

RESEARCH ARTICLE

THE IMPACT OF COVID-19 PANDEMIC ON THE MENTAL HEALTH OF COLLEGE AND UNIVERSITY STUDENTS

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Abstract

Objectives: To evaluate the impact of COVID-19 pandemic on the mental health of Malaysian university and pre-university students, especially after the shift to online academic activities, following almost one year of experiencing the pandemic
Methods: A cross-sectional online survey was conducted among Malaysian pre-university and university students, nationwide, using perceived stress scale-10 questionnaire and another validated 11-construct questionnaire. **Key findings:** The online questionnaires were filled out by 383 Malaysian pre-university and university students. About 40% of the respondents reported moderate to severe level of loneliness and social isolation. There was a significant correlation between suicidal thoughts and the social isolation. The prevalence of moderate to severe suicidal thoughts (14% of the respondents) was more than the reported prevalence before COVID-19 pandemic. The residential state, gender and ethnicity of the respondents did not show an association with depressive and suicidal thoughts of the respondents. **Conclusion:** Loneliness and feeling social isolation were the most prevalent problems, as reported by the students. Suicidal Thoughts are more prevalent, compared to pre-COVID-19 reports. The educators and institution managers must seek for appropriate methods to address the critical condition.
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Introduction

The negative impact of COVID-19 pandemic on the psychological status of public [1] and university students [2] has been reported by several recent publications. The devastating economic effects of the pandemic, especially in developing countries [3], as well as the social restrictions due to the preventive measures have increased the feelings of insecurity, fear, anxiety and loneliness.

Starting from March 2020, the Malaysian government, in line with the Movement Control Order (MCO) has ordered the education sector to switch all academic activities into online-based

learning. This policy has been effective with variations in the intensity of avoidance from face-to-face activities till present [4].

While tertiary education institutions put tremendous efforts to tailor the teaching and assessment processes to the online education requirements, they must pay enough attention to the mental situation of the learners, at the same time. This is not a natural, technology-based movement, but a compulsory move, driven by a disastrous situation that affects the students in many ways. This study aims to evaluate the impact of COVID-19 pandemic, especially after

the shift to online academic activities, among Malaysian university and pre-university students, following almost one year of experiencing this situation.

Methods

Study design

The level of perceived stress was evaluated, quantitatively by using the Perceived Stress Scale-10 (PSS) [5] which is a widely used questionnaire. The focus of the instrument is on exploring the perceived stress during the past month. The second component of the survey is the assessment of mental health status of pre-university or university students by asking the participants to rate the severity of impacts to them during COVID-19 pandemic on 11 constructs. These constructs had been utilised by researchers before the pandemic [6,7], as well as during the COVID-19 crisis [8]. The constructs include the health impact of the pandemic to the students or their families, difficulty in concentration, sleep patterns, eating patterns, social relations, academic performance, living environment differences, financial problems, class workload, and any depressive and suicidal thoughts. A 4-point scale determines the severity of the impact; from 0 (none), 1 (mild), 2 (moderate), to 3 (severe).

Participants

All active Malaysian students of nationwide universities and colleges were eligible for participating in this study. The recruitment was through online platforms and social media during March and April 2021. The closure of campuses did not allow any form of face-to-face data collection. However, the shift of academic activities toward online platforms enhanced the online data collection processes.

Procedures

The study proposal was approved by the Faculty Research and Scholarly Activities (FRSA), Faculty of Pharmaceutical Sciences, UCSI University. Ethics approval was not required due to the non-interventional and non-sensitive nature of the survey. However, ethical concerns were reviewed and evaluated by FRSA. A Google Form consisted of the Perceived Stress Scale-10 (PSS) and the 11-construct questionnaire was disseminated among potential respondents. Upon agreeing with the written consent form, the participants were asked to fill in the demographic data section, before they proceed to the designed questionnaire. The participants were assured confidentiality of collected personal data.

Data analysis

The IBM Statistical Package for the Social Sciences (SPSS), version 22 was used for the descriptive analysis of the demographic data and the research findings, as well as the inferential analysis of covariates, associations, and regressions.

