Anxiety and Depression among University Students during the COVID-19 Pandemic: A Cross-sectional Study

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Abstract: Mental health issues have become a growing public health concern around the world, particularly during the COVID-19 pandemic and the MCO. Therefore, this study aims to determine the level of anxiety and depression as well as to compare the anxiety and depression scores among the final-year undergraduate Health Sciences and Accountancy students at the UiTM during the MCO. Final-year students from the faculties of health sciences and accountancy have been given a set of study questions. Students were instructed to complete all questions using the Google Form. Out of 177 students who participated in the study, 52 (48.6%) Health Sciences students suffered from anxiety, and 25 (23.3%) suffered from depression. Meanwhile, 29 (41.4%) of accountancy students were anxious, and 15 (21.4%) were depressed. At UiTM Puncak Alam, Selangor, more than one third of the Accountancy and Health Sciences students were vulnerable to anxiety and sadness during the MCO. The findings also revealed that the mean anxiety score is significantly different between two-course groups (Health Sciences and Accountancy) students, $t(170.78)=2.021$, $(p=0.02)$. This study provides authorities with information about university students' mental health, particularly during the MCO, in order to facilitate further research and useful information.

Keywords: Anxiety, Depression, Undergraduate Students, Movement Control Order, Suffering

1. Introduction

Mental health has emerged as a major issue in the ongoing coronavirus disease 2019 (COVID-19) pandemic that affects all parties involved. COVID-19, a deadly infectious disease caused by the severe acute respiratory syndrome coronavirus 2 (SARS-CoV-2) was first reported in Wuhan, Hubei Province, China, in December 2019 and has since spread throughout China and other countries worldwide (Zu et al., 2019). The extreme functional impairment caused by mental illness, which is psychiatric or substance use problem, severely restricts one or more major life activities (Parekh, 2018). Depression and anxiety, the most prevalent mental illnesses that damage both physical and social functioning (Hassan et al., 2018). The symptoms of mental illness might be mild (Parekh, 2018). Even yet, it might just minimally affect their daily lives in the form of phobias or unsual worries. If symptoms are frightening, certain serious mental health conditions necessitate hospitalization for the patient.

1.1 Anxiety and Depression among Students

The various studies demonstrated that mental health issues among the student population are a worldwide concern (Eisenberg et al., 2007). Furthermore, the number and severity of major psychological problems in the college population are rising (Hunt & Eisenberg, 2010; Pedrelli et al., 2015; Stallman, 2010). Additionally, McCarthy et al. (2006) reported that college students indicated anxiety, stress, and depression as the most prevalent problems at counselling centres.

The academic setting requires all aspects of wellbeing, including physical, social, emotional, spiritual, and psychological welfare (Alias et al., 2022; Sarkam et al., 2022). Therefore, it is anticipated that those who are in good physical, mental, and psychological health will function effectively in both cognitive and non-cognitive contexts (Dyrbye, Thomas & Shanafelt, 2006; Sarkam et al., 2022). In other words, it may be difficult for someone with mental health issues like depression or anxiety to perform well in academic or nonacademic areas.

Due to pressure and stress, university students may have a higher chance of developing depression (Ghaedi & Kosnin, 2014). Due to the fact that they have to adjust to a variety of psychosocial changes as well as deal with the academic and social responsibilities of preparing for their professional careers, they frequently have excellent access to anxiety, especially in the study process, social phobia, and academic anxiety (Ul Haq et al., 2018). Furthermore, the high expectations for academic success have unsettled the atmosphere, which, if left unchecked, could endanger their physical and mental health (Uehara et al., 2010). According to a recent study, anxiety is the most common mental health condition among college students, with stress and depression coming in second and third, respectively (Alahmadi, 2019; Kamberi et al., 2019). Depression was the main reason students dropped out of college (Bayram & Bilgel, 2008; Porter, 1989).

Meanwhile, the high rates of depression and suicide among medical students are deeply concerning (Honney et al., 2010; Ibrahim & Abdelreheem 2010; Al-Dabal, 2010). A study by Jadoon et al. (2010) that revealed a significant prevalence of anxiety and depression (43.89%) among medical students provided support for this study. Due to their academic anxieties, medical students were prone than non-medical students to experience physical and mental health issues (Ali Lakhiar et al., 2017). The study found that academic stress, poor physical condition, and negative lifestyle changes were the main causes of the medical and health sciences' susceptiblility to mental health issues (Al-Dabal et al., 2010).

