

*Health Impact Perceived by University Students at Three Sites in Asia:
Two Years Into the Pandemic*

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Abstract

Two years since the outbreak of the COVID-19 pandemic, education in universities is still being disrupted. Prolonged exposure to the pandemic situation may result in health-related problems for university students. In January 2022, we conducted an online survey in three universities in Bangladesh, Thailand, and Vietnam for a rapid assessment of students' perceived impacts on their health conditions. In total, 159 students from the three sites responded. Data were analyzed quantitatively and qualitatively. A third of the respondents reported that their health condition was impacted, while female students perceived more impact on health than males ($p < 0.001$). Over half of the respondents reported experiencing some stress, while students living in the dormitory had a higher tendency to perceive stress ($p < 0.05$). Moreover, students in higher grades tended to have higher perceived stress ($p < 0.01$) and higher perceived worry ($p < 0.001$). There were also significant differences in the level of perceived health impact, stress, and worry for the future among the students from the three sites, probably due to the characteristics of respondents in each site. These findings imply the need to address not only the quality of education but also to improve health support services for students on the campus.

Keywords: Bangladesh, Thailand, Vietnam, Online Class, Pandemic, Impact, Satisfaction

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Introduction

Countries in Asia were taking the earlier impacts of the COVID-19 pandemic, however, in general, experienced fewer fatalities compared to Europe and the USA (Miyawaki & Tsugawa, 2022). Nevertheless, the extent of the impact on Asian countries varies from country to country. Bangladesh, Thailand, and Vietnam are among the earliest and most affected by COVID-19 countries in Asia. Bangladesh was early affected by the pandemic, while Thailand and Vietnam were relatively successful in containing the pandemic throughout most of 2020 but have been experiencing an uncontrolled resurgent outbreak since April 2021.

The higher education sector of Asian countries has also undergone changes during the transition process to online learning. It must face the same challenges during the pandemic such as online class, digital transformation, social distancing, and lockdown. However, still little is known about the impacts of COVID-19 exposure on health and wellbeing, as well as the academic and daily life of students, and what are the needs to be supported. According to a study conducted in several countries in the Asia Pacific region, university students who are facing online learning challenges and future job opportunities are among the most at-risk group for psychological issues (Jiang et al., 2021). A survey in Thailand has reported that overexposure to COVID-19-related information is associated with the occurrence of psychological problems, including depression, anxiety, and insomnia (Mongkhon et al., 2021). It was reported that job hunting has become very challenging and stressful during the pandemic (Rachaniphorn, 2021).

Thailand's education was affected by the COVID-19 pandemic since early 2020, creating a transformation process to online education. A study conducted in 2021 on high school students across nine provinces has shown how online learning affects student satisfaction due to the COVID-19 pandemic (Kornpitack & Sawmong, 2022). So far, efforts have been put into reforming the learning management impacted by COVID-19 in higher education in Thailand (Joungtrakul et al., 2021; Nuankaew et al., 2021). However, the shreds of evidence about COVID-19 impacts on the university students' health and well-being in Thailand are still limited (Masuyama et al., 2021).

Bangladesh's education sector has introduced lockdown and other measures, including the closure of universities across countries in response to the pandemic. A study about the impacts on the education of dental and medical students has shown challenges such as installing e-learning transformation and introducing new approaches to teach skill practice for health science students (Chowdhury et al., 2022). Another study had shown that the students experienced a high impact on their studies and were concerned with their mental health due to the pandemic (Rahman et al., 2021).

For Vietnam, very few studies have been conducted with regard to the impacts of the pandemic on higher education. A study conducted in 12 universities has shown various challenges and acceptance of online learning in Vietnam amidst the pandemic (Hong & Quoc, 2021; Le et al., 2021). Another study reported that during the pandemic, nearly one-quarter of students were in a negative mood and depression, along with increasing patterns in sleeping time, body weight, and sedentary lifestyle (T. K. Tran et al., 2021).