Results

Participants

The number of students who responded the online questionnaire was 385, but two were excluded due to their non-Malaysian nationality. The 383 eligible students were coming from 51 academic institutions. There were more female respondents than male students (217 versus 166). Only seven respondents were married. The detailed demographic data frequencies are summarised in Table 1. The SPSS dataset is available on Zenodo repository [9].

Table 1. Demographic data of the participants

Variables	Participants (N=383)
Gender, n (%)	
Male	166 (43.3)
Female	217 (56.7)

Academic Year, n (%)	
Pre-University	27 (7)
Degree-Junior	118 (30.8)
Degree-Senior	200 (52.2)
Postgraduate	38 (9.9)
Ethnicity, n (%)	
Malay	102 (26.6)
Chinese	195 (50.9)
Indian	86 (22.5)
Residential state, n (%)	
Melaka	27 (7)
Kuala Lumpur	102 (26.6)
Negeri Sembilan	13 (3.4)
Sarawak	39 (10.2)
Selangor	70 (18.3)
Perak	16 (4.2)
Johor	23 (6.0)
Pahang	17 (4.4)
Sabah	11 (2.9)
Terengganu	12 (3.1)
Perlis	8 (2.1)
Kelantan	12 (3.1)
Kedah	18 (4.7)
Pulau Pinang	15 (3.9)

Challenges to college students' mental health during COVID-19. The overall PSS score, based on 383 responses, was 17.99 which is moderate perceived stress Table 2. An increased level of

anxiety due to the COVID-19 pandemic was reported by 353 (91.68%) of the participants. Figure 1 shows the distribution of mental health aspects among the respondents.

Table 2. Overall Perceived Stress Scale-10 (PSS) score

PSS^a items	Score, Mean (SD)
In the past month, how often have you felt upset because of something that happened unexpectedly?	1.85 (1.129)
In the past month, how often have you felt that you were unable to control the important things in your life?	1.73 (1.145)
In the past month, how often have you felt nervous and "stressed"?	2.05 (1.123)
In the past month, how often have you dealt successfully with irritating life hassles?	1.81 (0.925)
In the past month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	1.78 (0.997)
In the past month, how often have you felt confident about your ability to handle your personal problems?	1.83 (1.051)
In the past month, how often have you felt that things were going your way?	1.63 (1.035)
In the past month, how often have you found that you could not cope with all the things that you needed to do?	1.81 (1.039)

In the past month, how often have you been able to control irritations in your life?	1.62 (1.109)
In the past month, how often have you felt that you were on top of things?	1.88 (1.075)
Overall PSS scores	17.99 (4.1)