Surprisingly, during the COVID-19 pandemic, university students' levels of anxiety and depression rose (Basheti, Mhaidat & Mhaidat, 2021; Saddik et al., 2020; Xiao et al., 2020). Studies showed that the online learning platforms during the pandemic that replace the face-to-face educational process might be a factor that induces anxiety and depression among Health Sciences students (Basheti, Mhaidat & Mhaidat, 2021; Saddik et al., 2020). Meanwhile, a study by Sundarasen et al. (2020) showed that non-health sciences students in Malaysia also showed a higher level of mild to moderate (6.4%) and moderate to severe (4.1%) anxiety during the COVID-19 pandemic than health sciences students who were 4.4% and 1.1%, respectively. The results of the previous study may have been affected by financial issues, online distance learning, and uncertainty regarding their future academic and job performances (Sundarasen et al., 2020). Both faculties possibly being anxious and unfamiliar with the use of online learning platforms, have limited internet connection, lacked peer support networks, and worried about the COVID-19 virus spreading.

1.2 The Effects of Anxiety and Depression during Pandemic

Tertiary education institutions have shifted to an emergency online learning format as a result of physical distancing measures implemented in response to COVID-19, which is expected to exacerbate academic stressors for students. According to data from International Islamic University Malaysia (IIUM), more students sought counsel during the MCO era (Abdullah, 2020). This data included cases of depression and anxiety due to many factors, such as living alone, being unable to see friends, and worrying about changes in study plans (Abdullah, 2020). Also, Mahdy (2020)

discovered that the deficiency of communication between academicians and students due to online learning is another issue during the pandemic.

To the best of the author's knowledge, students are more likely to experience high levels of anxiety and depression, particularly during the pandemic period, as a result of the tertiary institution's shift in the learning system. The findings of this study will assist the university in improving campus health services to assist students in facing the challenging situations by providing efficient online screening, counselling sessions and daily monitoring of their mental health through online resources to collect data over time on their mental health and to create a better benchmark. Therefore, this study aimed to determine the level of anxiety and depression among final year undergraduate Health Sciences and Accountancy students during the MCO, as well as to compare anxiety and depression scores between final year undergraduate Health Sciences and Accountancy students during the MCO. This study aimed to answer the following research questions:

1. What are the level of anxiety and depression among final year undergraduate Health Sciences and Accountancy students during the MCO?
2. Is there a difference between anxiety and depression scores of final year undergraduate Health Sciences and Accountancy students during the MCO?

2. Methodology

2.1 Research Design

This study was conducted using a cross-sectional study. Using purposive sampling, the study aimed to compare the level of anxiety and depression among health sciences and accountancy students.

2.2 Sampling and Population

This research involved the undergraduate final year students from the Faculty of Health Sciences and Faculty of Accountancy who registered as full-time students in UiTM Puncak Alam. 177 participants in all were recruited for this study. The sample size was calculated by using the Raosoft software sample size calculator with 95% of confidence level, 5% error margin, 50% response distribution, and taking into account a 5% dropout range of participants. They were assigned to fulfil the inclusion of these criteria before they signed informed consent.

2.3 Instrumentation

Generally, this questionnaire consisted of 19 items organized into two parts: Part A of the online survey include information related to demographic data such as age, gender, marital status, program, and current semester, while the Part B of the survey was set to evaluate participants' anxiety (5-items) and depression (7-items) status, using the validated and previously published Hospital Anxiety and Depression Scale (HADS) (Zigmond & Snaith, 1983). For Part B, however, the participants had to check the item more closely to how they had felt throughout the previous week. This scale consists of 14 components, of which 7 (HADS-A) measure anxiety and the remaining 7 (D) measure depression (HADS-D). Each question was graded on a scale of 0 to 3, with a maximum of 21 points possible for each scale. A score of 0 to 7 was considered normal and indicated the absence of anxiety and depression; a score of 8 to 10 was considered borderline and indicated a probable cause of anxiety and depression; and a score of higher than or equal to 11 indicated the existence of anxiety and depression (case).

Closed-ended questions were used in the questionnaire's design because they were quick and simple to understand for participants. The cut-off points that students suffered from anxiety and depression was counted from borderline to an abnormal level. The range of correlations between HADS and other frequently used questionnaires was 0.49 to 0.83. The HADS has shown to be effective in evaluating the extent and cause underlying anxiety disorder and depression in physical, psychological, top-tier healthcare experts, as well as in their public.

