Assessment and Mitigation of Mental Health among Students using Quantitative Ibm Spss Approach during Covid-19 in Public Higher Learning Institutions

Hasanathul Bashariyah Bt Kamaludeen[1*], Wan Nor Liza Wan Mahadi[2,3]

[1]Department of Chemical Engineering, Faculty of Engineering, Universiti of Malaya, Malaysia

[2]Department of Electrical Engineering, Faculty of Engineering, Universiti of Malaya, Malaysia

[3]Electromagnetic Radiation & Devices Research (EMRD), Faculty of Engineering Universiti of Malaya, Kuala Lumpur, 50603, Malaysia

[*]Corresponding Author

ABSTRACT

The issue of student mental health in higher education is growing. The COVID-19 pandemic has greater focus on this vulnerable group. This study aims to give a comprehensive assessment of the impact of the COVID-19 pandemic on the mental health of Universiti students. 200 students participated in a survey by using the GAD-7 and PHQ-9 screening tests to assess the state of mental health of Malaysian Universiti students. The data was analysed using quantitative methods. The IBM Statistical Product and Service Solutions (SPSS) version 27.0 assessment of mental health revealed that 44.0% of such 88 students were experiencing mild anxiety symptoms. During this COVID-19 outbreak, 74 students (37.0%) experienced mild depressive symptoms at a greater level. Significant findings, however, revealed that 25 students (12.50%) and 24 students (12.00%), respectively, suffer from severe anxiety and depressive symptoms. A significant correlation of at least $r=0.147$ exists between the students' level of anxiety, depression, and duration of the students staying alone or away from their families. These findings have encouraged the researcher to propose a model for mitigating mental health issues among Universiti students for consideration by Universities.

Keywords: Universiti students, Mental health, IBM SPSS version 27.0, PHQ-9, GAD-7

1   Introduction

According to the World Health Organization (WHO), coronavirus disease (COVID-19) is a newly discovered disease-causing coronavirus. The majority of COVID-19-infected patients will develop mild to moderate respiratory symptoms.

The COVID-19 outbreak reached Malaysia on January 25, 2020. On March 18, 2020, the national government issued a stringent Movement Control Order (MCO). To prevent the virus from being transmitted, all private and public gatherings were prohibited during this time period. Hence, class conduction in Universities in Malaysia started virtual online teaching. An alarming rate of fatalities has been reported which involves students of higher learning institutions. Cognitive, behavioural, and emotional well-being are the references for mental health. Abnormal stress and depression might be the cause of these conditions which would lead to concerning scenarios such as suicidal attempts and self-injury.

This paper aims to classify significant stressors associated with the COVID-19 pandemic and to identify their impact on the mental health of Universiti students. First, to assess and analyse the mental health of Universiti students during COVID-19; second, to identify and categorise the potential mental health

stressors of COVID-19 on Universiti students; and third, to propose a mitigation strategy for mental health concerns faced by Universiti students.

2   Literature Review

Mental health is a condition of well-being in which an individual recognizes his or her potential, is able to cope with everyday stressors and works productively. Mental health involves more than the absence of mental diseases or disabilities. The World Health Organization (WHO) constitution defines mental health as "a condition of complete physical, mental, and social well-being". Mental health is an important concern for individuals, communities, and societies. According to Keyes, there are three components of mental health. Important elements include emotional, psychological, and social health. "Students in the United Kingdom, Canada and United States reported deteriorating mental health of at least 70%, (C.L.M. Keyes, 2014). "Furthermore, adolescence is a crucial period of time for the discovery of new passions and the assertion of personal and social beliefs and values. Besides that, peer relationships transform during adolescence in order to provide adolescents with stronger support and connections when they spend less time with adults and participate in supervised activities (Roult et al. 2016)."

