

Depression, Anxiety, and Stress During the COVID-19 Pandemic: Comparison Among Higher Education Students in Four Countries in the Asia-Pacific Region

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Abstract

The global COVID-19 pandemic is affecting the health of individuals and leading to psychological problems. Students in higher education who are graduating, facing online learning challenges, and future job opportunities are among the most at-risk group for psychological issues. Due to the new normal of the COVID-19 pandemic, limited studies have been conducted concerning the mental health of students, especially in the Asia-Pacific region. Therefore, this study aimed to assess student's depression, anxiety, and stress status in four countries in the Asia Pacific region, namely, Malaysia, Indonesia, Thailand, and China. This study employed a quantitative research design with a pool of 1,195 student participants. The DASS-21 questionnaire was used for data collection through an online platform to measure the severity of depression, anxiety, and stress. Descriptive statistics were conducted to achieve the research objectives, and all reliability values were reported greater than 0.70. Findings revealed that up to 38% of the students reported mild or moderate depression, anxiety, and stress, while 20.5% reported severe or extremely severe anxiety. Overall, anxiety was reported to be the most significant problem among the students, followed by depression and stress. Students are at risk of mental health challenges during the coronavirus pandemic, likely due to unexpected life changes. This study contributes an overview report of students' mental health problems and discusses the support and services in preventing students' psychological problems. The comprehensive discussion has provided scientific information and suggestion to policymakers in maintaining the student academic and welfare.

Keywords

COVID-19; higher education; mental health; pandemic; well-being

Introduction

Coronavirus Disease 2019 (COVID-19) is the current major health crisis affecting people across the world. At the time of preparing this manuscript, there were over 120 million positive cases and over 2.6 million confirmed deaths globally (World Health Organization, 2021). The first reported COVID-19 patient was on 1 December 2019 from Wuhan, the capital of Hubei Province, China, with a total population of over 11 million (Cohen, 2020). On 31 December 2019, public notice of the outbreak was released. The World Health Organization (WHO) office in China confirmed that 44 cases, with 11 being severe, of respiratory infection with unknown etiology (i.e., manner of causation) were detected in Wuhan City (World Health Organization, 2020; Xiang et al., 2020). On 20 January 2020, 282 confirmed cases imported from Wuhan were reported in four countries: China, Thailand, Japan, and the Republic of Korea. Ten days later, the WHO announced the occurrence of the novel coronavirus and declared a Public Health Emergency of International Concern (PHEIC). The WHO officially named the novel coronavirus as the Coronavirus disease (COVID-19) pandemic in February 2020.

COVID-19 soon spread to more than 127 countries and territories worldwide (Coronavirus Update, 2020, March 13). By 28 February 2020, confirmed cases increased to 83,652, with 4,691 positive cases and 87 deaths outside of China. On 11 March 2020, the WHO declared the COVID-19 as a pandemic (World Health Organization, 2020). From March to April 2020, almost all affected countries announced some sort of lockdown to control the spread of COVID-19, and strictly practiced physical distancing of at least 1 meter. Such unpredictable phenomenon and lockdowns have created mental trauma in societies (Xiao, 2020).

The lockdown instructions created a stressful situation for all societies. People were isolated without face-to-face interaction and social communication, and experienced feelings of loneliness, anger, anxiety, boredom, and depression (Ahmed et al., 2020; Brooks et al., 2020; Xiang et al., 2020; Zhang et al., 2020). These symptoms affected individual psychological problems. According to Dar et al. (2017), stressful situations can increase common mental health problems like anxiety and depression. These feelings may lead to the development of adjustment disorder or post-traumatic stress disorder (Banerjee, 2020).

There are studies conducted to investigate the effect of a pandemic on psychological problems. In Iran, a study highlighted that unpredictability, uncertainty, the seriousness of the disease, misinformation, and social isolation caused stress and mental morbidity (Zandifar & Badrfam, 2020). In Japan, Shigemura et al. (2020) reported that COVID-19 impacted well-being, fear, and panic behavior in the general population. Dong and Bouey (2020) claimed that the spread of COVID-19 could lead to a genuine mental health crisis, especially in countries with high caseloads.

