



Perceived Stress and Resilience among Private and Public Undergraduate University Students During Covid-19 Pandemic

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ABSTRACT

This is a quantitative study that examines relationships between perceived stress and resilience among private and public undergraduates university students during the COVID-19 pandemic in Malaysia. In total, 160 undergraduate students had been gathered for this study's purposes. Two questionnaires were utilised in the research; the Perceived stress scale and Connor-Davidson Resilience were distributed among respondents through Google Form. The findings reported that there is a low negative relationship between perceived stress and resilience. Apart from that, the findings reported no significant relationship between perceived stress and genders. There was a significant relationship in perceived stress predicting the level of resilience among public and private undergraduates university students during the COVID-19 pandemic. Undergraduates students had a moderate level of perceived stress thus needing a stress intervention or stress management in facing a stressful situation. Resilience is needed to be implemented in every educational system to help to build resilience among students.

Keywords: perceived stress, resilience, undergraduates students, public university, private university, COVID-19 pandemic, Malaysia

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1 INTRODUCTION

University students are prone to stressful events. Gall, Evans, and Bellerose (2000) described how students tended to experience stress when entering universities. Regardless of their socio-economic status, students must face a tougher syllabus, chasing deadlines for work assignments, projects, health problems, relationship problems, financial strain, and the like. Struggling to maintain grades and academic achievement is also one of the student's stressors. Every educator needs to assist students in coping with stressors to maintain stable mental health (Elias et al., 2011). The implications of stress are very dependable on the person itself. If a student manages to cope with stress positively, hence the student's resilience can be developed. Hence, if a student fails to cope with a stressful event, the student resilience will tend to decrease.

Students are provided with tertiary education and psychosocial support at universities (Tao et al., 2000). While students face learning virtually due to the COVID-19 pandemic, they are also challenged by the restrictions in social activities due to the potential health implications. Quarantine and lockdown have accelerated the level of anxiety and have generated extreme stress for students. Stress amongst students exerts influences on their academic performance and is correlated with suicidal attempts or self-injury. Moreover, students can suffer from prolonged emotional disturbance if they fail to cope with stress or have low resilience.

According to Towbes and Cohen (1996), students face significant stress coping with academic, social, and personal challenges. Most of these students live apart from their parents, and travel restrictions imposed during the COVID-19 pandemic have heightened the stress level, which leads to anxiety and a rise of fear (Kalok et al., 2020). It has also affected students' academic achievements and psychological well-being (Sundarasan et al., 2020).

Amidst the COVID-19 pandemic, there is a soar of stress, anxiety, depression, frustration, and fear through all ages. Young adults are impacted as universities, colleges, and schools are forced to close. This includes no physical class, no physical activities (campus clubs, recreational activities), and are forced to be confined in-home or on campuses. It has disrupted social activities and hence impacted mentality and emotions. There was plenty of research done on the psychological impact of COVID-19 on university students. However, extraordinarily little or no focus was on stress and resilience among university students in higher education institutions in Malaysia (Islam et al., 2020). In a practical gap, there is limited success in an existing program to increase resilience. It is due to the sole focus only on cognitive coping strategies instead of developing internal factors that encourage resilience (Argyros, 2019). Robbins, Kaye, and Catling (2018) stated the lack of importance of additional instruments to assess stress among university students. Theoretical gaps for this study, lacking in local instruments in measuring stress among university students (Bedewy & Gabriel, 2015), and according to Abolghasemi and Varaniyab (2010), there is the possibility of recall and reporting bias due to subjective self-reports. Empirical gaps for this study show a need for more research on perceived stress and resilience among university students from public and private institutions in Malaysia (Jia Yuin & Yee Teo, 2018), especially during the COVID-19 pandemic. Besides that, few studies have been done in the Malaysian context (Elias et al., 2011). The lack of attention among university students was overlooked, and there is no significant relationship found (Singh & Yu, 2010).

Research objectives

The main objectives of the research were to assess the relationships between perceived stress and resilience among public and private university students during the COVID-19 pandemic. This research also assesses the relationships between perceived stress and gender among the public and private undergraduates' students and examines perceived stress in predicting the level of resilience among public and private university students during the COVID-19 pandemic.

