RESEARCH ARTICLE

Level of stress, anxiety, and depression symptoms among health sciences students in UiTM Puncak Alam Campus during COVID-19 pandemic

Nurul Al Syuhailin Mhd Zaki, Padma A. Rahman*

[1]*Centre of Occupational Therapy Studies, Faculty of Health Sciences, Universiti Teknologi MARA Cawangan Selangor Kampus Puncak Alam, 42300 Bandar Puncak Alam, Selangor, Malaysia*

***Corresponding Author**

Padma A Rahman
padma553@uitm.edu.my

Abstract:

The coronavirus illness disease 2019 (COVID-19) epidemic has had a tremendous influence on people's life across the world, particularly after the World Health Organization proclaimed a worldwide pandemic in the second week of March 2020. This study aims were to determine the level of stress, anxiety and depression among health sciences students during the covid-19 pandemic in UiTM Puncak Alam Campus. The cross-sectional study was conducted in UiTM Puncak Alam at Selangor state. All the students studying from year 1 to year 4 and health science students aged 18 years old and above that willingly to participate in the study were included. The Depression, Anxiety, Stress Scale 21 (DASS 21) was used to determine the level of stress, anxiety and depression symptoms among health sciences students. Among 191 students enrolled in the study, majority 78 (40.8%0 were in the age group of 24-25 years old, 145 (75.9%) were females, 73 (38.2%) were studying in semester eight and 45 (23.6%) was from Environmental Health and Safety course with 169 (88.5%) was from a full-time mode of study. Results shown that 122 (63.9%) of the students reported having anxiety symptoms, 107 (56.0%) were reported with depression symptoms and 82 (42.9%) were reported with stress. The depression traits show majority of health sciences students were in moderate stage (16.8%). Majority of students were in mild stage (18.3% and 17.8%) for stress and anxiety traits. Occupational therapist could play a role in educating stress management techniques as the majority of the students had milder degrees of illness that needed to be addressed quickly before they manifested into severe versions.

Keywords: *Covid-19, stress, anxiety, depression, health science students*

1. INTRODUCTION

The outbreak of coronavirus infection or also known as COVID-19 has had a significant impact on people's lives across the world ever since the World Health Organization (WHO) declared a worldwide pandemic in the second week of March 2020 (Islam et al., 2020). The pandemic has the potential to have physical, academic, financial, and psychological impact on college students. To avoid widespread transmission of the COVID-19 virus among employees and the young adult population, higher-education institutions across the country have shifted rapidly from face to face to virtual learning (Kecojevic et al., 2020). Academic activities remained restricted, teaching and learning were delivered through online platforms, and university students were not permitted to visit the university's buildings. Since April 2020, all lessons have been delivered electronically (Woon et al., 2021). During the pandemic, universities all over the world have had to close their campuses for students to implement social distancing procedures, and COVID-19 has posed a threat to both society and university students' mental and physical health (Mohd Nasir et al., 2021).

The COVID-19 pandemic is regarded as a threat to students' physical and emotional health. The serious worldwide danger and impact of the COVID-19 pandemic on several elements of human survival, health, well-being, and development (Ahorsu et al., 2020). Women and younger persons had greater levels of COVID-19-related depression, anxiety, and stress (Huang & Zhao, 2020). As of May 29, 2022, Malaysia had received reports of 4 503 734 confirmed cases and 35 665 fatalities from COVID-19. The total case fatality rate is 0.8 percent (WHO, 2022).

Depression creates mental health problems in young people, particularly university students, as a result of stress from schoolwork and independent living. Depression can lead to disability and even death (Islam et al.,2018). Students attending university come from a range of socioeconomic backgrounds, which might introduce a number of mental health risk factors (Mofatteh,2020). Depression is one of the most common mental health concerns among students. According to a YouGov study, 77% of students with mental health issues were depressed.The mean prevalence of depressive disorders in university students was 30.6 %, which was much higher than rates reported in general populations

and through epidemiological data, the prevalence of depression increased by 18.4 % between 2005 and 2015. Female students were shown to be more likely to acquire severe depression disorder symptoms compared to males (Mirza, 2021).

