

# COVID-19: Mental Health and Academic Performance Among University Students

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## ABSTRACT

Mental health status may contribute differently to academic outcome. Hence, the main objective of this study is to assess the association of mental health with academic performance in online learning. Online learning involves time and space separation between the instructors and the learners, depending fully on the collaboration of digital technologies and online telecommunication system. This research applied a quantitative research method, using a survey-based questionnaire, namely 12-Item General Health Questionnaire (GHQ-12) for mental health status and students' current grade point average (GPA). A total of 140 undergraduates from all faculties who experienced online learning in University Malaysia Sarawak (UNIMAS) were invited and their demographic profiles were analysed through the descriptive and correlational analysis using Spearman correlation tests. Results showed a significant relationship between mental health and undergraduate students' academic performance. Specifically, the loss of confidence factor was the only mental health factor that demonstrated a significantly negative, but weak correlation with their GPA. Hence, according to the findings from this research, it can be concluded that the higher the score for mental health status, the higher the tendency for the students to experience negative mental illness. Consequently, this affects their academic performances.

Keywords: Well-being, academic performance, asynchronous learning, mental health

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## INTRODUCTION

Academic performance has been one of the indicators of how well a student learns, takes in, and applies knowledge in their examinations. Since the Movement Control Order (MCO) was first announced on the 18th of March 2020, most of the academic institutes in Malaysia are forced to shut down their campuses and adapt to a full online learning environment, evolving from the traditional learning method. In view of the Covid-19 pandemic, students heavily relied on online resources (i.e., learning materials such as lecture notes, journal articles and related documents) and in doing so, they need excellent network and connectivity. However, a high-speed internet access comes with a price. Most of the rural and remote areas suffer from poor digital coverage as well as impaired network speed. And to subscribe to internet data plans, it requires a substantial amount of income resources, which is difficult for underprivileged students from rural and remote areas whose family members' income is limited (e.g., B40 households whose monthly income is less than RM4800.00). Moreover, ownership of the latest technological device (e.g., smartphones, tablets, computers, or laptops) is beyond their means. Hence, the efficiency of this online learning is unknown and a majority of the students are concerned and worried about its implementation though it was the only available alternative (Nguyen & Pham, 2020).

To better maintain academic grades, students' self-regulation plays a role to manage academic performance (Wandler & Imbriale, 2017). As most of the past studies emphasized on the capability and potential of traditional and blended learning, there is still limited study on the effectiveness of educating and delivering knowledge via online platforms. Some researchers found that students who were involved in blended learning performed better than those who learned under the conventional classroom setting (Keller, Hassell, Webber, & Johnson, 2009; Paul & Jefferson, 2019). McCutcheon, O'Halloran & Lohan (2018) suggested that blended learning is more effective as the participants scored better as compared to those who learned through the online learning approach. Regardless of where the learning process occurs, having a stable emotion contributes greatly to the students' academic results. Past research revealed that a student's mental health status was strongly correlated with their educational performance (Bostani, Nadri, Nasab; 2014; Khanam & Bukhari, 2015; Samouei, Fooladvand, Janghorban, & Khorvash, 2015; Shankar & Park, 2016).

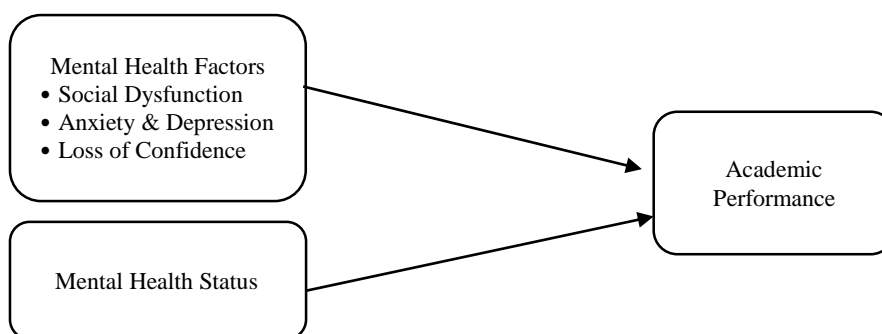
Many researchers have found that students tend to adopt maladaptive or dysfunctional coping mechanisms rather than adaptive traits like seeking social help, mostly caused by embarrassment and the fear of being judged by professionals, and suspicion towards treatment efficacy as well as wariness about the effectiveness of the treatment plan (Benjet, 2020; Hunt & Eisenberg, 2010; Liang, *et al.*, 2020). In accordance with the findings of Kamaludin *et al.* (2020) regarding Malaysian undergraduates' coping mechanism in response to the MCO, they chose to accept and get accustomed to the stressors in their lives, rather than seek psychological assistance from others for the sake of protecting their "self-esteem" and ego since they are pressured by the social stigma that disclosing one's emotions is a sign of weakness or vulnerability.