2 LITERATURE REVIEW

Lazarus (1996) defined stress as the perception that the demands of an external situation are beyond a person's perceived ability to cope. Stress caused by a failure in academics, sports, health problems, interpersonal problems, financial problems, or loss of a family member and friends is common among students. Such events are called stressors, and the impact they can leave on a person depends on how well the person handles the tension. Therefore, if a person positively accepts an event as a part of a challenge in life and finds ways to cope, the stress will fade away (Elias et al., 2011). Past research found that some undergraduates students experienced stress, and first-year students are prone to stress, leading to psychological distress (Brown & Ralph, 1999). Previous research by Ebenezer et al. (2020) reported that most undergraduates students had a moderate stress level. Fasoro et al., (2019) studies that were conducted among first-year medical undergraduate students were high. A study performed before COVID-19 showed that students are more prone and vulnerable to mental health problems (Aslan et al., 2020). Although it was found out the relationship was relatively modest, around 43.5% of students reported moderate to a high level of anxiety, 18.6% of students reported moderate to a high level of depression, and about 30.9% showed moderate to high-stress levels in a study conducted among Turkish students.

Before the pandemic, it was reported that depression (29.5%), anxiety (50.3%), and (39.9%) were the level of stress among final-year Turkish students. Also, as reported in the Turkish study, the students suffered from higher anxiety, perceived stress, and depression during the Covid-19 pandemic than the pre-pandemic period (Aslan et al., 2020). The impacts of COVID-19 are noticeable on mental health. Several studies have been performed to investigate the matter. A comparison study before and during the pandemic of students' mental health showed significant worsening in mental health. The increase of depression, anxiety, and perceived stress is worrisome. Elmer et al., (2020) result reported that students' levels of stress, anxiety, loneliness, and depressive symptoms had worsened in comparison to measures before the crisis of the COVID-19 pandemic. In a study performed by Son et al. (2020), 71% of students in Texas reported an increase in perceived stress and anxiety due to the COVID-19 pandemic. Among the first-year French students, the prevalence of stress was 61.6% during the pandemic (Husky et al., 2020). In Saudi Arabia, 30.2% of students experienced a high level of perceived stress. Cao et al. (2020) investigated the COVID-19 implications among students in China showed that students with a stable family living in an urban area and those staying with parents illustrate low anxiety. They also found that students who had acquaintances or family members infected with COVID-19 reported a high level of anxiety. A study among Bangladesh students showed staying with families and living in urban areas is linked to higher depression and anxiety (M. S. Islam et al., 2020).

Separation from families during the pandemic was also one of the factors of students' stressors due to the closed border and plane unavailability (Sundarasan et al., 2020).

In broad terms, resilience could be explained as the ability to recover or bounce back from misfortune or crisis and easily adjust to change (Zhang et al., 2020). '*Resilire*' is the Latin verb, signifying to jump back. In physics, resilience is associated with the object's ability of elasticity to return to its original shape after experiencing certain levels of stress for people. It concerns the development of resilience and is associated with several key factors and critical traits. Hence, when put together, contribute positively to one's overall well-being and emotions. Connor and Davidson (2003) describe resilience one possesses as personal quality to prosper in adversity. At the same time, Block and Kremen (1996) define resilience as susceptibility to resist anxiety, openness, and an optimistic temperament. Snyder and Lopex (2007) state that resilience is a crucial element in positive psychology that explores strength and positive human values. According to Patterson (2002), resilience can be developed through adversity and challenges faced in one's life. Connor and Davidson (2003) stated that resilience changed over time due to protective factors.

A person's protective factors of abilities and skills (competencies) are crucial in building resilience (Dyer and McGuinness 1996). Individual, interpersonal, and familiar are among the types of competencies. Thus, Brownlee et al. (2013) characterised resilience as a progressive process in which the environment is fundamental in determining an individual resilience. Besides, coping strategies have always been linked with resilience (Beasley et al., 2003; Campbell-Sills et al., 2006). Resilience is an essential trait in intervening in the negative impacts of the COVID-19 pandemic on the mental health of Chinese Students in Wuhan (Yang et al., 2020). This study showed that positive thinking and resilience could help reduce the negative impact of the pandemic on Wuhan's college students. Self-efficacy, emotional self-regulation, and optimism are several protective factors that lead an individual to develop problem-solving and coping skills. These factors help improve resilience.