In preventing psychological problems, most of the concerns and focuses have been given to the at-risk population, such as front liners, patients and their caregivers, individuals with disabilities, the elderly, and pregnant women. However, students in higher education institutions (HEI) who face various challenges in the wake of COVID-19 are left behind. Keeping this in mind, HEI students have experienced one or more diagnosable mental disorders worldwide (Auerbach et al., 2018), struggled with mental health difficulties (Kaushik et al., 2016), and been at risk of suicide and self-harm problems (Liu et al., 2018; Westers, 2019).

Psychological distress is exceptionally high among university students (Peltzer & Pengpid, 2015). According to the report, about 1 in 5 adolescents have experienced a psychological problem. Anxiety accounts for around 41% of psychological issues among HEI students (Costello et al., 2013; Rhein & Sukawatana, 2015). Literature indicates that 50% of HEI students had moderate levels of stress-related mental health concerns such as anxiety and depression (Goa et al., 2020; Regehr et al., 2013).

In Thailand, the prevalence of depression among university students ranged from 19% to 50%, while anxiety from 26% to 69% (Boonvisudhi & Kuladee, 2017; Rhein & Sukawatana, 2015). Research from Malaysia indicated that the average age of depression reduced from 29 years to 14 years in the past five decades (Suleiman et al., 2017; Varcarolis, 2014). Depression, anxiety, and stress are recognized as the most frequent problems among HEI students (Suleiman et al., 2017). Recently, research conducted in China reported that more than 20 % of HEI students suffered from depression, and this ratio has kept growing over the past decade (Wei & Sang, 2017). Additionally, anxiety became the most prevalent and severe issue, especially for female students (Goa et al., 2020). While, in Indonesia, depression and anxiety were common among HEI students. Marthoenis et al. (2018) indicated that depression and anxiety were found in 18.8% and 27.4% of Indonesian HEI students, respectively. The depression rate was higher compared to neighboring countries of Malaysia and Thailand. In general, psychological problems, especially depression and anxiety, increase and worsen during the COVID-19 pandemic.

During the lockdown period, most universities shifted instructional modes to remote learning or online learning. Many students reported suffering from poor mental health due to the disruption of their academic routines (Agnew et al., 2019). The challenges and constraints faced by students pertaining to their research projects, internships, delay of graduation, cost of returning home, managing belongings, and fears of transmitting the coronavirus to their family members when they return home are, directly and indirectly, affecting their mental health development (Pan et al., 2020; Zhai & Du, 2020).

To date, the literature reflects the lack of data on the well-being and mental health problems of students in higher education during the COVID-19 pandemic, particularly in Asian countries. There is a need to gather more information, especially from developing countries, to explore students' mental health status for prevention and intervention. To meet this need, the present study was undertaken to assess the mental health status of HEI students in four developing countries in Asia: Malaysia, Indonesia, Thailand, and China. Additionally, the present study also explored the support provided by the HEIs from the four participating countries in assisting university students during the COVID-19 pandemic. Finally, we proposed several suggestions to complement the existing approaches to overcome the students' psychological trauma.

Support and services for higher education students during COVID-19 in China, Malaysia, Indonesia, and Thailand

China, the first country in the world affected by COVID-19, announced a complete lockdown to control the spread of the virus. China is the first country that decided to fight against the considerable challenges in education. To maintain the academic session for the students, China's Ministry of Education required all HEIs to offer online teaching and learning resources (Xinhua, 2020). The guidelines issued by the ministry suggested HEIs should make full use of all quality open online courses and laboratory resource platforms to organize

practical online education activities during the pandemic lockdown period. The government coordinated several online platforms to open around 24,000 high-quality online courses and virtual simulation experimental teaching resources for free. This indirectly allowed China to comprehensively promote the digitalization and informatization of teaching to over 200 million students (Leung & Sharma, 2020). To help students overcome well-being problems, HEIs have provided online psychological support and counseling sessions. For instance, the Peking University launched China's first online video psychological counseling system and opened a 24-hour hotline for psychological assistance. For students with psychological difficulties, the university provides peer-to-peer services to strengthen humanistic care. In order to fully grasp the situation of students, the health tracking system has been well-established during this epidemic to ensure that the information is timely, comprehensive, and accurate.