3   Methodology

This paper focused on the quantitative assessment and mitigation of higher learning institution students' mental health during COVID-19. Students in this study are impacted by the sudden transition in learning mode and living alone or away from their families. An online survey was conducted with 200 Universiti students to assess their mental health status. The study was conducted between May and August of 2021. To achieve a varied pool of samples, students from four different Universities, comprising 50 students, were selected from different states in Malaysia and from diverse fields of study, such as engineering, economics, and business, among several others. The survey was utilized to examine the student's mental health based on anxiety and depression. In this study, the self-administered questionnaire comprised three sections: demographic information, GAD-7 and PHQ-9 screening tests.

3.1   General Anxiety Disorder-7 (GAD-7)

The respondents were questioned on a range of areas related to their level of anxiety, including nervousness, restlessness, annoyance, etc. As demonstrated in Table 3.2, a higher score indicates that the students require assistance from professionals. The list of GAD 7 questions is shown in Table 3.1.

Table 3.1: *GAD-7 Questions*

No.	Questions		
1	Feeling nervous, anxious or on edge	5	Being so restless that it's hard to sit still
2	Not being able to stop or control worrying	6	Becoming easily annoyed or irritable
3	Worrying too much about different things	7	Feeling afraid as if something awful might happen
4	Trouble relaxing		

Table 3.2: *Scores of GAD-7*

Score	0 - 4	5 - 9	10 - 14	≥15
GAD-7 Level of Symptoms	Minimal	Mild	Moderate	Severe

3.2   Patient Health Questionnaire-9 (PHQ-9)

PHQ-9 test was to identify the prevalence and severity of depressive symptoms. PHQ-9 questions as shows in Table 3.3 only provides an overview of student's mental health condition based on the scoring rate as shown in Table 3.4 obtained from the test.

Table 3.3: *PHQ-9 Question*

No.	Questions		
1	Little interest or pleasure in doing things?	6	Feeling bad about yourself or that you are a failure or have let yourself or your family down?
2	Feeling down, depressed, or hopeless?	7	Trouble concentrating on things, such as reading the newspaper or watching television?
3	Trouble falling or staying asleep, or sleeping too much?	8	Moving or speaking so slowly that other people could have noticed or restless that you have been moving a lot more than usual?
4	Feeling tired or having little energy?	9	Thoughts of hurting yourself in some way?
5	Poor appetite or overeating?		

Table 3.4: *Score of PHQ-9*

Score	0 - 4	5 - 9	10 - 14	15 - 19	20 - 27
PHQ-9 Level of Symptoms	None or Minimal	Mild	Moderate	Moderately Severe	Severe

3.3   Statistical Analysis

The analysis of questionnaires was conducted quantitatively by obtaining respondents' scoring values. All gathered information to be imported into IBM Statistical Product and Service Solutions (SPSS) version 27.0 and Microsoft Excel. Taking into account the frequency, mean, standard deviation and Pearson Correlation, descriptive statistics for demographic data, PHQ-9 and GAD-7 screening tests were analysed.

4   Results and Discussion

4.1   Results

4.1.1   Anxiety symptoms level of respondents using GAD-7

Figure 4.1 illustrates that of the total number of respondents, 88 (44.0%) encountered mild anxiety symptoms in the two weeks prior to the survey, 54 (27.0%) have experienced minimal anxiety symptoms, and 33 (16.50%) have experienced moderate anxiety symptoms. However, 25 students (12.50%) exhibited

severe anxiety symptoms. Although 54 students have minimal anxiety symptoms, the total number of students with mild, moderate, and severe anxiety symptoms is alarmingly high.
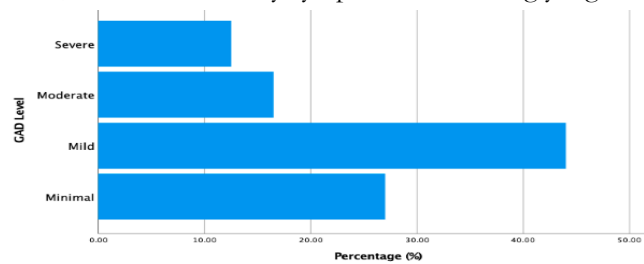

Figure 4.1: *Bar chart of student's level of anxiety symptoms*

Furthermore, male students have demonstrated a greater prevalence of mild anxiety symptoms than female students. In addition, the number of students with mild, moderate, and severe general anxiety disorders is greater than the number of students who exhibit no or minimal anxiety symptoms.