To date, evidence is lacking as to whether student academic performances will be affected by online learning due to the pandemic as most research focused more on the economic sector as a result of COVID-19 (Chudik, Mohaddes, Pesaran, Raissi, & Rebutti, 2020; Pak *et al.*, 2020). Also, there are limited studies that investigated the relationship between mental health and academic performance among undergraduate students during online learning (Son, Hegde, Smith, Wang, & Sasangohar, 2020). The undergraduate students were not particularly scrutinised, implying that the undergraduates were not the main target group when the researchers aimed to study the link between student academic achievement and their mental health during the pandemic. Researchers in the past also failed to study the students' academic performance in online learning as the traditional classroom setting was the main focus. It is crucial to examine the mental health of the undergraduates whether they are mentally stable attending online learning or if they encounter difficulties in response to the pandemic. Hence, this study hopes to shed light on the association between mental health and academic performance in online learning. Table 1 illustrates the research objectives, hypotheses and statistical analysis test for this study.

**Table 1.** Summary of research objectives, hypothesis and statistical analysis test

Research Objectives	Hypothesis	Statistical Analysis Test
To assess the association between mental health factors and the undergraduate students' academic performances in GPA	H <sub>a1</sub> There is a significant relationship between mental health factors and the undergraduate students' academic performances in GPA	Spearman Rank- Order Correlation
To assess the association between mental health status and the undergraduate students' academic performances in GPA	H <sub>a2</sub> There is a significant relationship between mental health status and the undergraduate students' academic performances in GPA	Spearman Rank- Order Correlation

Furthermore, this study strives to provide further understanding on the relationship between mental health factors (i.e., social dysfunction, anxiety and depression, loss of confidence), mental health status and academic performances of the undergraduates in online learning. The conceptual framework of this study is shown in Figure 1.



**Figure 1.** Conceptual framework of the relationship between mental health status, mental health factors and academic performance

## MATERIALS & METHODS

This study employed a quantitative method for data gathering and analysis (Aliaga & Gunderson, 2002). The data for the present study was collected at the University of Malaysia Sarawak (UNIMAS) using a random sampling technique regardless of gender, age and geographical location. The sample population consisted of undergraduates from eight (8) different faculties in UNIMAS. A sample of 573 was needed for this study using the method proposed by Krejcie and Morgan (1970). A survey method was implemented using a set of questionnaires which was distributed via Google Form online. The random sampling technique was applied by sending out texts and survey links on social media platforms to ask for the respondents' consent regarding their willingness to participate. The questionnaires were divided into two sections, namely:

### Section A: Demographic Factors

This section consists of basic questions regarding respondents' background. The academic performance is measured based on their current GPA for Semester 2, 2020/2021 where full online learning is implemented.

### Section B: Health

In this study, health was measured using the General Health Questionnaire-12 (GHQ-12) developed by Goldberg and Williams (1988). This 12-item GHQ contains 3 factors namely social dysfunction, anxiety and depression, and loss of confidence.

**a) Social dysfunction.** There are six (6) items altogether, and each item was rated on a four-point Likert scale ranging from 0 (Better than usual) to 3 (Much worse than usual). An example of an item is "Have you recently been able to concentrate on whatever you're doing?".