During the COVID-19 lockdown (better known as the Malaysian Government Movement Control Order [MCO]), the Ministry of Higher Education (MOHE) of Malaysia, in cooperation with the public universities and private institutions, has taken responsibility for the basic needs, safety, and welfare of students through the MCO. A special task force was appointed in every HEI to respond to all matters pertaining to or arising from the COVID-19 pandemic, which included student academic progress. Instruction of online learning was fully implemented on 18 March 2020, the first day of the MCO in Malaysia. In response, the Malaysian Qualifications Agency (MQA) – the body which governs the HEI education program quality control – delivered 'Guidelines on the Delivery of Higher Education Programmes During and Post COVID-19 Movement Control Order (MCO),' standard guidelines for monitoring and ensuring the quality of the remote learning system (MQA, 2020). In addition, to ensure that the students did not struggle with online learning problems, some public universities worked together with telecommunication companies in providing internet data for students from poor socio-economic backgrounds in rural areas (Jayasooria, 2016). Besides academics, the HEI sectors in Malaysia, including the Ministry of Higher Education (MOHE), also provided financial support and accommodation to assist students during this pandemic period to ensure the learning continuity for students adversely affected COVID-19. On a separate note, non-profit organizations (NGOs), through public donations, also helped provide free meals and basic daily needs to ease students' burden. Such support has reduced the students' anxiousness to survive, especially those who could not return to their respective hometowns during the MCO period. For well-being services, most HEIs provided 24-hour e-counseling services for their students. Malaysian civil society groups created a one-stop, user-friendly platform to bridge the communities needing help.

In Indonesia, on 15 March 2020, Indonesia's President Joko Widodo instructed universities to suspend all face-to-face classes and replace them with online learning as part of efforts to deal with the COVID-19 pandemic (Yamin, 2020). The national exam for university admission was canceled for the academic year of 2020, and the timetable for the registration of new university students was also postponed. To seek counsel, recommendations, and policy-making related to the impact of the COVID-19 pandemic on university students, the Higher Education (HE) Directorate-General took the initiative to organize a 'townhall session' with the representatives from Indonesian higher education institutions in early May 2020. The Ministry of Education and Culture issued a new policy to encourage universities to conduct online lectures and issue work-from-home guidance. The policy called for universities to reallocate operational costs to help students learn from home. Apart from this support, specific financial support was given to the underprivileged students through the KIP-K (Indonesia Smart Card for University Students) policy. Permitted study programs to administer distance learning were encouraged to develop and assure student learning quality.

All these policies were set to support equitable access to education in Indonesia during the pandemic.

On the other hand, academic calendars are flexible and adaptive to the new learning norm in reducing the burden faced by both students and lecturers. Like other Asia countries, HEIs in Indonesia also offered welfare support to the students who stayed in university housing during the lockdown period. Basic student needs such as *sembako* [basic food] and safety accommodation were provided and monitored by the HEIs. Online psychological consultation and counseling services were provided to help students during this pandemic period. For example, Sebelas Maret University (UNS) in Surakarta, Central Java, opened a free online psychological service for their students to handle well-being problems (The Jakarta Post, 2020).

