. Finally, Bartik et al. (2020) find that small businesses have particularly suffered from closures of activities, which has led to a large loss of jobs and fragile financial conditions in these companies.

In terms of other indicators of well-being, most of the articles reviewed refer to direct results of the Covid-19 illness, but a growing number of studies focus on the consequences of the pandemic on mental health (Béland et al., 2020; Tubadji et al., 2020). Some of these studies have focused on mechanisms through which actions to contain the pandemic can affect mental health, in cases such as the uncertainty associated with not knowing what the personal consequences of the pandemic may be, negative attitudes towards confinement (boredom, frustration), or the excess of news about the pandemic received through traditional media or social networks (Tubadji et al., 2020). Likewise, other studies have focused on how certain groups (older adults, people with low educational levels, or lower-income) may be more susceptible to adverse effects on their mental health (Béland et al., 2020b). Some studies are already beginning to document an increase in requests for emotional support services, either by studying traditional service calls (Armbruster & Klotzbücher, 2020).

In addition to employment disparities, another set of studies has looked at how the effects of the Covid-19 pandemic may be reinforcing inequalities experienced by women, ethnic minorities, or other groups vulnerable to its effects (Adams-Prassl et al., 2020; Yasenov, 2020), or even lead to changes in domestic violence (Béland et al., 2020a).



Infectious diseases (threat from infectious diseases) are external factors, including the population, which represent the occurrence of the disease in many people. Vulnerability is the internal condition in which a subject or group is exposed to a threat of infection, which affects its sensitivity to physical injury; For example, in biological processes, the state of the immune system. In assessing the risk of mental illness, three subjects were identified, anger, which are the processes that make people angry, upset or, at the very least, anxious. Professionals generally do not pay for the cause of anger; on the other hand, people often do not understand or disagree with the information and assessments provided by the police and experts.

Therefore, it is not surprising that the understanding and assessment of risk shifts from one group to another. Much of indignation is defined in the sense of risk. An appropriate approach to mental health issues affects an understanding of the perceptions of risk from the population and the circumstances that lead to stress and anger. The disruption of global supply chains and the general reduction in income

levels (particularly among the poorest families and countries) can have negative repercussions on this dimension (Laborde et al., 2020; Carroll et al., 2020). One of the few studies that analyse the dietary changes derived from confinement due to Covid-19 (Carroll et al., 2020) shows that when staying at home, a greater consumption of snacks is reported, but also of food made at home. However, a reduction in physical activity is also reported. Visitation restrictions imposed by the pandemic have had a major impact on the mental health and emotional well-being of prisoners and their families, as our new Guidance Note 'Breaking the Walls of Isolation: Ensuring the contact with the families of people deprived of their liberty in a world with Covid-19". Restrictions involving the suspension and reduction of visits have also been applied to children deprived of their liberty, despite the existence of international standards and guidelines affirming the need for children to maintain a social connection, and in particular in-person visits by family members and support structures and networks.

However, consistently, in each state of Malaysia included in this study and at each time point, results suggest that for any one mental health and wellbeing variable assessed, significant and non-significant proportions of people appear adversely affected, roughly between one in six and one in three people, in any one of the variables assessed. Further, this finding also corroborates the general (non-pandemic) finding that younger people suffer from mental health problems to a greater extent than older people. From this perspective, it is quite reasonable that younger people may be more vulnerable to the potential impact of the pandemic on poor mental health and wellbeing.



Mental disorders may be beyond the control of the affected person; Increases in the incidence of mental and emotional disorders were estimated, based on the magnitude of the infection and the degree of severity of the population (between one-third and one-third). half of the victims may suffer from mental illness, as with the magnitude of the outcome and the degree of severity). Although it should be noted that not all psychiatric and social problems that occur can be classified as disease; will usually be affected by the abnormal situation. These problems are often more pronounced in populations that are in dire straits, have limited resources and have limited access to health and wellness services.

# CHAPTER 5 CONCLUSION

## 5.1 Findings

As the number of Covid-19 cases and deaths continue to decline in most parts of the world, public health measures and restrictions are being relaxed to an unprecedented degree. While people around the world are returning to live their lives as normal as possible, those in detention remain largely excluded from a return to normalcy. According to human rights groups and experts, restrictions on their rights still affect more than 11 million people held in penal institutions today.