For investigating the impact of COVID-19 pandemic at two years after the outbreak on students' perceived health and campus life well-being, we decided to conduct a preliminary

survey at three top national universities in three countries. Burapha University, established in 1955, has a long history of development and is a large public university in Thailand, hosting about 47,000 students. It has three campuses and 24 faculties including Medicine, Nursing, Public health, Allied health sciences, Education, Management, IT, Sport, Agriculture, etc. The respondents in our study were majorly students of Nursing. Rajshahi University, aka “the Cambridge of the East”, is the second-largest public university in Bangladesh, and one of the top research universities in Bangladesh. It hosts about 38,000 students in twelve faculties including Law, Veterinary, Agriculture, Engineering, Arts, Social science, Fishery, etc. The respondents in our study were majorly students of Science and Engineering. Hanoi National University of Education, established in 1951, is a public university, the largest teachers’ training university in Vietnam. It hosts more than 30,000 students in 25 faculties including Arts, History, Languages, Biology, Chemistry, etc. The respondents in our study were majorly students of Arts.

This paper aims to investigate the impacts of the pandemic on health and wellbeing, and the factors that may associate with as well as the academic and daily life of students. In addition, it investigates the need for support for their students to reduce any impact.

Method

A cross-sectional survey was designed using an online questionnaire using Google forms. The questionnaire included four-level Likert-like questions for quantitative analysis and open-ended questions for qualitative analysis. The questionnaire was adapted from the questionnaire used in a previous study (H.N. Tran, 2022). Participants were recruited in January 2022 by an announcement to several classes of undergraduate students. The objective of the survey was described on the front page of the questionnaire by clicking on the link provided. It was voluntarily to participate in this study. Participation information was fully anonymous, as no data to identify the person were recorded. We analyzed the data obtained quantitatively and qualitatively. Quantitative data were analyzed by SPSS Statistics version 27.0 for Windows (IBM Corp., Armonk, NY, USA). Qualitative data were analyzed by content analysis.

Results

Characteristics of respondents

Table 1 shows the characteristics of the respondents from each university by gender, enrollment status, year of enrollment, foreign student status, living status, and living place status. There are 78.9% of the respondents are female, and the proportion of female students from Burapha University and Hanoi Education University is higher than male.

Table 1. Respondents' characteristics

Variable	Value	Burapha U (N=68)		Rajshahi U (N=26)		Hanoi Edu U (N=65)		Total (N=159)	
		N	%	N	%	N	%	N	%
Gender	Female	57	83.8%	7	38.9%	52	85.2%	116	78.9%
	Male	11	16.2%	11	61.1%	9	14.8%	31	21.1%
Enrollment status	Undergraduate	57	83.8%	20	76.9%	29	44.6%	106	66.7%
	Master	8	11.8%	6	23.1%	0	0%	14	8.8%
	Doctoral	3	4.4%	0	0%	0	0%	3	1.9%
	Undergrad (OJ)	0	0%	0	0%	36	55.4%	36	22.6%
Year of enrollment	1st year	4	5.9%	6	23.1%	27	41.5%	37	23.3%
	2nd year	12	17.6%	13	50.0%	18	27.7%	43	27.0%
	3rd year	23	33.8%	4	15.4%	18	27.7%	45	28.3%
	4th year	29	42.6%	3	11.5%	2	3.1%	34	21.4%
Foreign student	Foreign student	16	23.5%	3	11.5%	1	1.5%	20	12.6%
	Local student	52	76.5%	23	88.5%	64	98.5%	139	87.4%
Living status	Alone	40	58.8%	10	38.5%	1	1.5%	51	32.1%
	With family	5	7.4%	3	11.5%	56	86.2%	64	40.3%
	With roommate	23	33.8%	13	50.0%	8	12.3%	44	27.7%
Living place	Dormitory	27	39.7%	10	38.5%	2	3.1%	39	24.5%
	Rental	41	60.3%	16	61.5%	8	12.3%	65	40.9%
	Home	0	0%	0	0%	55	84.6%	55	34.6%

Regarding the enrollment status of the respondents, two-thirds of the total number of respondents are undergraduate students. High numbers of undergraduate students came from both Burapha and Rajshahi Universities. At Hanoi Education University, over half of the respondents are with “on-the-job” undergraduate status, who attend university for a degree on a distance learning or non-regular schedule basis. There are some respondents who are graduate students from Burapha and Rajshahi universities. The types of respondents also infer about their daily academic activities. Undergraduate students are the students who enrolled in a four-year bachelor’s course, spending most of the time attending the lecture or practice sessions under the supervision of faculty staff. Graduate students are more likely to be involved in research activities.