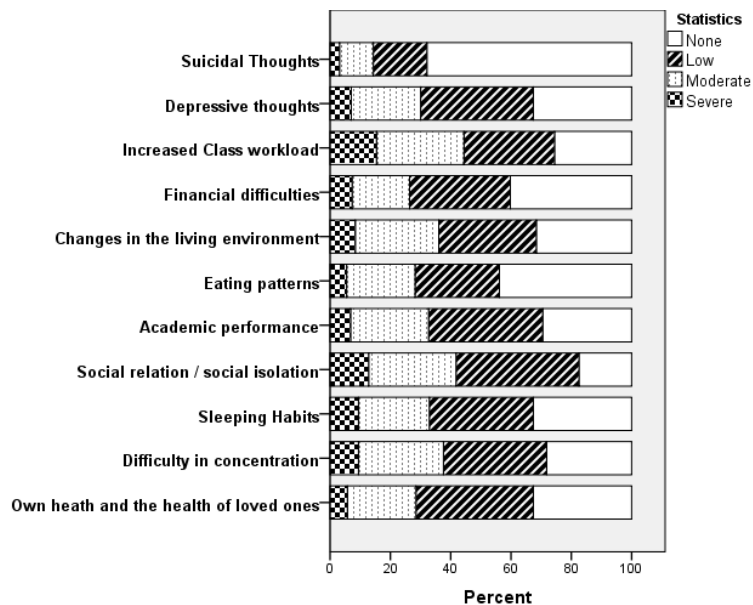


Figure 1. The distribution of mental health features among the respondents

About 67% of the students were suffering from depressive thoughts to some extent. Among those with depressive thoughts, 27 (almost 7% of whole respondents) are severe cases. The crosstab analysis shows the 12 students with severe suicidal thoughts are coming from the same 27 students. Nevertheless, there were 43 (11%) students with moderate suicidal thought. None of the gender, residential state, race, and academic level shows a significant association with suicidal and depressive thoughts in univariate factorial ANOVA analysis.

Nearly, three quarter of the respondents indicated that the academic workload had been increased to some extent by moving from face-to-face learning to online mode of learning. There is a significant association between the perception if increased academic workload with depressive thoughts ($p < 0.001$) and suicidal thoughts ($P < 0.001$).

About one quarter of the students (101 out of 383) reported a moderate to severe financial tensions during the pandemic. Only two (out of

12) students with severe suicidal thoughts reported low financial difficulties. Although the association between depressive thoughts and financial difficulties is significant, the distribution of depressive thoughts includes all categories of financial difficulties (even those who had reported no financial difficulties).

Moderate and severe changes in the living environment and eating patterns were reported by 36% and 28% of the respondents, respectively. Of those 55 students with moderate to severe suicidal thoughts, 38 reported moderate and severe change in the eating pattern, as well.

More than 40% (160 out of 383) of the respondents have been suffering from the feeling of social isolation, from moderate to severe levels. This parameter shows a significant association with both suicidal and depressive thoughts ($P < 0.001$).

Those who reported moderate and severe change in sleeping habits are 126 (33%) of the students. More than one third of the students in these two

categories (36%) are those students with moderate and severe suicidal thoughts, and this is almost 84% of those with moderate and severe suicidal thoughts (46 out of 55). The same scenario can be observed, regarding the difficulty in concentration. Where 144 (38%) respondents reported moderate and severe difficulties in concentrating, 41 (75%) of those with moderate and severe suicidal thoughts are present in the same categories. Exactly the same fraction (75%) of those with moderate and severe suicidal thoughts are those with moderate and severe concerns about their own health or the health of the loved ones during the pandemic (41 out of 55) ($P < 0.001$).

Discussion

The PSS-10 questionnaire has been widely used by researchers in the past three decades. Many published studies are available from different countries, shortly before the COVID-19 pandemic starts in late 2019. For example, a study from Saudi Arabia reported the mean PSS-10 score of 28.3 ± 3.7 for medical students in 2018 [10]. A study from United Kingdom [11] reported the PSS-10 mean score of 19.79 ($SD=6.37$) for social science university students in 2017. There are multiple studies from Malaysia, using SPP-10 instrument to evaluate the level of stress in Malaysian university students. The reported mean score has been 19.51 ($SD=5.92$) [12] in medical students, 18.9 [13] again in medical students, $30.3 (\pm 4.6)$ [14] in pharmacy students, and 27.5 ($SD 4.763$) [15] in undergraduate students. It is evident, based on frequent surveys from United Kingdom [16], India [17], China [18], Taiwan [19] and elsewhere, that the COVID-19 pandemic has aggravated the mental health situation among the students, worldwide. Obtaining the overall PSS-10 score of 17.99 in current study, as well as 18.8 in a study from the USA [8], would question the responsiveness of PSS-10 instrument, when the scores are compared with the reported ones, shortly before the pandemic. Previously, the construct validity of PSS-10 was questioned by other researchers [20]. It seems that COVID-19 pandemic provides an opportunity to relook at not only PSS-10, but

also some other instruments that are used conventionally for evaluating the mental disorder severity.

