

## Original Research Article

# Impact of COVID-19 pandemic on medical and non-medical students at a private university in Malaysia

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## ABSTRACT

**Background:** Worldwide the COVID-19 pandemic affected people in various ways. Despite all the constraints students were in a unique position of being thrown into a lockdown situation where they had to learn from home and online. This had its own repercussions, and our aim was to study the effect of learning, as well as the mental and financial impact it had on the students at this private university.

**Methods:** Using a pre-validated google questionnaire, we conducted a cross-sectional study amongst the undergraduate students from the various faculties. We used a modified DASS-21, with 15 questions rated on a Likert's scale to assess mental health. Academic assessment and the financial impact assessment had 8 questions each. Sample size was 177. Cronbach's for overall internal consistency was 0.860.

**Results:** We had 208 respondents, where 66.3% were female and 62% Chinese. The mean score for medical students (mean=38.3, SD=12.9) was slightly higher than non-medical students (mean=37.3, SD=11.6). Overall non-medical students faced more challenges than the medical students academically as seen in poor contact with lecturers (chi square 10.73,  $p=0.030$ ), their home environment was not conducive for learning (chi square 4.38,  $p=0.036$ ) and have significantly more distraction from family members (chi square 4.87,  $p=0.027$ ). Financially, a significant number of non-medical students struggled to pay for food expenses (chi square 12.92,  $p\leq 0.001$ ).

**Conclusions:** There was no significant difference between medical and non-medical students on mental health issues. Non-medical students were impacted more academically and financially.

**Keywords:** Impact of COVID-19, Mental health, Pandemic, Private university

## INTRODUCTION

In 2020, with the onset of the pandemic and together with the dramatic loss of lives, the public health system faced unprecedented challenges. In October that year, the World Health Organization declared that the pandemic had caused devastating impact on the lives of tens of millions of people around the world, putting them at the risk of falling into extreme poverty and worsening the existing inequalities. There was a tremendous impact worldwide in terms of economy, health, politics, learning and teaching.<sup>1-3</sup> The sudden halt in economic activities

resulting from the global lockdown and the imposition of other restrictions have resulted in job losses and business closures and this has seriously affected those in informal employment and in low-income groups.<sup>4,5</sup> In addition to this, the loss of lives due to the pandemic has further compounded these economic challenges, causing a massive strain on social safety nets. In terms of the health systems worldwide, the pandemic has diverted much needed resources from routine healthcare, therefore impeding progress in health. Less urgent health service had to be cancelled or postponed.<sup>6</sup> This has further posed long-term implications for global health and economic stability.

In Malaysia, the Government imposed a nationwide lockdown on the 18th of March 2020 with the aim to curtail the spread of COVID-19 in the country. In tandem with this, as businesses had to close, and people were forced to work from home, the number of unemployed persons increased.<sup>7</sup> The year 2020 was undoubtedly a tough one for job holders, as the COVID-19 pandemic and the accompanying lockdowns hampered business activities, causing many businesses to shut down and their employees to lose their jobs. It was found that many Malaysians were affected by income loss especially those who were self-employed and unemployed.<sup>8</sup> This has negatively affected many people's health especially mental health and created new barriers for people already suffering from mental illness, and especially for women.<sup>9,10</sup>

Amongst university students, mental health in higher education has been of increasing concern. The COVID-19 pandemic situation has brought this vulnerable population into renewed focus. Due to the long-lasting pandemic situation with measures such as lockdown and stay-at-home orders, the COVID-19 pandemic has brought negative impacts on university students.<sup>11</sup> The lockdown and social distancing measures have led to closures of schools, training institutes and higher education facilities in most countries. There is a paradigm shift in the way educators deliver quality education-through various online platforms. Transitioning from traditional face-to-face learning to online learning can be an entirely different experience for the learners and the educators, which they must adapt to with little or no other alternatives available. Despite the challenges posed to both educators and the learners, the online learning, distance, and continuing education have become a panacea for this unprecedented global pandemic. Students tend to have emotional instability due to lack of physical activities and reduced social time with friends. Didactic classes became E-learning, and this produced its range of challenges.<sup>12,13</sup> Based on a survey of 486 students from different Universities in Malaysia, these students faced a varied range of challenges in learning.<sup>14</sup>

Students are our assets, and their welfare is of importance to the University. Therefore, our aim here was to find the different impacts the COVID-19 pandemic had on the students here. We wanted to specifically look at learning, mental impact and on the financial impact it had on the students, and to determine if there was a difference amongst the medical and non-medical students here.