So far, most of Malaysian residents responding to an online survey reported symptoms reflecting substantial issues in one or more areas of their mental health, including sadness, anxiety, or insomnia, at what appears to have been the peak of the COVID-19 epidemic in Malaysia. Furthermore, having numerous difficulties was the norm—people were nearly twice as likely to have multiple problems as they were to have just one.

Each of the issues discussed here appears most frequently in people who are most susceptible in terms of their health and socioeconomic circumstances. Self-rated health and mental health history were consistently among the most strongly related predictors of depression, anxiety, and insomnia in multivariate models that included all significantly associated covariates from bivariate analyses.



Pre-existing physical health issues connected to COVID-19 risk, as well as COVID-19 symptoms themselves, were arguably more essential. One may argue that the epidemic has an especially negative influence on the mental health of people who are already suffering from mental health issues. Concerns about COVID-19's effects also played a role in these models, with the greatest impact coming from concerns about personal or household finances.

It is necessary to be aware of the differences between the disadvantages of different groups, especially gender, age and industry level. The psychiatric effects of a communicable disease are often more pronounced in populations that are in a state of dementia, low risk, and limited access to health care. health and public services. There are also risks of historical work, such as members of field teams working in an emergency (including morgue workers).

In general, the most vulnerable groups are those who have suffered the greatest losses and have difficulties in rebuilding their lives and social support network after the epidemic. The losses experienced may have differentiated effects on different population groups. For example, the emotional response of men may be excessive alcohol intake or violent behavior; women tend to communicate with each other, as well as seek support and understanding for themselves and their families.

The elderly may be in situations of vulnerability as a result of chronic and disabling diseases, nutritional deficiencies, as well as lack of family and social support; generally, they are in worse physical conditions to face the epidemic disease. Boys and girls have less understanding of what is happening and face limitations in communicating what they feel. The situation created by an epidemic affects all aspects of childhood development (physical, mental and social).

## 5.2 Implication of the Study

Following can be termed as implications for the study:

a) This study indicates that it is important to assess, part of the data, on the needs of the mental health care of users of social services. psychiatry (children and adults), control of care hours, in people at risk for mental illness, risk of suicidal behavior and risk. risk of further disruption from the COVID-19 incident. To this end, it is recommended to conduct a census of the population in management with mental health issues in high-risk situations.

b) A combination of two-month or quarterly delivery of medicines to long-term winter patients, based on the shipment and storage of each manufacturer.

c) Preservation and delivery of drugs to users of the Mental Health program.

d) Telephone surveys of the population in Mental Health administered by the Board of Health.

## 5.3 Limitations of the Study

Only individuals with access to electronic devices and the internet were able to participate in the poll because it was distributed through online platforms. Only the association, not the cause and effect, can be determined using cross-sectional design. We does not omit pre-existing anxiety or depression in our subjects since we did not measure their psychological health prior to the epidemic. Furthermore, we did

not collect data from different stages of the epidemic, so comparisons are impossible. All of these variables limit the study's result and application. Future research will need to examine factors other than demographical groups.

## 5.4 Contribution of the study

It compares the means of the variables, which makes it possible to appreciate the differentiation that has occurred in the countries in response to COVID-19. Likewise, a regression analysis of Malaysia on predictive elements of mental health is provided, which allows a better approximation to the understanding and intervention of the psychological response to the pandemic.

## 5.4 Recommendations of Future Research

For future research, it would be essential to study anxiety and depression in the face of social distancing due to the health emergency due to COVID-19 and, in turn, include other study variables, such as fear of COVID-19, aggressive behaviour, neuropsychological functionality39, psychological discomfort, stress, and psychopathological symptoms, in different populations such as health professionals, children, adolescents, older adults and people with disabilities

Furthermore, it is recommended to consider the one-person situations that each individual has and what factors predispose the subject to suffer a psychological impact in a pandemic. It is then necessary to measure the risk of mental illness, which means that the outcome is more catastrophic than the specific nature of the damage, in health and mental health. It is the result of a combination of external (damage) and internal (vulnerability) conditions. It also affects other risks (environment, health, industry, etc.)