Before declaring a state of emergency in Thailand on 26 March 2020, universities were ordered to close from 18 March 2020 after the number of COVID-19 cases more than doubled in just three days, from 15-17 March 2020 (de Alwis et al., 2020). All HEIs in Thailand started running full-scale online learning systems to reduce congestion and the risk of disease transmission. The HEIs in Thailand offered support to ensure that their students maintained their academic performance and dealt with financial hardships. These included waiving tuition fees for specific cases, reimbursing partial tuition fees of the previous semester, decreasing rental costs of on-campus housing, negotiating with off-campus apartment providers for declining rental prices, providing free high-speed internet access, and increasing the number of scholarships (Bangkok Business Media, 2020). For example, in ensuring online learning was convenient for all students, Thammasat University conducted an 'Educational SIM' project by providing students who had problems accessing the internet with unlimited internet data (Kunnikar, 2020). The ministry sought cooperation from HEIs to help students suffering from an economic slowdown due to the lockdown to reduce their parents' fiscal burden. As a result, 52 universities reduced tuition fees to help students amid the COVID-19 crisis. Some universities also established a student aid fund, extended payment terms, or returned service fees. For example, Chulalongkorn University refunded dormitory fees, Kasetsart University extended the payment period and installments while allocating work grants to undergraduate students, and Khon Kaen University established an assistance fund (The Nation Thailand, 2020). Furthermore, welfare support was also provided by HEIs in Thailand, such as purchasing health insurance of COVID-19 for students, providing free online counseling, offering more stay-at-home, part-time job positions for students with financial problems, and hiring new graduates.

Methodology

Procedure and participants' profile

This study employed a quantitative research design as the aim of the study was to explore the level of depression, anxiety, and stress among higher education students. This is collaborative research between four Asia-Pacific countries: Malaysia, Indonesia, Thailand, and China. Therefore, the study location and sampling procedure focused on the HEL students from the four specific countries as mentioned. As the data collection was done in the middle of April 2020, a survey form through an online platform was used for data collection during the

COVID-19 pandemic lockdown period. To qualify as a respondent, participants should have recently registered in an HEI either at the undergraduate or postgraduate level. All participants voluntarily agreed to participate before responding to the online questionnaire. Informed consent was obtained from each participant. All information obtained was solely meant for research purposes and was kept confidential. Through online data collection, 1,195 HEI students from four collaborative countries participated in this study. Of these participants, 393 were males (32.9%), and 802 were females (67.1%). Table 1 shows the frequency and percentage of the participants' profiles.

Table 1: Demographic Information

Item	Frequency (%)	Item	Frequency (%)
Country		Higher Institution	
Thailand	385 (32.3%)	Private	123 (10.3%)
Malaysia	206 (17.2%)	Public	1054 (88.2%)
China	353 (29.5%)	Others	18 (1.5%)
Indonesia	251 (21%)		
Gender		Education (current)	
Thailand			
Male	138 (38.5%)	Diploma	100 (8.4%)
Female	247 (61.5%)	Bachelor's	984 (82.3%)
Malaysia		Master's	52 (4.4%)
Male	59 (28.6%)	Doctoral	39 (3.3%)
Female	147 (71.4%)	Others	20 (1.6%)
China			
Male	69 (19.5%)		
Female	284 (80.5%)		
Indonesia			
Male	127 (50.6%)		
Female	124 (49.4%)		

(N=1,195)

Instrumentation and analyses

The short version Depression, Anxiety, and Stress Scale-21 (DASS21) was used to measure participants' mental health status during the COVID-19 pandemic. The DASS21 is a 21-item short version of the original 42-item questionnaire developed by Lovibond and Lovibond (1996), focusing on three dimensions, namely, (1) stress, (2) anxiety, and (3) depression. There are seven items for each dimension in the DASS21. The DASS21 is an established self-administered questionnaire, which has been widely used in many countries. All collaborative countries used the DASS21 translation survey form according to the local language of the respective countries (Lovibond, 2018). Several studies were published to report the reliability and validity of the DASS-21 worldwide. These studies indicated that DASS-21 is a well-established instrument to measure depression, anxiety, and stress in either clinical or non-clinical samples in different languages and cultures (Coker et al., 2018; Henry & Crawford, 2005; Tonsing, 2014). SPSS 21.0 was used for data analysis.