Table 4.2: *GAD-7 gender-based comparison*

Gender / Anxiety	Female	Male	Total
N	107	93	200
Mean	8.149500	7.139800	7.680000
Std. Deviation	4.799380	4.889190	4.855460
Std. Error of mean	0.463970	0.506990	0.343330

Table 4.3: *GAD-7 age-based comparison*

Age (years old) / Anxiety	18 - 20	21 - 23	24 - 26	> 26
N	42	85	46	27
Mean	8.21430	7.58820	8.10870	6.40740
Std. Deviation	3.55127	4.66316	5.75124	5.52797
Std. Error of mean	0.54797	0.50579	0.84797	1.06386

Table 4.2 provides statistical support for the finding that female participants are significantly more anxious than male students based on the results of the survey. In Table 4.3, students between the ages of 18 and 20 had the greatest general anxiety symptoms compared to students of other ages. In addition, students older than 26 have the least anxiousness throughout their MCO stay alone or away from family.

4.1.2   Depressive symptoms level of respondents by using PHQ-9

As shown in Figure 4.2, the survey revealed that 74 students (37.0%) exhibited mild depressive symptoms, with male students surpassing females. Concerning the fact that 12.00% of students, including 15 females and 9 males, exhibit severe depressive symptoms over the course of this study period. In addition, there is no significant difference between the number of students who reported none or minimal depressive

symptoms and the number of students (12.50%) who experienced severe symptoms. The descriptive statistical analysis shown in Table 4.4 confirms that female students are significantly more depressive than male students. In Table 4.5, students aged 24 till 26 had the highest depressive symptoms compared to other aged groups, whereas students aged 26 experience the fewest depressive symptoms during their MCO stay alone or away from their family.
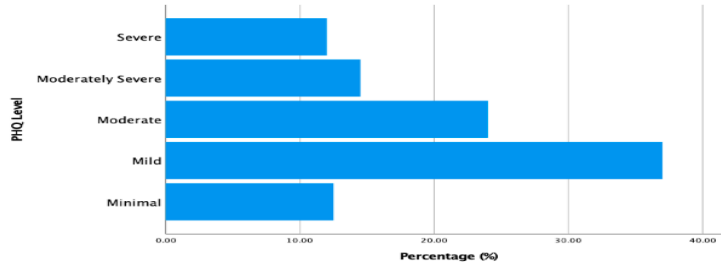

Figure 4.2: *Bar chart of percentage of depressive symptoms*

Table 4.4: *PHQ-9 gender-based comparison*

Gender / Depression	Female	Male	Total
N	107	93	200
Mean	11.4860	10.0215	10.8050
Std. Deviation	6.36969	5.83464	6.15519
Std. Error of mean	0.61578	0.60502	0.43524

Table 4.5: *PHQ-9 age-based comparison*

Age (years old) / Depression	18 - 20	21 - 23	24 - 26	> 26
N	42	85	46	27
Mean	9.6667	11.2118	12.4783	8.33330
Std. Deviation	4.79159	6.32661	6.12005	6.50444
Std. Error of mean	0.73936	0.68622	0.90235	1.25178

4.1.3 Pearson Correlation

Table 4.6: *Pearson Correlation between the level of anxiety, depression, and duration of staying*

		Anxiety	Depression	Duration of staying
Anxiety	r	1	.7390**	.1470*
	Sig.(2-Tailed)		.0000	.0380*
Depression	r	.7390**	1	.1380*

	Sig.(2-Tailed)	.0000		.0520*
Duration of Staying	r	.1470*	.1380	1
	Sig. (2-Tailed)	.0380	.0520	
N	200			
Correlation is significant ** at the 0.01 level (2-Tailed) * At the 0.05 level (2-Tailed)			r = Pearson correlation	

The experimental data shown in Table 4.6 reveal that the level of anxiety, depression and duration of students living alone or away from their families during the COVID-19 outbreak have correlations of at least r=0.147. With a correlation coefficient of r=0.739, the correlation between anxiety and depression was determined to be the greatest among those between depression and duration of stay with anxiety. At r=0.147, there is also a significant correlation between the anxiety factor to the duration of student staying alone or away from their family.