Looking at the year of enrollment of respondents, there are more respondents in the 4th year and 3rd year at Burapha University, while more respondents are in the 2nd year and 1st year at Rajshahi University. At Hanoi Education University, more students are in the 1st year. Since this survey was taken place about two years since the pandemic had been announced, taking together the first and the second-year students, over a half of the respondents were experiencing their academic life fully under the COVID-19 pandemic, which also means that they have not experienced any academic life prior to the pandemic. Referring to the international student status, 12.6% of the respondents were international students, with Burapha University having the highest number of international students among the respondents, who mainly were come from China, Laos, and Cambodia.

Regarding the living status, more than half of the respondents from Burapha live alone, and a third live with roommates. Half of the respondents from Rajshahi live with roommates and over a third live alone. On the contrary, 86.2% of the respondents from Hanoi Education University live with family, probably because many of them are enrolled as on-the-job

students. Regarding the living place, more than half of the respondents from Burapha live in a rental home, while the left lives in a dormitory, as no one lives in their own home. This pattern is similar for respondents from Rajshahi. Of respondents from Hanoi, 84.6% live in their own homes.

Perceived impacts on health and campus life well-being

The perceived impacts of pandemics on certain aspects of students' life are described in Table 2. The four-level Likert ranked from not at all, not so much, some, and a lot. We checked the reliability of this seven-item scale and found that the Cronbach's Alpha value was 0.808, the corrected item-total correlation (≥ 0.3) for all items, which indicated a good internal consistency.

Table 2. Perceived impacts on seven-item campus life

	Perceived Impact	Not at all		Not so much		Yes, some		Yes, a lot	
		N	%	N	%	N	%	N	%
1	Class	26	16.4	27	17	57	35.8	49	30.8
2	Research	50	31.4	46	28.9	45	28.3	18	11.3
3	Foods	42	26.4	73	45.9	31	19.5	13	8.2
4	Life	18	11.3	60	37.7	52	32.7	29	18.2
5	Health	54	34	62	39	31	19.5	12	7.5
6	Stress	21	13.2	55	34.6	51	32.1	32	20.1
7	Worry	10	6.3	41	25.8	57	35.8	51	32.1

For categories of taking class, doing research, food, grocery supply, or health, the 'not at all' level of impact was chosen by the highest number of respondents. However, for taking class, a third of respondents replied with 'a lot impacted'. This phenomenon is interesting since the impacts tend to strongly polarize between no impact at all to a lot of impacts. The respondents reported no impact on research, as most of the respondents chose 'not at all' or 'not so much', which could be explained by the fact that undergraduate students are not yet required to do research work. Table 2 shows that the highest number of respondents chose "some impact" on taking the class and worrying about the future, "no impact" for doing research, and "not so much impact" for food supply, daily life, health, and stress.

Table 3. Perceived impacts on health, stress and worry breakdown by university

Variable	Value	Burapha U (N=68)		Rajshahi U (N=26)		Hanoi Edu U (N=65)		Total (N=159)	
		N	%	N	%	N	%	N	%
Perceived impact on health	Not at all	19	27.9%	19	73.1%	16	24.6%	54	34.0%
	Not so much	20	29.4%	4	15.4%	38	58.5%	62	39.0%
	Yes, some	20	29.4%	3	11.5%	8	12.3%	31	19.5%
	Yes, a lot	9	13.2%	0	0.0%	3	4.6%	12	7.5%
Perceived stress	Not at all	6	8.8%	6	23.1%	9	13.8%	21	13.2%
	Not so much	15	22.1%	4	15.4%	36	55.4%	55	34.6%
	Yes, some	23	33.8%	12	46.2%	16	24.6%	51	32.1%
	Yes, a lot	24	35.3%	4	15.4%	4	6.2%	32	20.1%
Perceived worries	Not at all	4	5.9%	1	3.8%	5	7.7%	10	6.3%
	Not so much	13	19.1%	1	3.8%	27	41.5%	41	25.8%
	Yes, some	20	29.4%	12	46.2%	25	38.5%	57	35.8%
	Yes, a lot	31	45.6%	12	46.2%	8	12.3%	51	32.1%

Table 3 shows the perceived impact on health, perceived stress, and worries of the respondents. In total, over a third of students perceived health impact. Students from Burapha perceived more impact on health, while students from Rajshahi and Hanoi tended to perceive very little impact. Regarding the perceived stress of the respondents, in total, over half of the respondents perceived some degree of stress. More students from Burapha (35.3%) perceived a lot of stress than students from Rajshahi (15.4%) and Hanoi Education University (6.2%), respectively. Regarding the perceived worries for the future of the respondents, in total, 67.9% of respondents perceived some degree of worry. More students from Burapha (45.6%) and Rajshahi (46.2%) perceived a lot of worry than from Hanoi Education University (12.3%), respectively.