For the present study, descriptive statistics, including frequency, percentage, mean, and standard deviation, were conducted to achieve the research objectives. A 4-point Likert scale ranging from 0 (never) to 3 (almost always) was used for all 21 items in this instrument. Sum scores were computed by totaling the scores of items and multiplying them by a factor of 2.

Accordingly, each dimension may range between 0 and 42. The interpretation and the DASS21 cut-off scores were derived from a set of severity ratings proposed by Lovibond and Lovibond (1996). The reliability of the DASS21 in this study population is presented in Table 2. Reliability values greater than 0.70 were reported, which achieved the statistical requirement (Hair et al., 2009).

Table 2: Cronbach’s Alpha of Study Instrument

Country		SPSS Cronbach alpha	Country		SPSS Cronbach alpha
Malaysia	Depression	.904	Thailand	Depression	.858
	Anxiety	.821		Anxiety	.772
	Stress	.868		Stress	.833
Indonesia	Depression	.844	China	Depression	.859
	Anxiety	.702		Anxiety	.869
	Stress	.785		Stress	.887

Results

The descriptive analysis reported the levels of severity for stress, anxiety, and depression among the students in HEIs during the COVID-19 pandemic. Of the 1,195 students, 20.5% reported severe or extremely severe anxiety; 27% and 38% of the students were in the level of mild or moderate stress and depression, respectively (Figure 1). More than half of the participants expressed anxiety beyond the normal level, implying that more concern is required to attend to students’ anxiety. As shown in Table 3, the study also reported the different levels of severity of stress, anxiety, and depression for each country. The study highlighted that more than 50% of the students from Malaysia and China experienced anxiety (Malaysia, 63.1%; China, 70.3%) and depression (Malaysia, 51.5%; China, 66%). On a separate note, nearly half of the Chinese students in this study experienced stress (49.3%). Likewise, students in Indonesia also reported higher levels of anxiety (46.6%). As for Thailand, 33.2% of students were under stress, 47% suffered from anxiety, and 46.2% from depression.

Figure 1: Levels of Severity, Frequency, and Percentage of Stress, Anxiety, and Depression for the Population of the Four Countries