Studies showed that individuals with higher levels of resilience cope better when facing adversity, and resilience acted as a protective factor against stress, depression, and anxiety of negative psychology (Wingo et al., 2010; T. Li et al., 2017). From the standpoint of traditional psychology, previous studies find an inverse relationship between resilience and the level of stress, depression, and anxiety among university undergraduates (McGillivray & Pidgeon, 2015). Therefore, this finding indirectly helps provide an initial overview of the significance of resilience in developing healthy mental health among university undergraduates. Another study showed a significant relationship between self-efficacy and resilience where intrinsic and extrinsic motivation affects resilience. The findings showed a significant relationship between self-efficacy and resilience (five components: meaningfulness, perseverance, self-reliance, equanimity, and existential aloneness) (Madihie, 2016). Apart from that, students' emotional intelligence is also often associated with resilience in enabling them to recognise, understand and manage their emotions during adversity. Hence, students with high emotional intelligence are mostly the ones who can bounce back as they can efficiently cope with circumstances. The study's findings significantly can be used to develop an effective intervention in promoting resilience and helping counsellors find a suitable approach to assist clients (Madihie, 2016).

In a study by Ebenezer et al. (2020), the undergraduates' students had moderate perceived stress levels and low resilience levels. The study also found mean differences between gender and ethnicity, whereas gender comparison showed differences in resilience. Apart from that, there were no differences between faculty and year of study with the accordance of the study with perceived stress and resilience of undergraduate students. Also, in the aspect of correlation and association, found there was a moderate negative correlation between perceived stress and resilience. Hence, the study emphasised that resilience is an important aspect to ensure and determine capability and students' ability to adapt and make a quick rebound from stressful events and adversity. Tung et., al (2014) indicated that resilience affects the level of perceived stress experienced in every student's life. Hence, students' general well-being and personal quality of life are distressed. This study reported a high level of stress and several psychological symptoms. Hence, associated with poor personal resilience in handling stress. Apart from that is the poor handling of personal quality of life and students' general health.

3 METHOD

Research Design

This research adopted a correlational research design with a quantitative methodology to study the relationship between perceived stress and resilience among public and private undergraduates university students during the COVID-19 pandemic in Malaysia.

Instrumentations

Perceived Stress Scale (PSS) by Cohen, Kamarck, & Mermelstein (1983) measures the degree of an individual's situation as stressful. The shorter version of the PSS-10 items was used for this study. The 10-item questionnaire was designed to assess the unpredictable, uncontrollable, and overloaded respondents in their lives (Cohen et al., 1983). The PSS has been used in various settings and has been shown to relate to several psychological responses, including anxiety and depressive symptoms (Chang, 1998). A 5-point Likert scale is used for responses. Positive items are reverse scored (Items 4, 5, 7, and 8). Cohen et al. (1983) proposed that higher scores would indicate higher perceived stress.

The second instrument is the Connor-Davidson Resilience Scale (CD-RISC) developed by Connor and Davidson in 2003. There is a twenty-five-item questionnaire that investigates five dimensions. These five dimensions are personal competence, acceptance of change, control, secure relationships, and spiritual influences (Windle et al., 2011). Respondents need to choose from five-point responses such as: not true at all (0), rarely true (1), sometimes true (2), often true (3), or true nearly all the time (4). The final scores lie between 1- 100, the highest scores standing for highest resilience.

Pilot Study

The questionnaire was distributed to 35 students for the pilot study to measure the reliability and validity of the PSS and CD-RISC instruments. The reliability for the PSS is .80 and .93 for the

CD-RISC. Both instruments were valid and credible to use as both Cronbach's alpha is greater than 0.6 (Taber, 2017).

Population and Sampling

In this study, a simple random sampling method was used to ensure that this study has a proportional representation of the comparison between perceived stress and resilience among public and private undergraduates university students during the COVID-19 pandemic. The sample size was calculated by using the Slovin formula. According to Stephanie (2003), the researcher can sample the population with a desired degree and accuracy with Slovin's formula. In this study, the undergraduates' student population with the desired error tolerance is 5%.

Where: n = Sample Size, N = Study Population, and e = Level of Significance or Margin of Error (5%). The sample size was:

$$n = \frac{N}{1 + N(e)^2}$$

$$n = \frac{100}{1 + 100(0.05)^2}$$

Therefore, the sample size was 80 students from each institution.