Referred to the findings of the 11-construct questionnaire, almost 14% of the respondents had moderate to severe suicidal thoughts. Therefore, an educator who is handling a class of 50 students should assume that seven students could be suffering from difficulty in concentration, severe depressive thoughts, and suicide tendency. The association between the suicidal thoughts and other typical symptoms of depression, such as sleep disorders, alteration in eating habits, difficulty in concentration is well documented [21,22]. A meta-analysis with a student population size of 634,662 students from the North America, Asia, Europe and Africa reported a 12-month prevalence of 10.6% suicidal thoughts (95% CI 9.1%–12.3%), before the COVID-19 pandemic [23]. This is significantly lower than the estimated prevalence of suicidal thoughts among the Malaysian students during the pandemic.

A tight relationship was found between social isolation and feeling loneliness, on one hand and suicidal thoughts on the other hand. The interesting point was the independence of the feeling of isolation and loneliness from financial difficulties. Although the socioeconomic inequalities have been worsened during the COVID-19 pandemic [24], the current study shows that the feeling of isolation and loneliness affects everyone, regardless of the student's financial situation.

Besides the suicidal thoughts, all other 10 variables of the questionnaire demonstrated at least 20% of respondents falling in the severe and moderate categories. This remarkable fraction of the college and university students needs a special attention of the educators and institutional managers during the pandemic. Those students should be identified actively, and a proper counselling program and orientation courses [25,26] must be implemented, based on the individual needs of each student. A closer relationship between the institution and parents [27] may result in a better outcome, with a more effective monitoring and a multidimensional

consultation package, under the supervision of a therapist, where needed.

Conclusion

As conclusion, over 20% of students reported moderate to severe indicators of stress, anxiety, and depression. About 14% of the respondents fall in moderate to severe suicidal ideation groups. Loneliness and feeling social isolation are the most prevalent problems, as reported by the students. The educators and institution managers must seek for appropriate methods to address the critical condition.

Limitations and Future Work

The COVID-19 pandemic is a specific condition that probably creates a very special pattern of anxiety, stress, and depression, different from general features of those mental disorders. A qualitative survey could help reveal the features, dimensions, and severity of the disorders. In-depth investigation of the problems, especially among those students with suicidal thoughts would be a necessary step.

The sample size of current study did not allow the authors to evaluate the contribution of academic major or institution in the outcomes' magnitude, due to the large number the participants' majors and institutions. This could reduce the power of analysis where the number of students in each group was very low.

References

1. Schafer SK, Sopp MR, Schanz CG, Staginnus M, Goritz AS, Michael T, et al. Impact of COVID-19 on public mental health and the buffering effect of a sense of coherence. *Psychotherapy and Psychosomatics*. 2020; 89: 386-92.
2. Yang C, Chen A, Chen Y. College students' stress and health in the COVID-19 pandemic: The role of academic workload, separation from school, and fears of contagion. *PloS one*. 2021; 16: e0246676.
3. Gutiérrez R, Ahamed M. COVID-19 response needs to broaden financial inclusion to curb the rise in poverty. *World Development*. 2021; 138: 105229.
4. Azra MN, Kasan NA, Othman R, Noor GAGR, Mazelan S, Jamari ZB, et al. Impact of COVID-19 on aquaculture sector in Malaysia: Findings from the first national survey. *Aquaculture Reports*. 2021; 19: 100568.
5. Cohen S, Kamarck T, Mermelstein R. A global measure of perceived stress. *Journal of Health and Social Behavior*. 1983; 24: 385-96.
6. Acharya L, Jin L, Collins W. College life is stressful today-Emerging stressors and depressive symptoms in college students. *Journal of American College Health*. 2018; 66(7): 655-64.
7. Baghurst T, Kelley BC. An examination of stress in college students over the course of a semester. *Health Promotion Practice*. 2014; 15: 438-47.
8. Son C, Hegde S, Smith A, Wang X, Sasangohar F. Effects of COVID-19 on college students' mental health in the United States: Interview survey study. *Journal of Medical Internet Research*. 2020; 22: e21279.
9. Fazlollah Keshavarzi. Psychological effects of COVID-19 on students. *Zenodo*. 2021.
10. Gazzaz ZJ, Baig M, Al Alhendi BSM, Al Suliman MMO, Al Alhendi AS, Al-Grad MSH, et al. Perceived stress, reasons for and sources of stress among medical students at Rabigh Medical College, King Abdulaziz University, Jeddah, Saudi Arabia. *BMC Medical Education*. 2018; 18: 29.
11. Denovan A, Dagnall N, Dhingra K, Grogan S. Evaluating the Perceived Stress Scale among UK university students: Implications for stress measurement and management. *Studies in Higher Education*. 2019; 44: 120-33.
12. Behzadnia A, Smith DR, Goodson ML. A cross-sectional examination of the relationship between approaches to learning and perceived stress among medical students in Malaysia. *Education for Health*. 2018; 31: 80.