Mastery of the topic can have an impact on students' self-esteem, anxiety level, and development of depressive symptoms. Final-year students who acclimate to the university environment and achieve expertise in their topic may handle academic pressure better than freshmen who transition from secondary school to university life (Mofatteh,2020). Nearly 90% of first-year students in the United Kingdom experienced stress and anxiety when transitioning to university life, a figure that is five times greater than ten years before (Kotera, Ting, & Neary, 2020) A cross-country comparison study found that the weaker students' confidence in managing their country's pandemic, the higher their degree of anxiety (Pramukti et al., 2020).

Various psychological and psychiatric research undertaken in a variety of established and developing nations over the last few decades have revealed that the prevalence of stress, anxiety, and depression (SAD) is greater among university students than in the general population. Students pursuing degrees with practical components are compelled to travel to unfamiliar locations for fieldwork and job experience, which can add to their stress and anxiety (Mofatteh, 2020). Students are under a great deal of stress in many aspects of their lives. The mix of a hectic lifestyle and schooling is causing stress and despair. Stress reduction is advantageous and may result in superior performance. Uncontrolled stress, on the other hand, can cause tiredness, depression, and a variety of other illnesses (Rana, Gulati, & Wadhwa, 2019) High levels of stress were documented among medical and engineering students, emphasizing the importance of medical care and interventions (Reddy, Menon, & Thattil, 2018). Fear of poor performance and a delay in completing studies are additional factors that contribute to student stress during COVID-19 (Malik & Javed, 2021).

This study aims were to determine the level of stress, anxiety and depression among health sciences students during the Covid-19 pandemic in UiTM Puncak Alam Campus.

2. MATERIALS AND METHODS

This was a cross-sectional study in which all outcomes for each respondent were measured at the same time over the study period. Cross-sectional studies were employed because they allow for the comparison of several variables at the same time. The locations of this study are at the Faculty of Health Sciences, Universiti Teknologi Mara (UiTM) Selangor, Puncak Alam Campus.

The number of respondents is 191 participants who are agreeing to participate in this research study and understand the purpose and nature of and participate voluntarily. The number is chosen based on population of health sciences students which are 1594 students.

For the inclusion criteria, the age of the respondent must be 18 years and above. The respondents must be a student from the Faculty of Health Sciences from UiTM Puncak Alam who are pursuing a degree from year 1 to year 4. For the exclusion criteria, the respondents who not eligible to participate in this research is the one who does not meet the established age, a long-distance learning student and the postgraduate students.There are two parts of the questionnaire form that was needed to be answered by the participants.

The first part was about the demographic data of the participants which are gender, age, course, mode of study and semester. The second part of the form was the instrument used for level of stress, anxiety and depression which is the Depression Anxiety and Stress Scale (DASS 21). The DASS 21 developed by Lovibond and Peter Lovibond at the University of New South Wales in 1995 designed to measure the negative emotional states of depression, anxiety and stress. DASS 21 is the short version of a self-report measure that was originally developed to encompass the full range of symptoms of both anxiety and depression while providing maximum differentiation between the two constructs. This questionnaire consist of items on how the respondent might have felt during the past week. Negative emotional symptoms were assessed using 21-item DASS-21. It consists of depression, anxiety, and stress dimensions with seven items representing each. All items were rated using the scale of 0 to 4, (0) (did not apply to me at all), (1) applied to me to some degree or some of the time, (2) applied to me to a considerable degree or a good part of the time, and (3) applied to me very much, or most of the time. The interpretation of the score, which was then classified as normal, mild, moderate, severe, or extremely severe. It was determined that this scale has good internal consistency which the English version of DASS-21 had a score of 0.940 (Lee & Kim, 2020)

All study objectives then addressed by descriptive and statistical analysis of the population of health science students. Spearman Correlation was used to identify the relationship between stress, anxiety, and depression among health sciences students at UiTM Puncak Alam Campus during the covid-19 pandemic. Kruskall- Wallis test and Man- Whitney test were used in identifying the relationship between demographic profiles and level of stress, anxiety, and depression among health sciences students in UiTM Puncak Alam Campus.