4.2   Discussion

According to the findings, students who experience moderate anxiety symptoms are more likely to be diagnosed with an anxiety disorder. The severity of their symptoms necessitates additional evaluation, including a mental status examination, diagnostic interview, and referral to a mental health specialist. The most concerning situation arises when students exhibit severe anxiety symptoms and likely requires active therapy, additional evaluation and referral to a mental health professional is required.

Students specifically those between the ages of 18 and 20, were much more anxious than older students, according to this study. Generally, young people are constantly on social media and the information available or shared on social media may have significantly contributed to the student's rising anxiety levels (Xiang, Y.T., 2020).

This is consistent with the findings of a link between psychological symptoms and younger age groups. "Restrictions on outdoor activities and age-related hormonal changes and greater exposure to social media-related misinformation may account for the observed increase in symptoms with age (Qin J and Wang H et al., 2020)." Students who stayed alone had higher levels of anxiousness than those who stayed with friends or family given that they are generally apart from their loved ones. Additionally, the unexpected threat to their security and safety during this outbreak may have made them feel lonely or isolated and presented numerous challenges.

The majority of females have experienced symptoms of anxiousness. "Female students are more prone than males to develop an anxiety disorder, as demonstrated by well-documented studies in psychiatric epidemiology (Carmen P. McLean, 2011)."

Majority of the students which are 37% experienced mild depressive symptoms in which student's functional impairment and period of symptoms is then taken into consideration and the healthcare professional makes a clinical assessment concerning therapy. Similar treatment is recommended for students with moderate symptoms of depression. Furthermore, students with moderately severe and severe depressive symptoms are recommended to seek appropriate treatment for depression from medical professionals, including psychotherapy, antidepressants, and a combination of treatments, if necessary (Dr. Kurt Kroenke, 2001).

Female students experience more depressive symptoms than their male counterparts. Similarly, an experimental study conducted by Carlos Izaias Sartoro revealed that depression and anxiety in students are greater during the COVID-19 pandemic than prior to it and that this is especially noticeable for female students (Carlos Izaias Sartoro, 2020).

With a score of M=12.4783, students between the ages of 24 and 26 were found to have a significant presence of depressive symptoms. The concern associated with this finding is that the majority of students in this age range are in their final year of study and their internships and final year research projects had to be put on pause due to the outbreak. Moreover, students had become depressed out of concern that they might fall behind academically. Students emphasised that online education could not meet their graduation requirements. The COVID-19 issue posed a significant challenge for graduates to achieve their academic and employment goals in the future.

The researcher believes that all risk factor causes are interconnected and that the risk factors that led to these significant findings may have also had a significant impact on the correlation. Similarly, past research has focused on the anxiety caused by COVID-19, with the concern of losing friends, family and loved ones due to this dreadful pandemic being the most intense point of response.

4.3   Mitigation model to improve mental health of students

Firstly, the establishment of Universiti mental health policy. The policy intends to establish a framework for promoting the mental health of all students, including suicide prevention programs. In addition, to expand and enhance students' access to community and expert resources. Secondly, the awareness of early indicators. Principals of a residential college and lecturers should be aware that some disinterest, worry, greater stress among students is to be expected. Effective communication is required during this outbreak. Thirdly, the establishment of mental health practices into coursework. Students may participate in extracurricular activities, online social organisations, and online Universiti social events. Lecturers or professors may also be accessible to students virtually. Online study partners and groups are two strategies to establish social ties. The reach of mental health awareness to students can be incorporated into the framework of the curriculum. Moreover, formation of efficient group programmes. Extreme competitiveness and stress might promote depressive symptoms and antisocial behaviours. Therefore, the formation of class cooperative groups is important. In addition, appoint a mental health therapist. Students at the Universiti level have access to a confidential and free in-house counselling service provided by highly certified psychotherapists and counsellors to aid them in addressing and overcoming distressing situations. Moreover, establishment of 'buddy system'. In a buddy system, the mental health association in each Universiti provides mental health support to students on a more intimate scale. Consequently, a designated facilitator monitors a group of five to seven students. Their primary responsibility is to ensure that all of their "buddies" understand the significance and well-being of their mental health.