## METHODS

We conducted a cross-sectional study among the undergraduate students from all the faculties at this private University. Consent was obtained prior to study, and this was incorporated into the questionnaire. Data was collected using a pre-validated questionnaire that was distributed using Google forms. Medical students were those from the Faculty of Medicine and the non-medical

students here were those from the Faculty of Pharmacy, Dental faculty and those studying in the Faculty of Nursing or Physiotherapy.

### *Inclusion criteria*

All undergraduate students from medical, dental, pharmacy, nursing and physiotherapy who gave consent to take part in the survey were included in this study.

### *Exclusion criteria*

We excluded the students from the School of Foundation and those who did not give consent.

### *Questionnaire*

A pre-validated self-created questionnaire was distributed as Google Form among the medical and non-medical students in the University to collect the data. The questionnaire had 3 sections in addition to the demographic data. The three sections were on mental health, academic challenges and on the financial impact.

The mental health section consisted of 15 questions that were modified from the DASS-21 questionnaire with questions that were relevant to the situation in this campus, and we used that to assess overall mental health. This was rated on a score of 1 to 5 on the Likert scale where 1 is strongly disagree and 5 is strongly agree. We then calculated the overall score for mental health which ranged from 15 to 45. We used the mean mental health score to compare the difference between the medical and the non-medical students.

Academic assessment had 8 questions that were rated using a score of 1 to 5 on the Likert scale where 1 was strongly disagreed and 5 was strongly agreed. The financial impact questionnaire was based on our literature review, and we had 8 questions that addressed the current situation faced by the students. The response required was either a "yes" or a "no"

### *Sample size*

The total number of students from the Faculties of Dentistry, Medicine, Pharmacy, Nursing and Physiotherapy was approximately 1500. We used Raosoft sample size calculator to calculate the sample size<sup>1</sup>. Based on this population of 1500, with a confidence interval of 95%, margin of error of 7%, and a response distribution of 50%, the required sample size was 177. Participants were randomly selected between the various faculties.

Using the Statistical Package for the Social Sciences (SPSS), the reliability test was conducted on 30 samples. We checked for internal consistency for questions on mental health. Using Cronbach's alpha, based on 15 variables, we had a score of 0.929.

The academic assessment initially had 10 questions, but due to poor reliability we had to remove 2 questions. Therefore, we had 8 questions to test for academic assessment.

Internal consistency for academic assessment based on 8 variables using Cronbach's alpha was 0.735

The financial impact questionnaire was based on our literature review, and we had 8 questions. Internal consistency using Cronbach's alpha for financial assessment was 0.755.

The overall internal consistency reliability as calculated for the 31 variables that were used was 0.860.

### **Ethical consideration**

After ethical approval to conduct the study, data was collected from August to September 2021. Informed consent was taken from all the participants prior to the answering of the questionnaire. No personal identifying data were collected in the study and all data was kept confidential. Ethical approval was given by the University from Faculty of Medicine Research and Human & Animal Ethics Committee (FOMRHAEC). FORMHAEC reference number: FOM/SSM/2021/55.

### **Statistical analysis**

Data was presented in frequencies and percentages. We calculated mean and Standard Deviation. We used descriptive analysis for the demographic data. We used the t test to determine the difference in mental health between the 2 groups of students. Chi-square was used to test the difference in the financial and academic status of the medical and non-medical students respectively. A p value of less than 0.05 was considered significant.