**b) Anxiety and depression.** For anxiety and depression, all the four (4) items were rated on a four-point Likert scale ranging from 0 (Not at all) to 3 (More than usual). An example of an item is "Have you recently been feeling unhappy or depressed?".

**c) Loss of confidence.** For loss of confidence, a total of two (2) items were rated on a four-point Likert scale ranging from 0 = Not at all to 3 = More than usual. An example of an item is "Have you recently been losing confidence in yourself?".

In the present study, the total health score ranged from 0 to 36 was used to determine participants' mental health. The higher the score, the poorer the participants' mental health status.

Prior to data collection, a preliminary text message was created regarding the study. The message is linked to the questionnaires which was then disseminated via official WhatsApp group chat to all faculty's representatives. Respondents' consents were obtained, and data collection started from 1<sup>st</sup> of March 2021 until end of the month. They were also informed that their privacy will be kept confidential at all costs. All collected data is solely for research purposes and will not be disclosed to any parties without granted permission.

### Data Analysis

Data were analyzed using *The Statistical Package for the Social Science (SPSS) version 27*. Descriptive statistics and Spearman correlation analysis were done to investigate if students' mental health (status and factors) affected their academic performance.

### Validity and Reliability

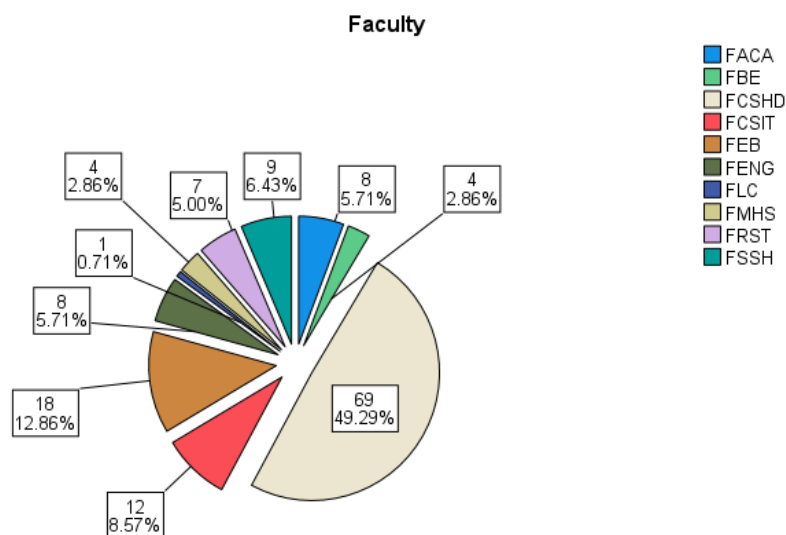
For the GHQ-12 questionnaire, previous research has found that the questionnaire had high validity and reliability, measuring in terms of the Cronbach's Alpha value. Kashyap and Singh (2017) who applied the same questionnaire in the context of male tannery workers in Kanpur, India found that it yielded a high Cronbach's Alpha value of 0.93. This is consistent with the result by Hankins (2008) who had a similar result, namely 0.90. Other researchers had a similar finding as well whereby the value is around 0.82 to 0.88 though it was not as strong as compared to the previous findings (Golderberg & Williams, 1988; Petkovska, Bojadziev, & Stefanovska, 2015). In the perspective of Zulkefly and Baharudin (2010), the GHQ-12 questionnaire is considered reasonable, valid, and reliable to be applied as the analysis showed a Cronbach's Alpha of 0.70, which is satisfactory. As for validity, the GHQ-12 is valid and appears to be a good proxy for measuring psychological distress in Malaysia context (Noordin & Panatik, 2016; Yusoff, Fuad, & Yaacob, 2009). For this study, the researchers relied on face validity. It involved obtaining an expert's judgment who reviewed and determined the quality of the items (i.e., social

dysfunction, anxiety and depression, and loss of confidence) is reasonable measure (Babbie, 2020) of the chosen variables.