Table 4. Spearman correlation between independent and dependent variables

		Health	Stress	Worry for future
University	Rs	-.130	-.357**	-.314**
	P	0.102	0.000	0.000
Undergraduate	Rs	-.106	-.053	-.083
	P	0.240	0.553	0.360
Female	Rs	-.267**	-.117	.036
	P	0.001	0.158	0.663
Year of enrollment	Rs	.066	.292**	.309**
	P	0.407	0.000	0.000
Dormitory	Rs	.058	-.164*	-.089
	P	0.467	0.039	0.262
Impact on taking classes	Rs	.345**	.372**	.312**
	P	0.000	0.000	0.000
Online class satisfaction	Rs	-.235**	-.405**	-.350**
	P	0.003	0.000	0.000
Online class preference	Rs	-.159	-.272*	-.203
	P	0.162	0.015	0.073
Impact on research	Rs	.399**	.309**	.114
	P	0.000	0.000	0.154
Impact on meal & shopping	Rs	.400**	.407**	.204**
	P	0.000	0.000	0.010
Impact on daily life	Rs	.464**	.456**	.394**
	P	0.000	0.000	0.000
Income change	Rs	.190*	.105	-.010
	P	0.016	0.188	0.897
Life plan change	Rs	.252**	.461**	.461**
	P	0.001	0.000	0.000
Foreign student	Rs	.068	-.088	-.059
	P	0.392	0.269	0.459
Access Information	Rs	.035	.081	.033
	P	0.665	0.310	0.677
Impact on health	Rs	1.000	.431**	.261**
	P		0.000	0.001
Stress	Rs	.431**	1.000	.620**
	P	0.000		0.000
Worry for future	Rs	.261**	.620**	1.000
	P	0.001	0.000	

*p<0.05; **p<0.01; N=159

To investigate factors that may associate with health-related variables, we performed the Spearman correlation test (Table 4). We found several significant associations among variables. Undergraduate students tended to perceive more stress and worry ($p < 0.01$). Female students might perceive more impact on health than males ($p < 0.01$). Students in the higher years of enrollment might perceive more stress and worry for the future ($p < 0.01$). Students living in dormitory might perceive more stress and worry ($p < 0.01$). Students who perceived more impact on taking class might also perceive more stress and worry ($p < 0.01$). Students who perceived higher satisfaction from online classes might perceive less stress, worry, and health impact ($p < 0.01$). The higher preference for the online class, the less stress perceived ($p < 0.05$). Students who perceived a higher impact on doing research might perceive a higher impact on health and stress ($p < 0.01$). Students who perceived a higher impact on food supply might perceive higher stress, health impact, and worry ($p < 0.01$). Students who perceived a higher impact on daily life might perceive higher stress, health impact, and worry ($p < 0.01$). Students with increased income tended to have a higher impact on health ($p < 0.05$). Students who had changed their life plans tend to have higher stress, worry, and impact on health ($p < 0.05$). The health-related variables including perceived health impact, stress, and worry for the future were strongly correlated each with other ($p < 0.01$). For the variables such as living status, foreign student status, and COVID-19 information access, we found no significant associations with regard to the health impact, stress, and worry for the future.

Qualitative findings on the impacts of the pandemic

The respondents were asked to explain how their health had been affected by the pandemic. In general, the responses could be grouped into physical health impacts and mental health impacts. Regarding physical health, voices were typically *“I gained weight because of immobility and eating too much”*; *“I suffered headaches and insomnia”*, *“My eyes became bad because of too much looking at the screen”*, and *“I spend most of the time laying on my bed”*, *“Having to wear a mask made breathing difficult and irritated my face”*, *“I can't to exercise at outdoor or gym”*. Regarding mental health issues, respondents mentioned changes in mood, depression, stress, and worry: *“I feel depressed”*, *“I am afraid to become infected, then I may infect my family”*, *“I feel stress all the time, I may have mental health issues”*, *“I became irritated because of too frequent COVID-19 testing”*, *“I have increased stress while studying”*, *“My mental health was affected, I feel lonely”*. Nevertheless, some respondents seemed not to be impacted. *“I am not affected much because the university prepares vaccine for the student”* (a foreign student from China).