## **RESULTS**

We had a total of 208 respondents, mostly females (138, 66.3%) and Chinese (129, 62%). Most of them were from small cities (125, 60.1%). Most of the students were from the medical faculty (106, 51%).

### **Mental assessment**

Table 2 shows the overall mental assessment of respondents. Respondents who fully agreed that feeling stressed when they are unable to go out due to pandemic shows the highest percentage (16.3%) among the other variables. Most of the respondents fully disagreed with having difficulty in breathing. Among the variables, respondents who disagree with feeling scared without any reason show the highest percentage (33.2%) while respondents who agree with getting nervous easily show the highest percentage (28.8%).

**Table 1: Demographic variables of the respondents.**

Variable	Frequency (N)	Percentage (%)
<b>Gender</b>		
Male	70	33.7
Female	138	66.3
<b>Race</b>		
Chinese	129	62
Malay	5	2.4
Indian	73	35.1
Others	1	0.5
<b>Age in years</b>		
18	1	0.5
19	6	2.9
20	20	9.6
21	44	21.2
22	101	48.6
23	18	8.7
24	14	6.7
25	4	1.9
<b>Locality</b>		
Rural	19	9.1
Small city	125	60.1
Big city	64	30.8
<b>Course</b>		
Dentistry	40	19.2
MBBS (medical)	106	51.0
Nursing	13	6.3
Pharmacy	32	15.4
Physiotherapy	17	8.2
<b>Year of study</b>		
1	37	17.8
2	42	20.2
3	103	49.5
4	19	9.1
5	7	3.4
<b>Family monthly income</b>		
<RM3000	43	20.7
RM3000-RM6000	82	39.4
RM6000-RM9000	41	19.7
>RM9000	42	20.2

The overall mental health score of the respondents ranged from 14 to 67 with the lower score indicating better mental health. The score was normally distributed. Some students had overall poor mental health compared to others (Figure 1).

The mean score for medical students (mean=38.3, SD=12.9) was slightly higher than non-medical students (mean=37.3, SD=11.6).

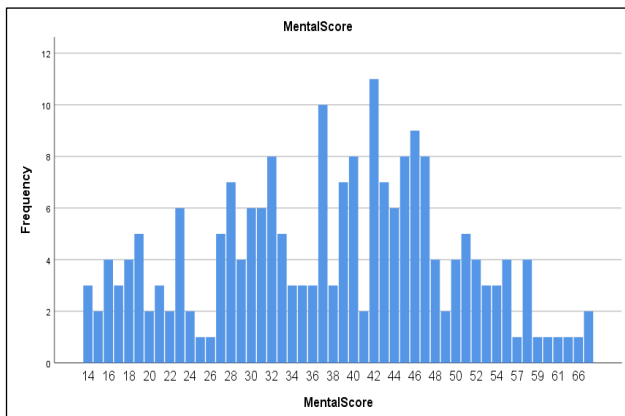
However, there was no significant difference between medical and non-medical students,  $t=0.6$ ,  $p=0.551$  in their

mental health score. Therefore, there was no difference in the impact of COVID-19 between the mental health of

medical and non-medical students in AIMST University (Table 3).