2.4 Data Collection

The questionnaire was distributed to the participants through the Google Form during the MCO period from the end of March until the end of May 2020. They were given 10 minutes to answer all parts of the questions. The study has obtained ethical approval from Research Ethics Committee, Universiti Teknologi MARA [600-TNCPI(5/1/6)].

2.5 Data Analysis

The Statistical Package for Social Sciences (SPSS) software Version 21.0 (SPSS Inc. Chicago, IL, USA), was used to analyse all data. The descriptive analysis was conducted to determine the frequency distributions for age, programme, marital status, and gender. The statistics were summarised by calculating the proportion of students who gave each question a different response. Descriptive analysis was used to measure the level of anxiety and depression of undergraduate Health Sciences students and Accountancy students in UiTM Puncak Alam. Checking for data normality was carried out using the Skewness and Kurtosis values (with both are zero, indicating a distribution is normal). The independent t-test was used to compare the level of anxiety and depression among the Health Sciences and Accountancy students in UiTM Puncak Alam. In all analysis, $p<0.05$ was considered statistically significant.

3. Results

60% (n=107) of the 177 participants in the study were from the Faculty of Health Sciences, and 40% (n=70) came from the Faculty of Accountancy. 11% of the participants are males (n=20), and 89% are females (n=157). The participants are between the ages of 20 to 26 years old. The majority are in the age group 20 to 24 years (85%), while others are in the age group 25 and above (15%). The descriptive data variable of levels of anxiety and depression from the Faculty of Health Sciences and Faculty of Accountancy students are shown in Table 1. According to the anxiety level, it has been shown that 20% of Accountancy students and 21% and 28% of Health Sciences students, respectively, have borderline and abnormal anxiety levels. Hence, based on the HADS questionnaire cut-off point, 52 (49%) of Health Sciences students suffer from anxiety while 29 (41%) Accountancy students suffer from anxiety.

Table 1. Distribution of Health Sciences and Accountancy students studied according to age, gender, anxiety, and depression levels

Variable	Number of Health Sciences students (%)	Number of Accountancy students (%)
Age		
20 to 24	92 (85.98%)	59 (84.29%)
25 and above	15 (21.43%)	11 (15.71%)
Gender		
Male	17 (15.89%)	3 (4.29%)
Female	90 (84.11%)	67 (95.71%)
Anxiety		
Normal	55 (51.40%)	41 (58.60%)
Borderline	22 (20.60%)	15 (20.40%)
Abnormal	30 (28.00%)	14 (20.00%)
Depression		
Normal	82 (76.60%)	55 (78.60%)
Borderline	15 (14.00%)	11 (15.70%)
Abnormal	10 (9.30%)	4 (5.70%)

Regarding their depression level, it is found that 15 (14%) and 10 (9%) Health Sciences students suffer from borderline clinical depression and abnormal level of depression, while 11 (26%) and 4 (6%) Accountancy students suffer from borderline clinical depressions, respectively. According to HADS cut-off point, 25 (23%) Health Sciences students and 15 (21%) Accountancy students suffer from depression. Thus, it can be shown that in the descriptive analysis of the HADS questionnaire cut-off point, the Faculty of Health Sciences had greater levels of both anxiety and depression than the Faculty of Accountancy. Table 2 is the group factors and their mean anxiety and depression scores based on HADS scores.

Table 2. Comparison of group factors on depression and anxiety scores based on HADS scores

Factors	N (%)	HADS mean anxiety scores (SD)	HADS mean depression scores (SD)
Age			
20 to 24	151 (85.31)	7.93 (±4.07) borderline case	5.12 (±3.31) normal
25 and above	26 (14.69)	7.97 (±4.10) borderline case	5.13 (±3.31) normal
Gender			
Male	20 (11.30)	7.84 (±4.13) borderline case	4.94 (±3.25) normal
Female	157 (88.70)	7.93 (±4.07) borderline case	5.12 (±3.31) normal
Programme			
Health Sciences	107 (60.45)	8.40 (±4.42) borderline case	5.07 (±3.55) normal
Accountancy	70 (39.55)	7.21 (±3.37) borderline case	5.21 (±2.92) normal

SD standard deviation

An independent sample *t* test was used to compare the mean anxiety score between Health Sciences and Accountancy students (Table 3). The Skewness and Kurtosis values are both zero, indicating that the assumption of normality was not violated. Based on the histogram, normal and detrended Q-Q plots, these graphs further confirm that the sample data are normally distributed.