The sample size in this study is 160 respondents. The study focused on a targeted population involved in public and private institutions; undergraduates students from University Malaysia Sarawak (UNIMAS) and SIDMA College ranged from 18-24 years old in any program.

A Google Forms link was created and distributed via WhatsApp, Telegram, and email to students for convenience. The online survey included an informed consent section, demography, the Perceived Stress Scale (PSS), and the Connor-Davidson Resilience Scale (CD-RISC). The data collection took three weeks and was exported into an IBM SPSS for further analysis.

Data Analysis

A descriptive analysis was conducted. Pearson Correlation was used to examine the relationship between perceived stress and resilience among public and private undergraduates university students. An independent T-Test was run to analyse the relationship between perceived stress and genders. A Linear Regression test was used to analyse perceived stress predictor resilience among public and private undergraduates university students during the COVID-19 pandemic.

4 RESULTS

The Pearson correlation analysis revealed no significant relationship between perceived stress and resilience among public and private undergraduates university students. The independent t-test

synonymously showed that there is no relationship between perceived stress and genders. The regression analysis also found no significant predictor for perceived stress to resilience among the respondents.

Table 1. Pearson Correlation Coefficient between PSS Score and RS Score among public and private university students during the COVID-19 pandemic

	Mean (SD)	N	r ²	p-value
PSS Score	24.15(3.9)	160	-.173*	.028
RS Score	97.51(18.3)			

NOTE: *Pearson coefficient correlation test was performed; r2=correlation coefficient, SD=Standard Deviation; level of significance at p<0.05; n=number of participants

Table 1 reported research sample (n=160), the Pearson Correlation strength between PSS (M=24.15, SD=3.9) and Resilience (M=97.51, SD=18.3) is (r=-.173, p=.028). The correlation coefficient r=-.173 shows a low negative correlation between perceived stress scale and resilience among public and private undergraduates university students during the COVID-19 pandemic. These findings are consistent with the previous research of Petrie (2010), Frigborg et al. (2006), and Solomon (2013), which mentioned that perceived stress and resilience had a negative correlation.

Table 2. Group Statistics between male and female

	Gender	N	Mean	Std. Deviation	Std. Error Mean
TotalScorePSS	Male	45	23.5111	3.85900	.57527
	Female	115	24.4000	3.86573	.36048

Table 3. Independent Sample Test

		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean differences	Std. error differences	95% Confidence Interval of the Difference	
									Lower	Upper
total score PSS	Equal variances assumed	.004	.948	-1.308	158	.193	-88889	.67940	-2.23077	.45299
	Equal variances not assumed			-1.309	80.546	.194	-88889	.67888	-2.23976	.46198

Table 2 and Table 3 reported the lack of significant differences in the perceived stress scores for female undergraduates students (M=24.40, SD=3.87) and male undergraduates students (M=23.52, SD=3.86) students: $t(158) = -1.30$ $p = .19$ during the COVID-19 pandemic. These findings are consistent with the study by Yikealo et al. (2018) reported there is no statistically significant difference in perceived stress scores between male and female students.

Table 4. Linear Regression in predicting perceived stress in the level of resilience among public and private university students during COVID-19 pandemic

Model Summary^b

Model	R	R square	Adjusted R square	Std. Error of the Estimate	F	Sig
1	.173 ^a	.030	.024	18.042	4.890	0.028 ^b

- a. Predictors: (Constant), TotalScorePSS
- b. Dependent Variable: TotalScoreCD_RISC

Linear regression examined whether perceived stress could predict the level of resilience among undergraduates students. The regression analysis resulted in table 4 revealed a significant relationship between the independent variable (Perceived Stress) and dependent variable (Resilience) as the significance value was 0.028. In the analysis p-values, $\leq .05$ would indicate a significant predictor. Therefore, the regression analysis results revealed that perceived stress was a significant predictor of resilience among public and private undergraduates university students

during the COVID-19 pandemic. These findings were consistent with previous studies by Petrie (2010), and Shilpa and Srimathi (2015), where the study also reported a significant relationship between perceived stress and resilience. These findings were sufficient to reject the null hypothesis.