## RESULTS

### Demographic Information

Despite the required 573 sample size, only 140 students participated due to the difficulty to obtain participants during pandemic. Figure 2 presents the distribution of respondents by faculty. In terms of gender, female respondents ( $n=106$ ) dominated their male ( $n=34$ ) counterparts with a percentage of 75.7% and 24.3% respectively. For the faculty background, the highest participation was the Faculty of Cognitive Sciences and Human Development (FCSHD) with a total number of 69 students (49.3%), followed by Faculty of Economics and Business (FEB),  $n=18$  (12.9%); Faculty of Computer Science and Information Technology (FCSIT),  $n=12$  (8.6%); Faculty of Social Science and Humanity (FSSH),  $n=9$  (6.43%); Faculty of Applied and Creative Arts (FACA) and Faculty of Engineering (FENG) with 8 respondents (5.71%,  $n=8$ ) each, Faculty of Resource Sciences and Technology (FRST),  $n=7$  (5%), Faculty of Building and Environment (FBE), and Faculty of Medicine and Health Sciences (FMHS),  $n=4$  (2.9%), and Faculty of Language and Communications (FLC),  $n=1$  (0.7%), respectively. The distribution of respondents by faculty is shown in Figure 2 below:



**Figure 2.** Distribution of respondents by faculty

In relation to the grade point average (GPA), majority of the students scored more than 3.49 ( $n=77$ , 55%), and only 2 students (1.4%) scored less than 2.00. Meanwhile, 39.3% ( $n=55$ ) and 4.3% ( $n=6$ ) scored in the category of 3.00-3.49 and 2.50-2.99 respectively, as shown in Table 2 below.

**Table 2.** Academic performance distribution of the respondents (GPA)

GPA	Frequency	Percent (%)
< 2.00	2	1.4
2.50 - 2.99	6	4.3
3.00 - 3.49	55	39.3
> 3.50	77	55.0
Total	140	100.0

### Hypothesis Testing

**H<sub>a1</sub>:** There is a significant relationship between mental health factors and the undergraduate students' academic performances in GPA

For mental health factors and academic performance, the result shows that only the third factor illustrate a statistically significant relationship with the GPA. Factor of Loss of Confidence (F3) shows a significant value with  $p$ -value = 0.005. However,  $r = -0.238$  suggests that the relationship is negative and weak. In other words, the respondents' academic performance is expected to decline as their level of loss of confidence increases. For other factors, there are no significant correlational relationship found, as tabulated in Table 3.

**Table 3.** Spearman correlation between mental health status and mental health factors on academic performance (GPA).

		<b>Correlation</b>	
		<i>p</i> -value	<i>r</i> -value
Mental health status		.031	-.182*
Mental health factors			
(i)	Social dysfunction	.117	-.133
(ii)	Anxiety depression	.209	-.107
(iii)	Loss of confidence	.005	-.238*

\*. Correlation is significant at the 0.05 level (2-tailed).

This is consistent with previous findings that suggest that students who experience predominantly negative mental health, particularly loss of confidence, tend to perform poorly in their studies, both at the local and international level (Adeoye, 2015; Afolayan, Donald, Onasoga, Babafemi, & Juan, 2013). Loss of confidence is found to be a significant predictor for lower academic performance, aside from social dysfunction, anxiety and depression factors. The fact that the students' loss of confidence has affected their grades in terms of GPA is supported by previous studies which suggest that self-confidence is an essential component that has a positive contribution to their learning process (Sharma, 2017; Akbari & Sahibzada, 2020). Restricted physical meet-ups prevents students from seeking effective help from friends, lecturers, or families. The universities' sudden shift from blended learning to full online learning has caused them to be anxious and uncertain about everything, including the effectiveness of online learning itself (Selvanathan, Hussin, & Azazi, 2020; Sundarasan *et al.*, 2020). It is reported that some university students worry about the effectiveness and usefulness of online learning as compared to traditional face-to-face learning and this further affects their confidence as to whether they will be satisfied with the provided modules and whether they can perform better (Landrum, 2020; Nguyen & Pham, 2020).