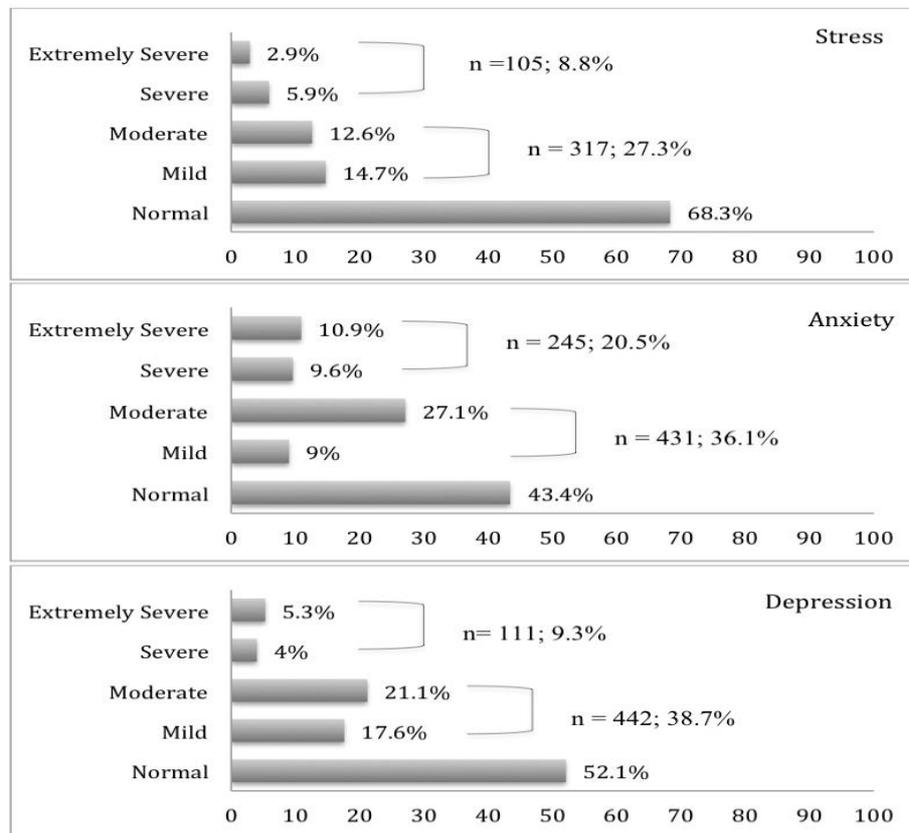


Table 3: Levels of Severity, Frequency, and Percentage of Stress, Anxiety, and Depression for the Respective Countries

	Frequency (%)			
	Malaysia	Indonesia	China	Thailand
Stress				
Normal	142 (68.9)	185 (73.7)	179 (50.7)	257 (66.8)
Mild/Moderate	47 (22.8)	54 (21.5)	131 (37.1)	95 (24.7)
Severe or Extremely Severe	17 (8.3)	12 (4.8)	43 (12.2)	33 (8.5)
Anxiety				
Normal	76 (36.9)	134 (53.4)	105 (29.7)	204 (53.0)
Mild/Moderate	82 (39.8)	94 (37.4)	130 (36.9)	125 (32.4)
Severe or Extremely Severe	48 (23.3)	23 (9.2)	118 (33.4)	56 (14.6)
Depression				
Normal	100 (48.5)	195 (77.7)	120 (34.0)	207 (53.8)
Mild/Moderate	85 (41.3)	50 (19.9)	185 (52.4)	142 (36.9)
Severe or Extremely Severe	21 (10.2)	6 (2.4)	48 (13.6)	36 (9.3)

Note: Malaysia (n = 206); Indonesia (n = 251); China (n = 353); Thailand (n = 385)

Discussion

Students were at risk for various mental health challenges during the coronavirus pandemic (Lyon & Matson, 2020). Our data showed symptoms of stress, anxiety, and depression among the HEI students in Malaysia, Indonesia, Thailand, and China during the outbreak of COVID-19. Anxiety was reported to be most profound among the students, followed by depression and stress. The findings aligned with several studies on mental health problems in different countries during the COVID-19 pandemic (Pan et al., 2020; Zhai & Du, 2020). A total of 1,057 participants from Oman, Saudi Arabia, Jordan, Iraq, United Arab Emirates, and Egypt reported that the total prevalence of depression, anxiety, and stress was 57%, 40.5%, and 38.1%, respectively (Al Omari et al., 2020). According to Wang et al. (2020), an extensive cross-sectional online survey with 44,447 students reported that COVID-19 related factors might be associated with higher depression symptom risk. A total of 476 university students living in Bangladesh reported that around 15% of them had moderately severe depression, whereas 18.1% were suffering from severe anxiety (Islam et al., 2020). Furthermore, a study of 520 Lebanese university students showed that 15.5% of the students had at least moderate depressive symptoms, and 30.5% reported anxiety symptoms (Fawaz & Samaha, 2021). The depression and anxiety symptoms were reported comparing with stress symptoms among the HEI students in this study.

The findings of this study have raised awareness among HEIs of the seriousness of psychological problems of the university students, therefore increasing the need for immediate intervention strategies. Bear in mind; university students play a crucial role in leading country development in the future. Student achievement, as well as well-being, are two main concerns in university policy-making. Therefore, comprehensive support should be provided by HEIs across the world during the COVID-19 pandemic. The demands for psychological knowledge and interventions were highly requested among HEI students during the COVID-19 pandemic; 87.2% of students reported that they needed to understand the common symptoms of anxiety and depression, and 70.0% of the students required to understand the ways of alleviating the adverse psychological effects (Wang et al., 2020).