5 DISCUSSION

This research examines the relationship between perceived stress and resilience among public and private undergraduates university students during the COVID-19 pandemic, with a total of 160 undergraduate students participating in the research. The first hypothesis was no significant relationship between perceived stress and resilience among public and private undergraduates university students. Based on the Pearson correlation in Table 1, the research findings reported a low negative relationship between PSS and RS among public and private undergraduates university students using the Pearson Correlation ($p \leq 0.05$). Previous research conducted by Petrie (2010), Frigborg et al. (2006), and Solomon (2013) mentioned that perceived stress and resilience had a negative correlation. Resilience was inversely related to perceived stress in university students (Pourafzal et al., 2013). These are supported by Tung et al. (2014), where increased resilience was correlated with reduced perceived stress in university students. A study by Ebenezer et al. (2020) and Shilpa and Srimathi (2015) also showed a significant negative relationship between perceived stress and resilience level among university students suggesting that stress and resilience influence one another. When a student's level of perceived stress decreased, hence the level of resilience would increase.

On the other hand, when perceived stress increases, resilience decreases. Therefore, students with higher resilience most likely perceived a 'stressful' situation as less stressful if they could cope well with stress. It also goes along with the ideas proposed by Wagnild and Young (1993), where resilience is described as one personality factor that promotes adaptation and moderates the adverse effects of stress; it is determined by the individual perception of a situation as stressful or not.

Following the hypothesis, if there is no relationship between perceived stress and genders, an independent t-test was conducted to assess the relationship between perceived stress and genders among the public and private undergraduates university students during the COVID-19 pandemic. The findings in table 2 and table 3 reported that there are no statistically significant differences in perceived stress and genders. A study conducted by Yikealo et al. (2018) stated there is no statistically significant difference in stress scores between male and female students as reported by the Chi-test for relationship $X^2(2, N = 123) = 4.01, p = 0.13$. However, both findings contradicted other studies which detected significant differences in stress scores between females and males. Gentry et al., 2007 reported a significant difference between the genders, with women reporting higher perceived stress. Thawabieh and Qaisy (2012) reported that female students are prone to stress compared to males. Ebenezer et al. (2020) also reported that female students experienced more stress than male students. Females experience more stress than males as females tend to express their feelings and issues. Hormonal differences should also be considered between the two genders. The American Psychological Association reported that although females and males report similar average stress levels, women were prone to report their stress levels than men.

Several studies have begun to recognise the influence of genders on stress as many reports revealed women reported higher levels of daily stressors than males (Gentry et al., 2007; Ptacek et al., 1992; Tamres et al., 2002). However, it is also essential to consider if the difference is due to gender norms or existing differences. The differences in gender's social role could affect the relationship between perceived stress and gender (Corrine Wilsey & Jennifer A. Lyke, 2015). Nonetheless, both genders may experience the same stressors but have different reactions. Hence, the present study findings contradicting other studies could be associated with the uneven distribution of gender as there are 115 females students compared to 45 male students as respondents in this study. It is also advisable to include direct observations or stress hormones measurements to understand the relationship between perceived stress and genders.

Linear regression was to test the final hypothesis. There is no significant predictor for perceived stress to resilience among public and private undergraduates university students during the COVID-19 pandemic. Table 4 of model summary linear regression reported a relationship between the independent variable and dependent variable. These findings were sufficient to reject the null hypothesis. Therefore, this indicates a significant predictor of perceived stress to resilience among public and private undergraduate students during the COVID-19 pandemic. An individual who perceives a situation as stressful might be due to poor stress management and could worsen if neglected. Prolonged stress can negatively impact a person's resilience level. Seery (2011) mentioned that unpleasant circumstances could negatively influence people in the short term and produce higher levels of resilience in the long term. These findings were supported by (Petrie 2010; Shilpa & Srimathi, 2015), where the study also reported a significant relationship between perceived stress and resilience. Loh, Schutte, and Thorsteinsson (2013) mentioned that resilience is a personal resource of an individual that can help in effectively coping with stress. Resilience can be built when exposed to stress (Graber et al., 2015). According to Newman (2019), individuals need to effectively manage cognitive and emotional systems in hardship to become more resilient. There is an association of stress between a person and their environment. According to Folkman (2013), it is evaluated as threatening, possibly endangering an individual's well-being. An individual will begin to analyse every possible resource available to deal with a situation if perceived as threatening. High resilient people could perceive situations as less stressful and consider themselves resourceful in stress-coping.