3. RESULTS AND DISCUSSION

A total of 191 participants are participating in the study. Table 1 shows the descriptive analysis of the participants in this study. Among the respondents, most of the participants were female n=145 (75.9%) while n=46 (24.1%) were males. The age group of the respondents were from 18 to 26 years old and above with a mean age of 2.59 (SD = 0.96). There were 6 students between 18 to 19 years old (3.1%), 15 students

between 20 to 21 years old (7.9%), 61 students between 22 to 23 years old (31.9%), 31 students were 26 years old and above (16.2%), and the most participants were between 24 to 25 years old n=78 (40.8%). From the total respondents, n=42 (22.0%) was Occupational Therapy students, n=10 (5.2%) were Physiotherapy students, n=17 (8.9%) was Nursing students n=28 (14.7%) were Nutrition and dietetics students, n=6 (3.1%) were Medical Imaging students, n=10 (5.2%) were Optometry students, n=33 (17.3%) were Medical Laboratory students and with most of the participants were from Environmental, Health and Safety students n=45 (23.6%).

The table also shows there was a total of n=9 (4.7%) were in the first semester, n=7 (3.7%) were in the second semester, n=11 (5.8%) were in the third semester, n=25 (13.1%) were in the fourth semester, n=22 (11.5%) were in the fifth semester, n=35 (18.3%) were in the semester sixth, n=9 (4.7%) were in the semester seven, and the most participants participating in this study is from semester eight n=73 (38.2%). For the mode of study, there was 22 students from part time students (11.5%) and 169 students were from fulltime mode of study students (88.5%).

Table 1: Demographic data of the respondents (n=191)

Variables	**n (%)**
Gender	
Female	145 (75.9)
Male	46 (24.1)
Age	
18-19	6 (3.1)
20-21	15 (7.9)
22-23	61 (31.9)
24-25	78 (40.8)
26>	31 (16.2)
Course	
Occupational therapy	42 (22.0)
Physiotherapy	10 (5.2)
Nursing	17 (8.9)
Nutrition and dietetics	28 (14.7)
Medical imaging	6 (3.1)
Optometry	10 (5.2)
Medical laboratory	33 (17.3)
Environmental health and safety	45 (23.6)
Mode of study	
Fulltime	169 (88.5)
Partime	22 (11.5)
Semester	
First	9 (4.7)
Second	7 (3.7)
Third	11 (5.8)
Fourth	25 (13.1)
Fifth	22 (11.5)
Sixth	35 (18.3)
Seven	9 (4.7)
Eight	73 (38.2)

3.1. Level of stress, anxiety and depression symptoms among health sciences students

From the total score of Depression, anxiety, stress scale 21 (DASS-21), the result has been categorized into mild, moderate, severe and very severe. A depression score for mild range from 8 to 9, moderate range from 10 to 13, severe range from 14 to 17 and very severe range from 18 and above. The anxiety score for mild range from 5 to 6, moderate range from 7 to 8, severe range from 9 to 10 and very severe range from 11 and above. For depression score for mild range from 6 to 7, moderate range from 8 to 10, severe range from 11 to 14 and very severe range from 15 and above. From table 2, the data showed that from 191 health sciences students, 122 (63.9%) of them were reported with anxiety, 107 (56.1%) were reported with depression and 82 (42.9%) were reported with stress. The depression traits in the table shows majority of health sciences students were in moderate stage (16.8%). Both in stress and anxiety traits, majority of students were in mild stage (18.3%) and (17.8%).

Table 2: Level of stress, anxiety and depression symptoms among health sciences students (n=191)

	Normal	**Mild**	**Moderate**	**Severe**	**Extremely Severe**
	N (%)	**N (%)**	**N (%)**	**N (%)**	**N (%)**
Depression N=107 (56.1%)	84 (43.9)	30 (15.7)	32 (16.8)	25 (13.1)	20 (10.5)
Anxiety N=122 (63.9%)	69 (36.1)	34 (17.8)	30 (15.7)	28 (14.7)	30 (15.7)
Stress N=82 (42.9%)	109 (57.1)	35 (18.3)	28 (14.7)	14 (7.3)	5 (2.6)

This study shows similarity of result based on lower prevalence of depression. Research by Wickramasinghe et al. (2019), found that depression was prevalent among 19.0 % (n = 100) of university students in Sri Lanka. Another study by Basnet et al. (2012) found that 29.78 percent (n = 94) of the students in their research in Nepal were depressed. Moreover, Ibrahim et al. (2013) conducted research in Saudi Arabia and found that 36.5 % (n = 450) were depressed, with 21.8% having borderline depression and 14.7% having severe depression. In addition, a study conducted in Ethiopia discovered that the total frequency of depression among university students was 27.7 % (n = 300), (Berhanu, 2015).