Online Psychological First Aid (PFA) and online counseling sessions are the universities' leading platforms to continuously operate during the COVID-19 pandemic. Listening to and understanding individual problems can help relieve an individual's well-being problems in this current crisis (Banerjee, 2020; Liu et al., 2020). In China, HEIs have provided online psychological support and counseling sessions since the beginning of the pandemic. In comparison, the majority of HEIs in Malaysia have conducted 24-hour e-counseling services for students. The development of online materials for mental health education and the latest information related to the COVID-19 pandemic should be offered to the students by the universities in an effective manner to avoid incorrect information received by students, which may affect their stress or anxiety. Research has indicated that the lack of clear and valid media information during a crisis could lead to the community suffering intense anxiety (Liu et al., 2020). In response, a one-stop, user-friendly platform has been created by Malaysian civil society groups to bridge the community needing help.

In addition, proper teaching and learning guidelines during the COVID-19 pandemic should be informed clearly and transparently to students, for instance, grading systems, formative and summative assessments, and internship processes, which may influence a student's graduation progress and future job opportunities. The worry about their learning progress

can affect students' mental health problems (Agnew et al., 2019; Zhai and Du, 2020). Online psychological consultation and counseling services are provided to help students during this pandemic period in Indonesia. Moreover, welfare support is also offered by HEIs in Thailand, such as purchasing health insurance and free online counseling to assist students during the pandemic.

Conclusion

The HEIs of the participating countries have provided comprehensive support during the COVID-19 pandemic in caring for students' academic and well-being. Collectively, the implementation of online learning during the COVID-19 pandemic becomes a pivotal measurement to justify the success of HEIs in handling the unexpected contagion. Generally, most initiatives are predominantly concerned with online learning or academic progress, but to a lesser extent, student psychological problems. The survey provided an insight that, despite numerous measures taken by the ministries to comfort the university students, their level of anxiety was high, implying that efforts should be taken to attend to the student's mental health problems. In this new norm of working remotely, progressive humanity values are required to monitor student's mental health and well-being during a pandemic.

Policymakers in HEIs should revisit the practical approaches in supporting their students' mental health and well-being and provide online learning platforms and online communication and observation. Identifying at-risk students can be done by HEIs to mitigate the mental health problems among students. The lecturers should play a role in this approach during the online learning sessions. The purpose of having a 'face-to-face' online session is to provide teaching-and-learning sessions and offer an opportunity to engage and communicate with the students. The lecturers should be aware of the student's attitude towards each online session through their engagement, willingness to join during a discussion, and showing their face. An immediate response should be taken on any suspected students, and necessary assistance should be provided. In conclusion, caring communication through a humanistic approach is a key to students' well-being during pandemics (Lyon & Matson, 2020). HEIs should support the students not only in their learning sessions but also in other challenges equally.

Recommendation

More creative interventions and strategies with humanity values aligned with the new normal working conditions remotely from the university are required, in collaboration with the policymakers and parental care during the pandemic period, thus mitigating the students' mental health problems. A 'Buddy System' or student support group is another way to look after student mental health and well-being. Owing to the fact that students are isolated, feeling worried and anxious, and that they may be overwhelmed with misinformation from sources, it may worsen their psychological trauma. Therefore, an online 'Buddy System' is recommended to gather students in a group and communicate frequently. Individuals in the young adult stage are more comfortable sharing their problems with peers (Brown & Larson, 2009).

Furthermore, establishing a professional psychological online service allows a more accessible manner to identify and manage student's mental health and well-being issues. Student awareness and acceptance about the benefits and contact information such as responsible departments in the emergency condition, contact agents, available services or supports, and so on are fundamental to the success of the well-being services. Providing a service platform without humanity value may be rejected by individuals. A healthy lifestyle would lead individuals to be successful future. Establishing a caring system needs commitment not only for today's pandemic but also preparing for an unexpected future crisis.

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