## APPENDIX

### Mail Questionnaire

https://forms.gle/MfqGpvmZ2bsZyMet8

**Pandemic Mental Health Test**

Dear Participant,

I am a postgraduate student at Unirazak University currently pursuing Master's in Business Administration (MBA) study and I am conducting research on the Pandemic Mental Health in Malaysia. The purpose of this research is purely academic, and focus will only be driven towards what the results indicate rather than self-interest. The data analysis will be conducted in an ethical manner; considering the interests of all parties involved. Data will not be disclosed or sold to third parties for commercial purposes. Your privacy would be retained, and no information obtained from this study shall be disclosed in any manner that would identify you. All information obtained would be kept strictly confidential.



To participate the questionnaire survey, you must be at aged 21 and above, both employ and unemployed Malaysia citizen. Specific instruction is given at the beginning of each section of the questionnaire. Kindly complete the questionnaire by answering all questions in each section.

I would like to thank you in advance for taking part in this survey and sparing time to answer this survey. Your valuable input would be very helpful for the course of this study.

I have read and understood the information provided to me here and I voluntarily agree to participate in this research. *

◯ Yes

Section 2 of 5

PART A: RESPONDENT'S PROFILE

Instruction: Please tick the box corresponding to the category that most closely represents yourself.

Ethnicity

- Malay
- Chinese
- Indian
- Others

Which state are you currently living?

1. Selangor
2. Kuala Lumpur
3. Melaka
4. Negeri Sembilan
5. Johor
6. Pahang
7. Perak
8. Penang
9. Kelantan
10. Terengganu
11. Perlis
12. Sabah
13. Sarawak
14. Labuan
15. Putrajaya
16. Kedah

Gender

- Male
- Female
- Prefer not to say

Age

- 21-30
- 31-40
- 41-50

- 51 and above

Marital Status

- Single
- Divorce
- Married / In a Relationship
- Widowed

Education

- Presecondary
- Secondary
- High School Diploma
- Bachelor Degree
- Master Degree and above
- Others

Monthly Income (All sort of income)

- No Income
- RM1,500 and below
- RM1,501 - RM3,000
- RM3,001 - RM5,000
- RM5,001 - RM7,500
- RM7,501 - RM10,000
- RM10,001 and above

Occupational Status

- Unemployed/Homemaker
- Working part time / Freelance
- Working full time / Self Employed
- Student



**PART B: AFFECT OF COVID-19 ON PERSONAL WELL BEING**

Instruction: Please select one answer that best reflects your opinion and perception on Mental Health in Malaysia in the Management field based on your personal experience. Please use the following rating

scales to express the extent of your agreement or disagreement on each statement. Select (√) in the rating box that you feel best describes your feelings for each statement.

Select from scale 1-5;

1 = None

2 = Rarely

3 = Sometime

4 = Often

5 = All the time

Please tick the box that best describes your experience of each over the last 2 WEEKS in relation to the current covid-19 pandemic.

1. I've been feeling optimistic about the future

   1 2 3 4 5

2. I've been feeling useful

   1 2 3 4 5

3. I've been feeling relaxed

   1 2 3 4 5

4. I've been feeling interested in other people

   1 2 3 4 5

5. I've had energy to spare

   1 2 3 4 5

6. I've been dealing with problems well

   1 2 3 4 5

7. I've been thinking clearly

   1 2 3 4 5

8. I've been feeling good about myself

   1 2 3 4 5

9. I've been feeling close to other people

1 2 3 4 5

10. I've been feeling confident

1 2 3 4 5

11. I've been able to make up my own mind about things

1 2 3 4 5

12. I've been feeling loved

1 2 3 4 5

13. I've been interested in new things

1 2 3 4 5

14. I've been feeling cheerful

1 2 3 4 5

**Part C : Participant Health (PHQ-9)**

Instruction: Please select one answer that best reflects your opinion and perception on Mental Health in Malaysia in the Management field based on your personal experience. Please use the following rating scales to express the extent of your agreement or disagreement on each statement. Select (√) in the rating box that you feel best describes your feelings for each statement.