**H<sub>a2</sub>: There is a significant relationship between mental health status and the undergraduate students' academic performances in GPA**

Table 3 also shows the Spearman correlation test with  $p$ -value of 0.031. This implies that there is a significant relationship between mental health status and undergraduate students' academic performances in GPA. Hence, the alternative hypothesis is accepted. Furthermore, Spearman's correlation coefficient ( $r$ -value) equals -0.182, depicting that both variables show a negative and weak correlation. This suggests that students' academic performance will be negatively affected, i.e., as the GHQ-12 scores acquired by the respondents show an increment, their academic performances will decline in terms of their GPA. This finding is in line with the Wang *et al.* (2020) study which reported that nearly 40% of the tertiary-level students are stressed out due to the sudden pandemic, experiencing difficulty in concentrating (90.74%), deteriorating academic performance (87.71%), difficulty in adapting to the distance learning (76.03%), and increase in the amount of workload (34.78%). Moreover, students who lacked confidence in using technology, experience difficulties to assess online materials or were unable to attend online lectures, may experience negative learning outcomes as they do not feel a sense of engagement cognitively and socially (Bower, 2019; Chaturvedi, Vishwakarma, & Singh, 2021).

**Summary of the Result of Quantitative Analysis**

Table 4 illustrates the summary of the analysis results carried out according to the research objectives and hypotheses.

**Table 4.** Summary of quantitative analysis results

Research Objectives	Hypothesis	Results
To assess the association between mental health factors and the undergraduate students' academic performances in GPA	H <sub>a1</sub> There is a significant relationship between mental health factors and undergraduate students' academic performances in GPA	H <sub>a1</sub> is accepted
To assess the association between mental health status and the undergraduate students' academic performances in GPA	H <sub>a2</sub> There is a significant relationship between mental health status and undergraduate students' academic performances in GPA	H <sub>a2</sub> is accepted

## IMPLICATIONS

The COVID-19 pandemic has brought about a negative impact on university students psychologically and emotionally. The current findings provide important information for academic authorities in universities (e.g., Student Affairs Division), in that the mental health of undergraduate students has a significant effect on their academic performance during online learning sessions. The study also suggests that loss of confidence was highly correlated with the GPA of undergraduate students. In other words, the students' academic performance declined as there was a decrease in their confidence level. The COVID-19 pandemic had led to many uncertainties, leading many to experience a certain level of stress and anxiety. Also, the imposed social restrictions had forced everyone to minimise their physical contact with one another, and this led to social isolation. Such social disconnection affected tertiary-level students as they lost a sense of realism and human connection.

Hence, it is important to have supportive networks with others, such as friends, the university and families. According to past researchers, one's quality of life tends to elevate or improve when social support is received, and those who live alone are perceived to experience a higher level of anxiety and depression (Bolotov *et al.*, 2021; Elmer, Mepham, & Stadtfeld, 2020; Wei, 2020). In other words, it is important to have a supportive network such as friends and the university (Sundarasan *et al.*, 2020; Stempel, Alemi, Morgan, & Ingram, 2020) and from family (Abdullah, Murad, Teoh, & Mohamad, 2020). This research provides insight to the university management on the importance of students' mental status, as the neglect of it ruins the quality of students' life and their academic performance.

## RECOMMENDATIONS AND CONCLUSION

The main findings of this research established that students' mental health should not be neglected. It not only affects their academic performances but also their quality of life. It is recommended that universities should raise student awareness on mental health by sharing informative tips, including how to recognise mental illness symptoms, how to approach peers with similar issues, and where to find support. Furthermore, universities are advised to put in extra effort by offering a full-day online support service so that every student can have access to consultation and therapeutic counselling from university counsellors or psychologists.

For first-year students, their emotional and psychological well-being is important too, considering that they are freshmen with no clear guidance from seniors since they are exposed to online learning for the first time and it is a brand new chapter of life for them. Hence, the Student Representative Council should consider recruiting volunteers to provide a helpline service to first-year students in navigating university life.

Lastly, it is recommended that future research be more comprehensive in the inclusion of more demographic factors such as household conditions, family financial status, geographical factors and private institutions, for a more accurate research outcome.

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