Table 3. Independent *t* test results for anxiety score

Variables	N	Mean (SD)	*t*-value	df	P
Anxiety					
Health Sciences	107	8.40 (±4.42)	2.02	170.78	*0.02
Accountancy	70	7.21 (±3.37)			

* statistically significant results

Interestingly, the independence *t*-test shows the mean anxiety score is significantly different between two-course groups (Health Sciences and Accountancy) students, $p<0.05$. The *t* test is statistically significant with the Health Sciences students (M=8.40±4.42) reporting the anxiety score estimates some 1.19 higher, 95% CI [0.03,2.35], than the Accountancy students (M=7.21±3.37), $t(170.78)=2.021$, (p=0.02).

However, the data of depression score shows that it is not normally distributed. Based on Table 4, a Mann-Whitney U test indicated that the depression scores of Health Sciences programme (Mean Rank=86.56, n=107) were not significantly lower than those of the Accountancy programme (Mean Rank=92.74, n=70), U=3483.50, z=-0.79 (corrected for ties), p=0.43, two-tailed.

Table 4. Test Statistics for depression score for Health Sciences and Accountancy programmes

Test statistics	Depression score
Mann-Whitney U	3483.50
Wilcoxon W	9261.50
Z	-0.79
Asymp. Sig. (2-tailed)	0.43

4. Discussion

The participant's age, gender, and course of the program are the group factors investigated in this study. Nearly all Malaysian universities, including UiTM, used virtual mode delivery during data collection, and most students resided in their parents' houses.

According to a study, MCO could make university students more susceptible to psychological side effects like anxiety, depression, stress, and concern (Mei et al., 2011). According to research on the impact of COVID-19 on education and student health, about 25% of the sample reported experiencing anxiety symptoms, which is encouraging given the rising anxiety over academic delays, pandemic economic consequences, and effects on daily life (Cao et al., 2020). People with sufficient coping skills are less prone to feel overwhelmed by life's demands and events because they view difficulties as motivating barriers rather than negative stressors (McCarthy et al., 2006). This study showed that 45.76% of students were susceptible to anxiety and depression, while others showed normal levels of anxiety and depression, respectively. It could be due to the normal students having a peer support group, good coping strategies, or great access to an online learning system. Those with anxiety and depression may have trouble using the internet, find it difficult to find support networks, or have inadequate coping mechanisms (Othman et al., 2022). Youngminds (2020) revealed about 74% of young respondents could still get mental health treatment, such as assistance from school and university counsellors, a helpline or SMS service, a peer support group, or inpatient care, whereas 26% could no longer get such support. According to a survey, for certain situations where there was no assistance or limited support for young people, it was not due to no support has been provided (Youngminds, 2020). Still, it was difficult or impossible for them to seek help from home, such as having no private room for confidential interactions in their homes or not believing digital support's effectiveness (Youngminds, 2020).

In terms of gender, this study revealed that the female students' mean score for anxiety and depression were greater than those of male students. The findings from earlier investigations by Hosseini and Khazali (2013), Mokhtari et al. (2013), and Sundarasen et al. (2020) are related to this outcome. The high mean score of anxiety and depression among female students in the current study may be attributed to likely of reporting mental illness than males since MCO started. These findings are in line with those of the "Canadian Perspective Survey, Series 2: Monitoring the Effect of COVID-19", in which poor mental health was reported by 24.9% of women and 19.0% of men (Moyser, 2020). Additionally, Alahmadi (2019) noted that female students (66%) in Saudi Arabia had a higher prevalence of anxiety and depression than male students (22.4%). Women tend to report their symptoms more frequently than men do; thus they are some typical reasons why they are impacted more frequently. These gender gaps can also be explained the social differences. Men can, for instance, develop a greater sense of control over the circumstances, which can serve as a varying level of fear-reduction (Hosseini & Khazali, 2013). Men students may also be subject to higher coping strategies in times of uncertainty and stressful situations, especially during the pandemic.

This study also initiates a difference in anxiety scores, where those aged 25 and older scored much higher on anxiety levels than students aged 20 to 24. Older students experience anxiety about enrolling in or completing courses within a semester, as opposed to younger students, who experience less anxiety when taking specific exams or courses, but do not understand the relevance of the classes they are taking (Baloglu, 2003). The previous study, however, found that senior students reported lower levels of anxiety due to better time management and a reduced response to academic and psychological stress (Aysan, Thompson & Hamarat, 2010). Intriguingly, Shamsuddin et al. (2013)'s

study found that both the prevalence of depression and its symptoms rise with age. This can be result of university juniors and seniors having heavier workloads (Shamsuddin et al., 2013).