6 IMPLICATIONS AND LIMITATION

Masten (2001) explained that as students' resilience increases. Students are prone to be more successful in college as they can handle stress well. Hence, protective factors or social support systems can assist students in high-stress situations. The process of the findings of this research is to provide an awareness of the implications of perceived stress among public and private undergraduates students during COVID-19. Apart from that, students' awareness of self-resilience can develop. By using both questionnaires, students acknowledged their perceived stress and resilience levels during the COVID-19 pandemic. Previous literature or studies showed a significant increase in stress among undergraduates students during the pandemic COVID-19. With these findings, more resilience intervention will be provided in education settings to assist students in stress coping. In the findings, both public and private undergraduates students had a moderate level of perceived stress and a high level of resiliency. The findings are crucial for

providing a more detailed view for the school's guidance and counsellor to provide a better framework for building student resilience, especially during the COVID-19 pandemic. Besides, paying extra attention to different genders' roles and their differences in responding to stress is essential. Therefore, despite the differences, these findings hopefully could help counsellors have a better approach to both genders in the different approaches or reactions towards stress. Besides that, it is to provide more comprehensive resilience training and stress-management skills for undergraduates' students.

Several limitations are worth taking into consideration. The limitation of this study was the small sample of students and should include a large sample of undergraduates' students to improve credibility. Researchers are encouraged to do a larger sample size in future studies as it would be beneficial. Polit and Beck (2010) suggested that the larger the sample size, the greater the credibility and generalizability to the target population. Future research should consider more universities for similar research and use another sampling method. Apart from that is the uneven distribution of female and male respondents. Based on the findings, female students appeared to possess a higher resilience level than male students. The lack of focus on gender's social roles could influence the relationship between perceived stress and genders. Future research should better gather a large sample of female and male students to assess the relationship between perceived stress and gender. It also included gathering an equal number of gender responses if the study needs to assess the relationship between perceived stress and genders.

Furthermore, this study also fails to include sources of stressors that contribute to students' stress, for instance, academic achievements. Likewise, researchers should incorporate more variables like coping skills, self-esteem, motivation, and so on in their study. Conducting and distributing the questionnaires online is also a limitation as the level of honesty from respondents is unpredictable. Students might get distracted at home and influence their response. Researchers are advised to distribute questionnaires face-to-face to increase students' level of honesty. Besides that, the present study did not consider the effects of online learning, lack of social activities, lack of guidance as a possibility of stress among students. If these variables were included, it would have provided better guidance to schools' counsellors to produce an effective solution to help improve resiliency. Interventions such as resilience training, stress management should be more implemented in every educational sector to help improve students' well-being.

Apart from that, this study needs to be conducted from time to time to examine the stress and resilience level of students to ensure psychological and mental health. It is also recommended to include sources of stress, coping strategies, and students' academic performances in a future study to detect and identify new sources of stress. Therefore, daily stressors in students' lives can be handled well if a specific intervention accommodates the types of stressors. Apart from that, researchers might need to consider distributing questionnaires and utilising questionnaires with more domain in hardcopy to respondents to ensure and increase respondents' honesty instead of conducting online. Lastly, researchers can expand the location of undergraduates students as this study was only conducted in a public and private university in Sarawak. Researchers could conduct

to see the differences in perceived stress and resilience among undergraduates and postgraduate students.

7 CONCLUSION

As discussed, and observing the findings, resilience therapy is recommended to help undergraduates students during the COVID-19 pandemic. A counselling intervention or the Resilient Therapy Intervention (RT-I) developed by Amalia Madihie and friends can be utilised in the intervention process that focuses on adolescents' self-concept and emphasises on five compartments: basic, belonging, coping skills, learning, and core self (Madihie, 2016). This intervention should be incorporated in helping students develop a higher level of resilience and stress-coping better. It also facilitates students to perceive stress less negatively throughout their studies. Nevertheless, undergraduates' students will be able to think positively and handle their emotions better. Hence, this present study positively fosters guidance in assisting undergraduates students during the COVID-19 pandemic. Guidelines should be prepared and provide for policymakers on developing mechanisms to moderate the impacts of stress on students.

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