5   Conclusion

This paper was able to demonstrate that Universiti students perceived anxiety and depression symptoms during COVID-19. Good partnership between the Universities and government will provide Universiti students with appropriate, accurate, and economically-focused psychological support in order to combat the rise in mental health issues. To aid in the formulation of policies for the protection of the health and well-being of students, the researcher recommends conducting more in-depth investigations at various institutions of higher education.

6   Declarations

6.1   Competing Interests

There is no conflict of interest.

6.2   Publisher's Note

AIJR remains neutral with regard to jurisdiction claims in published maps and institutional affiliations.

References

[1]   Abdullah, N.A., et. al. (2021). Malaysian mental healthcare performance. Technical report 2016. MOH. Retrieved from.https://www.moh.gov.my/moh/resources/Penerbitan/Laporan/Umum/Mental%20Healthcare%20Performance%20Report%202016.pdf

[2]   Abdul Rahman, N. (2021, July 10). UiTM Kedah Students Dies on Suspicion of Study Stress. Berita Harian. https://www.bharian.com.my/berita/kes/2021/07/837942/pelajar-uitm-kedah-meninggal-dunia-disyaki-akibat-tekanan-belajar

[3]   Barr, Bonny. (2014). Identifying and addressing the mental health needs of online students in higher education. Universiti of West Georgia, 17(2).

[4]   C.L.M. Keyes. (2014). Mental health as a complete state: how the salutogenic perspective completes the picture. Department of Sociology, Emory Universiti, 179 – 192.

[5]   C.P. Mclean et. al. (2011). Gender differences in anxiety disorders: prevalence, course of illness, comorbidity and burden of illness. Journal of Psychiatric Research, 45, 1027 – 1035.

[6]   Carlos et. al. (2020). Impact of covid-19 pandemic on mental health of medical students: a cross-sectional study using GAD-7 and PHQ-9 questionnaires. Research Ethics Committee of Institution.

[7]   Kurt Kroenke et. al. (2001). The PHQ-9: Validity of a brief depression severity measure. J Gen Intern Med 2001, 16.

[8]   Sheela Sundrasen et. al. (2020). Psychological impact of COVID-19 and lockdown among Universiti students in Malaysia: implications and policy recommendations. International Journal of Environmental Research and Public Health, 17(6206).

[9]   Son C., et. al. (2020). Effects of COVID-19 on college student's mental health in the United States: Interview Survey Study. Journal of Medical Internet Research, 22(9).

[10] Spitzer, R., et. al. (2006). A brief measure for assessing Generalized Anxiety Disorder. Archives Of Internal Medicine, 166(10), 1092.

[11] W. Cao et. al. (2020). The psychological impact of the COVID-19 epidemic on college students in China. Psychiatry Research, 287.

[12] Wang H. et. al. (2020). The psychological distress and coping styles in the early stages of the 2019 Coronavirus Disease (COVID-19) epidemic in the general Mainland Chinese population: A Web based Survey. PLoS One, 15(5).

[13] Wong, L., et al. (2021). Escalating progression of mental health disorders during the COVID-19 pandemic: Evidence from a nationwide survey. PLoS ONE, 16(3).

[14] WHO, (2018). Mental health: strengthening our response. WHO. Retrieved from https://www.who.int/news-room/fact-sheets/detail/mental-health-strengthening-our-respons

[15] WHO, (2019). The WHO special initiative for mental health (2019 – 2023): universal health coverage for mental health. WHO

[16] Xiang, Y.T. et. al. (2020). Timely mental health care for the 2019 Novel Coronavirus outbreak is urgently needed. The Lancet, 7.