13. Al-Dubai SAR, Alshagga MA, Rampal KG, Sulaiman NA. Factor structure and reliability of the Malay version of the perceived stress scale among Malaysian medical students. *Malaysian Journal of Medical Sciences*. 2012; 19: 43-9.
14. Alshagga MA, Nasir NZM, Behzadnia A, Jasamai M, Al-Absi A, Al-Dubai SAR, et al. Perceived stress and sources of stress among pharmacy students in Malaysian public and private universities: A comparative study. *Pharmacy Education*. 2015; 15.
15. Jia YF, Loo YT. Prevalence and determinants of perceived stress among undergraduate students in a Malaysian University. *Journal of Health and Translational Medicine*. 2018; 21.
16. Savage MJ, James R, Magistro D, Donaldson J, Healy LC, Nevill M, et al. Mental health and movement behaviour during the COVID-19 pandemic in UK university students: Prospective cohort study. *Mental Health and Physical Activity*. 2020; 19: 100357.
17. Raj U, Fatima A. Stress in students after lockdown due to COVID-19 threat and the effects of attending online classes. 2020; 1-8.
18. Li Y, Zhao J, Ma Z, Reynolds LS, Lin D, Chen Z, et al. Mental health among college students during the COVID-19 pandemic in China: A 2 wave longitudinal survey. *Journal of Affective Disorders*. 2021; 281: 597-604.
19. Wong LP, Alias H, Md Fuzi AA, Omar IS, Mohamad Nor A, Tan MP, et al. Escalating progression of mental health disorders during the COVID-19 pandemic: Evidence from a nationwide survey. *PloS One*. 2021; 16: e0248916.
20. Nielsen T, Dammeyer J. Measuring higher education students' perceived stress: An IRT-based construct validity study of the PSS-10. *Studies in Educational Evaluation*. 2019; 63: 17-25.
21. Ashrafioun L, Bonar E, Conner KR. Health attitudes and suicidal ideation among university students. *Journal of American College Health*. 2016; 64: 256-60.
22. Wang YH, Shi ZT, Luo QY. Association of depressive symptoms and suicidal ideation among university students in China: A systematic review and meta-analysis. *Medicine*. 2017; 96.
23. Mortier P, Cuijpers P, Kiekens G, Auerbach RP, Demyttenaere K, Green JG, et al. The prevalence of suicidal thoughts and behaviours among college students: A meta analysis. *Psychological Medicine*. 2018; 48: 554-65.
24. Marídel'Olmo M, Gotsens M, Pasarín MI, Rodríguez-Sanz M, Artazcoz L, Garcia de Olalla P, et al. Socioeconomic inequalities in COVID-19 in a European urban area: Two waves, two patterns. *International Journal of Environmental Research and Public Health*. 2021; 18: 1256.
25. Whitman NA. Student stress: Effects and solutions. ASHE-ERIC Higher Education Research Report No. 2, 1984: Education Resources Information Center. 1984; 115.
26. Millett-Thompson A. Dealing with college students' stress, anxiety, and depression. *The Journal for Quality and Participation*. 2017; 39: 24-7.
27. Torres JB, Solberg VS. Role of self-efficacy, stress, social integration, and family support in Latino college student persistence and health. *Journal of Vocational Behavior*. 2001; 59: 53-63.

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