**Table 2: Mental assessment of respondents.**

Variable	Totally disagree N (%)	Disagree N (%)	Neutral N (%)	Agree N (%)	Fully agree N (%)
I get touched easily	14 (6.7)	41 (19.7)	80 (38.5)	51 (24.5)	22 (10.6)
I find it hard to wind down	20 (9.6)	60 (28.8)	64 (30.8)	46 (22.1)	18 (8.7)
I feel that I get nervous easily	15 (7.2)	40 (19.2)	60 (30.3)	60 (28.8)	30 (14.4)
I found it difficult to relax	24 (11.5)	66 (31.7)	61 (29.3)	38 (18.3)	19 (9.1)
I was intolerant of anything that stopped me from doing what I was doing	22 (10.6)	50 (24)	70 (33.7)	39 (18.8)	27 (13.0)
I felt scared without any reason	41 (19.7)	69 (33.2)	46 (22.1)	33 (15.9)	19 (9.1)
I have trouble in breathing	93 (44.7)	55 (26.4)	38 (18.3)	9 (4.3)	13 (6.3)
I feel stressed when I cannot go out due to the pandemic	28 (13.5)	50 (24.0)	47 (22.6)	49 (23.6)	34 (16.3)
I was worried about situations that made me feel nervous and make a fool of myself	34 (16.3)	42(20.2)	43 (20.7)	57 (27.4)	32 (15.4)
I wasn't worthy to anyone else	74 (35.6)	48 (23.1)	38 (18.3)	32 (15.4)	16 (7.7)
I do not experience any positive feeling	63 (30.3)	65 (31.3)	48 (23.1)	22 (10.6)	10 (4.8)
I found it difficult to initiate something to do	29 (13.9)	60 (28.8)	42 (20.2)	54 (26.0)	23 (11.1)
I had nothing to look forward to	60 (28.8)	56 (26.9)	44 (21.2)	28 (13.5)	20 (9.6)
I was not able be enthusiastic about anything	48 (23.1)	60 (28.8)	56 (26.9)	28 (13.5)	16 (7.7)
I felt that life was meaningless	85 (40.9)	50 (24.0)	35 (16.8)	21 (10.1)	17 (8.2)



**Figure 1: Overall mental health score of the respondents.**

**Table 3: Mental health score for medical and non-medical students.**

	Number	Mean	SD	t	P value
Medical students	106	38.29	12.89	0.597	0.551
Non-medical students	102	37.27	11.62		

### Academic assessment

The challenges faced by the students, both medical and non-medical are as in Table 4. Overall non-medical students faced more challenges than the medical students.

We found a significant difference amongst medical and non-medical students who had poor contact with lecturers (chi square 10.73,  $p=0.030$ ), their home environment was not conducive for learning (chi square 4.38,  $p=0.036$ ) and have significantly more distraction from family members (chi square 4.87,  $p=0.027$ ).

### Financial assessment

Both medical and non-medical faced some financial constraints during these times. A high number had their pocket money cut and about half the parents limit their spending expenses. Many (75.5% of medical students and 79.4% of non-medical students) had to learn to manage their monthly expenses wisely due to the COVID-19 pandemic. Some students took up a part time job (9.4% of medical and 14.7% of non-medical). Both categories of students faced similar situations. However, a significant number of non-medical students struggle to pay for food expenses (chi square 12.92,  $p\leq 0.001$ ) (Table 5).

**Table 4: Comparison between medical and non-medical students on the variables related to learning from home (number and percentage of those who responded “yes”).**

	Medical students (%)	Non-medical students (%)	Chi-square (X <sup>2</sup> )	df	P value
<b>Difficulty in accessing internet</b>	33.1	37.2	0.409	1	0.522
<b>Lack of interest in learning</b>	46.2	54.0	1.231	1	0.267
<b>Lack of contact with other students</b>	58.5	66.7	5.490	4	0.241
<b>Poor contact with lecturers</b>	45.3	58.9	10.731	4	0.030
<b>More difficult to study</b>	45.3	58.9	3.830	1	0.051
<b>Not happy with student’s teacher interaction</b>	31.2	40.2	1.863	1	0.172
<b>Home environment not conducive</b>	28.3	42.1	4.381	1	0.036
<b>Distraction from other family members</b>	33.0	48.0	4.871	1	0.027