Select from ;

- Not at all
- Several days
- More than half the days
- Nearly everyday

Please tick the box that best describes your experience of each over the last 2 WEEKS in relation to the current covid-19 pandemic and how often have you been bothered by any of the following problems?

1. Little interest or pleasure in doing things?

- Not at all - Several days - More than half the days - Nearly everyday

2. Feeling down, depressed, or hopeless?

- Not at all - Several days - More than half the days - Nearly everyday

3. Trouble falling or staying asleep, or sleeping too much?

- Not at all - Several days - More than half the days - Nearly everyday

4. Feeling tired or having little energy?

- Not at all - Several days - More than half the days - Nearly everyday

5. Poor appetite or overeating?

- Not at all - Several days - More than half the days - Nearly everyday

6. Feeling bad about yourself - or that you are a failure or have let yourself or your family down?

- Not at all - Several days - More than half the days - Nearly everyday

7. Trouble concentrating on things, such as reading the newspaper or watching television?

- Not at all - Several days - More than half the days - Nearly everyday

8. Moving or speaking so slowly that other people could have noticed? Or the opposite - being so fidgety or restless that you have been moving around a lot more than usual?

- Not at all - Several days - More than half the days - Nearly everyday

9. Thoughts that you would be better off dead, or of hurting yourself in some way?

- Not at all - Several days - More than half the days - Nearly everyday

**Part D : Participant Health (GAD-7)**

Instruction: Please select one answer that best reflects your opinion and perception on Mental Health in Malaysia in the Management field based on your personal experience. Please use the following rating scales to express the extent of your agreement or disagreement on each statement. Select (√) in the rating box that you feel best describes your feelings for each statement.

Select from ;

- Not at all
- Several days
- More than half the days
- Nearly everyday

Please tick the box that best describes your experience in relation to the current covid-19 pandemic and how often have they been bothered by the following over the past 2 weeks?

1. Feeling nervous, anxious, or on edge

- Not at all - Several days - More than half the days - Nearly everyday

2. Not being able to stop or control worrying

- Not at all - Several days - More than half the days - Nearly everyday

3. Worrying too much about different things

- Not at all - Several days - More than half the days - Nearly everyday

4. Trouble relaxing

- Not at all - Several days - More than half the days - Nearly everyday

5. Being so restless that it's hard to sit still

- Not at all - Several days - More than half the days - Nearly everyday

6. Becoming easily annoyed or irritable

- Not at all - Several days - More than half the days - Nearly everyday

7. Feeling afraid as if something awful might happen

- Not at all - Several days - More than half the days - Nearly everyday

**Part E : Participant Health (ISI)**

Instruction: The Insomnia Severity Index has seven questions. The seven answers are added up to get a total score. When you have your total score, look at the 'Guidelines for Scoring/Interpretation' below to see where your sleep difficulty fits.

Select from ;

0 - None

1 - Mild

2 - Moderate

3 - Severe

4 - Very Severe

Please tick the box that best describes your experience in relation to the current covid-19 pandemic and rate the current severity of your insomnia problem(s) base on past 2 weeks..



1. Difficulty falling asleep

1 2 3 4 5

2. Difficulty staying asleep

1 2 3 4 5

3. Problems waking up too early

1 2 3 4 5

4. How SATISFIED/DISSATISFIED are you with your CURRENT sleep pattern?

Very satisfied Satisfied Neutral Dissatisfied Very dissatisfied

5. How NOTICEABLE to others do you think your sleep problem is in terms of impairing the quality of your life?

Not at all noticeable Little Somewhat Much Very much noticeable

6. How WORRIED/DISTRESSED are you about your current sleep problem?

Not at all noticeable Little Somewhat Much Very much noticeable

7. To what extent do you consider your sleep problem to INTERFERE with your daily functioning (e.g. daytimefatigue, mood, ability to function at work/daily chores, concentration, memory, mood, etc.) CURRENTLY?

Not interfering Little Somewhat Much Very Much interfering

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**APPROVAL PAGE**

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

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