Similar to this study where there is greater level of stress, anxiety and depression study by Wang (2020) research have revealed that college students experienced greater levels of stress, anxiety, and depression during the COVID-19 pandemic. There also study found that 25% had moderate-to-severe depression, 28% anxiety and 11.6% stress (Verma & Mishra, 2020) This fining also similar to research that found that students had increased negative feelings when several colleges decided to discontinue face-to-face classes and move students in response to rising COVID-19 concerns (Choi,2020).

3.2. Comparing DASS stress, anxiety, depression components between gender

From table 3, Man-Whitney test is used to compare whether there is a difference in the DASS component for both gender and it compare the DASS stress, anxiety and depression components between female and male. The used of medians and interquartile range is presented because it is a non-parametric test. The result shows that the measure of central tendencies for DASS stress of the female n=145 with median (IQR) 7.00(6.00) is higher than male with Z=-1.707. The two medians for gender are not significantly different (p=0.088). For the DASS anxiety, the median (IQR) 6.00(6.00) for female n=145 is higher than male with Z=-0.657. Two medians for gender for DASS anxiety is not significantly different (p=0.511). Lastly, for DASS depression the table show female n=145 and male n=46 is similar in median (IQR) with Z= -0.921 and the two medians is not significantly different (p=0.357).

Table 3: Comparing DASS stress,anxiety,depression components between gender

Variable	Gender	n	Median (IQR)	Z statistic[a]	P value[a]
DASS stress	Female	145	7.00(6.00)	-1.707	0.088
	Male	46	5.50(4.00)		
DASS anxiety	Female	145	6.00(6.00)	-0.657	0.511
	Male	46	5.00(6.00)		
DASS depression	Female	145	6.00(7.00)	-0.921	0.357
	Male	46	6.00(6.00)		

The relation of demographic data with depression, anxiety and stress was also discussed in this study. This study found that female is higher to experience stress, anxiety and depression similar to study by Mirza,2021 found that female medical students were more likely than male students to experience anxiety and depression.

3.3 The relationship between stress, anxiety and depression among health science students.

Table 4 shows the relationship between stress, anxiety and depression among health science students in UiTM Puncak Alam based on DASS-21. It was found that depression score was positive strong correlation between stress (rs = 0.830, p < 0.001) and anxiety (rs = 0.783, p < 0.001). The anxiety score was positive strong correlation with stress (rs = 0.841, p < 0.001).

Table 4: Relationship between stress, anxiety and depression among health science students (n=191)

Variables	**Depression**	**Anxiety**	**Stress**
Stress score	0.830 [a] (< 0.001) [b]	0.841[a] (< 0.001) [b]	1.000[a] (< 0.001) [b]
Anxiety score	0.783 [a] (< 0.001) [b]	1.000[a] (< 0.001) [b]	0.841[a] (< 0.001) [b]
Depression score	1.000[a] (< 0.001) [b]	0.783[a] (< 0.001) [b]	0.830[a] (< 0.001) [b]

The result found that strong positive correlation between stress, anxiety, and depression among health sciences students during the covid-19 pandemic. The study by Yadav et al., (2021) revealed the anxiety and depression in health science students were shown to be related to the province, internet use for education, and exam postponement. These correlations may be shared by students in other fields as well. Anxiety was shown to be related to depression (r = 0.574, p = 0.000), depression to stress (r = 0.646, p = 0.000), and anxiety to stress (r = 0.684, p = 0.000) in prior research (Fauzi et al., 2021). Previous study by Son et al. (2020) found the COVID-19 outbreak caused higher stress and anxiety in 138 people (71%) which multiple factors were found as contributing to students' elevated levels of stress, anxiety, and depressed thoughts.

4. CONCLUSION

The study shown health science students demonstrated a significant increase in degree of anxiety levels as the covid-19 pandemic progressed. The health science students were at risk of depression because high level of stress will lead to depression. Through this study, it shows the level of stress is higher in female compared to male. University students have different level of stress, anxiety and depression during the pandemic. Most study found the anxiety and depression is closed related to each other like this study where the level of stress and depression share the same median value. This study also revealed there is a strong positive correlation between stress, anxiety, and depression among health science student

during pandemic covid 19. Lastly, this study shows there is no relationship between demographic profiles such as gender, age, mode of study, semester and course with level of stress, anxiety, and depression among health sciences students.

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