Regarding changes in life and worries about the future, responses could be grouped into academic, employment, health, and future life concerns. Regarding academic concerns, some respondents reported that *“By studying online, I don't pay enough attention to study and received bad grades and”*, *“I worry about I will not be able to graduate in time”*. Especially for respondents from Burapha, who are mostly nursing students, their concerns were *“I worry about too little practical skills obtained”*, *“Worry about the experience in the procedure that has to do for the patient”*, and *“About collecting sample data used in my master's research during the pandemic situation”*. Many respondents worried about employment perspective: *“I need job hunting in future because I have responsibility for family in the future”*, *“I worry about how much I learned from studying. Is it enough for my future work?”*, *“No place to work after graduation”*, *“If it continues under this situation, actually, I worry about how hard to find a job and keep wondering if the online class could let us - freshly graduated students apply our knowledge to work effectively”* (a foreign student from Cambodia). Some respondents concern about health: *“I worry about getting infected because it can't help*

contacting people who are infected”, “I worry about health consequences and my family may become infected”. Overall, there is a notion of the uncertainty of the respondents’ concerns: “No normal life. I worry if this pandemic will prolong till further future, and I won’t be able to visit home without going through many documents” (a foreign student from Cambodia), “I’m worried about my life, I’m not sure for future”, “When will I be able to travel abroad? When will be a normal life without a mask”, “When COVID-19 will out of this world”, “I come from a poor family, my father is gone, my mother is old, I have a lot of responsibility, I am so worried about my future life”, “My marriage could be delayed”, etc.

The respondents also specified the need for support that they may expect. Many mentioned the need of providing financial support, support in cash allowance, to reduce tuition fees, tuition refund or exemption since the education was mostly online, or to consider increasing scholarship amount according to increased cost of living. *“At this moment, it only appears that money supports are needed in my head. You think, before the pandemic, our electricity fee is stable since we didn’t stay at our room or home at all. But now it’s not the same. Me, as a student, my monthly scholarship salary didn’t change at all, but I have to use all of my own facilities. And I guess university electricity’s consumption, at least decreases, right?”*. Some respondents raised the need for 3rd vaccine shot, free masks and alcohol, free tests, equipment, and supplies for the dormitory such as microwave, refrigerator, and instant foods. Besides financial support, the majority of the respondents mentioned their needs for online education infrastructure such as improving internet conditions, providing more online services, lending iPad to students, deliver books and learning materials to students’ homes. The need for providing mental health support was mentioned as well.

Conclusion

In this paper, the authors investigated the impacts of the pandemic on students’ health as well as other aspects of students’ campus life at three target universities in Asia. It had been conducted two years into the pandemic when the students already had experienced four epidemic waves from 2020 through early 2022, while the new wave was still at its peak. During this two-year period, the students at the target universities studied almost fully online except for about a few months when the campus was open temporarily for classes.

About half of the respondents were in their first and second year and have never experienced before-pandemic university student life. From the quantitative data analysis, the results showed about over a third of the respondents perceived health impact, while respondents from Burapha tended to perceive more health impact, while respondents from Rajshahi and Hanoi tended to perceive very little impact. In total, over half of the respondents perceived stress, as students from Burapha tended to perceive a higher degree of stress, while respondents from Hanoi perceived the least stress. With regards to worries, respondents from Rajshahi tended to worry a lot about future life courses, while respondents from Burapha tended to have academic concerns for practice training. These differences in impacts could be explained by the characteristics of the respondents in each university.

From the correlation test, we found that undergraduate students, students in the higher years of enrollment, and students living in dormitory tended to perceive more stress and worry. Female students might perceive more impact on health than males. Students who perceived more impact on taking class might also perceive more stress and worry. The higher preference for the online class, the less stress is perceived. Students who perceived a higher

impact on food supply and on daily life, and who had changed life plans might perceive higher stress, health impact, and worry.

The respondents were well-informed about the COVID-19 situation but still have various needs. Our study's findings imply the need to provide support to students not only to improve the academic quality of classes, but also to allow more practice classes, and ensure conditions for doing research as required by the study subject. There are also the voices of students for financial support, health support and mental health support, infrastructure, and campus life condition support, along with career support. From these preliminary findings, there may be a need for further investigation on the impacts of the prolonged pandemic and online learning, the factors that may predict the impact of the pandemic on students, and the effects of support in alleviating the impacts of the pandemic.

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