**Table 5: Comparison on financial assessment by students (number and percentage of those who responded “yes”).**

	Medical students (%)	Non-medical students (%)	Chi-square (X <sup>2</sup> )	df	P value
<b>I struggle to pay for food expenses</b>	11 (10.4)	31 (30.4)	12.922	1	<0.001
<b>In the last four weeks, I have used my savings to make end meets</b>	24 (22.6)	27 (26.5)	0.412	1	0.521
<b>I have a part time job</b>	10 (9.4)	15 (14.7)	1.366	1	0.242
<b>I have a cut down of monthly pocket money from parents</b>	42 (40.0)	51 (50.5)	2.290	1	0.130
<b>My parents limit their spending expenses</b>	55 (52.4)	62 (60.8)	1.487	1	0.223
<b>I had to learn how to manage monthly expenses wisely</b>	80 (75.5)	81 (79.4)	0.461	1	0.497
<b>I have any arguments with parents about money</b>	14 (13.2)	16 (15.7)	0.259	1	0.611
<b>I get financial support from the government</b>	39 (36.8)	40 (39.2)	0.130	1	0.719

## DISCUSSION

### Mental health

Mental health affects the way a person thinks, reacts and interacts with others. During the pandemic, students were forced to be isolated at home with the only means of connecting via social media. Some were able to cope with this, but others could not. Our study showed that the highest level of stress was due to the students being unable to go out. Ordinary student curricular activities had to be stopped and with this the opportunities for students to bond with one another were also curtailed. This has been a problem in other countries as well.<sup>16</sup> Stress, anxiety and depression were common findings among students during the pandemic.<sup>17</sup>

From the overall mental score here, it is seen that some students were able to cope whilst others face mental health issues. Overall, here, it did not matter if they were medical or non-medical students. They were all impacted to about the same degree.

### Academic

Many academic institutions have been closed due to the increasing cases of COVID-19 in Malaysia. Many

universities including this University had to shift from face to face classes to online learning in order to prevent further transmission of the virus. This directly affected a significant number of students as many of them have difficulty assessing the internet or had internet connectivity issues.

Most students agree that online learning had a negative impact on interaction and connection between lecturers and students. Unfortunately, virtual courses individualize learning and restrict interaction with others. Students are feeling disconnected with their lecturers, their classmates, and the course itself.

Furthermore, most of the students feel discouraged and unmotivated to participate while taking courses virtually, their productivity level has decreased, and their understanding of the material has deteriorated as students are dealing with stress and trauma from the pandemic which may also be caused by isolation.

The reason could also be that the study materials including reference materials are not easily accessible. The harder the material is to obtain, the more demotivated the students will get to obtain knowledge. It is highly probable that even the lecturers may be stumbling to adapt to online teaching.



Many of their home environments are also not conducive for online learning and they face lots of distractions from family members. It is obvious that this pandemic has directly affected many student's academics as well as their social life.

### Financial

From our findings the most common financial problem faced by all students is the need to manage monthly expenses wisely. Lockdowns or quarantines are necessary as protective measures for physical health, but prolonged impositions can be detrimental. Their ability to manage their educational financial commitments would be of concern if their families faced loss of income due to job loss. This could be why almost half of their parents limit their spending expenses and have a deduction in their monthly pocket money. This pandemic has put students in a very challenging financial situation because there are still many who cannot afford to manage unexpected expenses, resulting in most of the students being forced to manage their pocket money wisely.<sup>18</sup> Financial planning is indeed crucial for the students to ensure their academic survival.<sup>19,20</sup>

We faced limitations in the conduct of this study in that the students were just coming back to the campus after the pandemic, and it was hard to get the response from the non-medical students despite using a google questionnaire. We perceive that some students would be still sensitive towards the impact of COVID-19 in their lives and would have just ignored the questionnaire as we had no way to follow up on which specific students had access to the questionnaire.

### CONCLUSION

Our findings show that there is no significant difference between medical and non-medical students in their mental health status during the Covid-19 pandemic. In terms of academic impact, both medical and non-medical students have been impacted to some extent with the non-medical students being impacted more. This difference was significant in three areas; their poor contact with lecturers, the home environment that was not conducive for learning and distractions from family members. The students faced financial challenges that put their education in jeopardy, had new living arrangements that made learning difficult, and often lacked the resources necessary to even log onto class online. There was a significant difference between the struggle to pay for food expenses between medical and non-medical students.

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