With regard to the field of the study, there is a significantly higher level of anxiety between the Faculty of Health Sciences than Accountancy during the MCO ($p<0.05$). However, there is no significant difference in level of depression between these two faculties. Such a result agrees with another study reported that 17.1% and 25.3% of medical students in Beijing and Wuhan had anxiety symptoms during the pandemic, which they were more severely affected by COVID-19 (Xiao et al., 2020). Al-Dabal et al. (2010) also revealed medical students (49%) reported being often stressed due to their studies more than the College of Applied Studies and Community Service (CASCS) students (39%). A previous study demonstrated a significant correlation between the final exam postponement and anxiety among health sciences students (Yadav et al., 2021). When the WHO declared the COVID-19 outbreak a pandemic, many students were preparing to take the final exams, but a sudden announcement of total lockdown shattered their expectations (Yadav et al., 2021). A separate comparative study of medicine, law, and undergrad students at McGill University, which show nothing too much difference in depression level among both faculties medical and non-medical students (Helmers et al., 1997). It is interesting to note that in the study by Sundarasen et al. (2020), students in management-related studies appeared to have a higher level of anxiety than health sciences and medical students in Malaysia, possibly because the health care students have a well-known background in the medical and they would know the plan during the pandemic progress. Students from both faculties may, however, attempt to adapt to the pandemic situation in this study even though they have never encountered one before.

The psychological effect of negatives, as well as potentially beneficial ones, is interesting and important. Social distancing during the MCO can lead to anxiety and depression, especially for people concerned that they are vulnerable to the infection of COVID-19. Additionally, they have limited personal finances, are secluded, and are unable to leave their housing. Social distance challenges human communication ability and has a range of implications for mental health, including panic, anxiety, grief, and depression. Julianne Holt-Lunstad, a psychologist at Brigham Young University, and colleagues conducted a meta-analaysis research in 2015 and discovered that prolonged social isolation can increase one's risk of dying by up to 29% (Holt-Lunstad et al., 2015). Pandemics could hurt poor and vulnerable communities, especially patients with serious mental health (Druss, 2020). Persons with current psychiatric disorders were at higher risk of recurrence because of panic, anxiety, and disturbance of the social rhythm. In fact, social distancing pushed people to spend a lot more time at home. When someone still lives in a toxic home setting, spending more time at home can be highly challenging (Shanmugam et al., 2020). Families choose to stay at home due to the order of MCO and the restrictions on trips outside the home, which could bring the family closer and offer them an opportunity to bond. Improved family bonding could increase support for the family, which is crucial in the face of crises such as the COVID-19 pandemic. Family support is essential for people with mental illness to fulfil their physical, psychological, and spiritual needs (Avasthi, 2010). Understanding their psychological distress, such as depression, anxiety, and stress, as well as the correlates of these symptoms, would enable appropriate screening and intervention programmes to prevent mental health problems in this population (Shamsuddin et al., 2013). If students with mental health disorders can receive adequate care, the prevalence and seriousness of disorders among college students will become less significant (Hunt & Eisenberg, 2010).

A few limitations of this study included lower student response rates and only assessed Health Sciences and Accountancy students in UiTM Puncak Alam. Future research should compare the levels of anxiety and depression among all fields of studies across all Malaysian universities. Besides, this study did not establish a causal relationship between variables like the factors and the effects of anxiety and depression on the students, especially in their academic performance. Instead, it was limited to quantitatively describing the conditions of anxiety and depression among the students. Future research should include study on the factors that lead to undergraduate students feeling anxiety and depression during the MCO which subsequently affect their life.

5. Conclusion

The empirical evidence from this study indicates that more than one-third of Health Sciences and Accountancy students from UiTM Puncak Alam, Selangor were vulnerable to anxiety and depression during the MCO. According to statistical study, final year undergraduate Health Sciences and Accountancy students throughout the pandemic period had different levels of anxiety and no difference in their levels of depression. According to the study's findings, university students were battling mental health issues, particularly during the MCO, regardless of their faculties.

This study demonstrated the critical need for the government, particularly the Ministry of Higher Education and Ministry of Health, and society to raise awareness about the anxiety and depression that university students experience. Therefore, it is necessary to build effective mental health screening, counselling, preventative, and daily monitoring techniques using online tools like HADS evaluations in order to gather information on their mental health and create better benchmarks over time.

6. Co-Author Contribution

The authors affirmed that there is no conflict of interest in this article. Author 1 carried out the literature review, statistical analysis, interpretation of the results and overlook the writeup of the whole article. Author 2 wrote the introduction, research methodology and did the data entry.

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