

## **The Impact of Between Depression, Anxiety, And Stress on Academic Performance among University Students**

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### **ABSTRACT**

Depression, stress, and anxiety can all have an impact on academic performance through influencing students' cognitive functioning, self-esteem, and social isolation. The objective of this study is to examine the relationship between depression, anxiety, and stress with academic performance among university students. A total of 166 university students participated in this study, responding to two key questionnaires. The Depression, Anxiety, and Stress Scale (DASS-21) comprising 21 items developed by Lovibond, P. F., and S.H. Lovibond (1995) was utilized alongside 8 questions related to academic performance. The findings revealed there was a negative correlation between depression, stress, and anxiety levels and academic performance. The findings underscore the detrimental impact of psychological distress on students' educational outcomes. The implications of these findings call for a holistic approach to student wellbeing by monitoring students' mental health regularly and aiding students in overcoming life's challenges.

**Keywords:** depression, anxiety, stress, academic performance, students

### **INTRODUCTION**

In this current time, college students struggle to meet the rigorous standard that is necessary to succeed in the academic environment. Stressor typically results from the overwhelmed academic, peer pressure, cognitive and emotional issues that are outside of the classroom. Often high-pressure lifestyles may contribute to higher levels of stress among university students. University students might not be ready to handle additional pressure brought from family, social, academic and financial responsibility. Based on the Spring 2019 Health Assessment by American College of Health Association (2019) 34.2% undergraduate university students stated that stress becomes a factor that disturbs learning process with 45.3% having moderate stress.

College students are more susceptible to mental health issues such anxiety, depression, sadness, self-harm and suicidality due to difficult living conditions. Studies have shown that university students have a comparatively high rate of depression (Liu et al., 2019). Most of the problems faced by university students make them feel burdened and burned out about their education which may lead to depression in the long term. Additionally, the use of social media has become popular as most university students and youth spend their time browsing social media, socializing with their friends and sharing their lifestyle. However, social media these days is a place where cyberbullying takes place intended to hurt,

embarrass, and insult other individuals or victims of cyber bullying. Studies found the mechanisms underlying the association between cyberbullying victimization and depression among teenagers and young adults, and found that hopelessness, lowered self-esteem, psychological insecurity, and increased fears of loneliness (Maurya et al., 2022).

Depression, anxiety, and stress can all reduce cognitive performance. Cognitive refers to the awareness or consideration of mental processes including reasoning, remembering, and thinking (du Plessis, 2021). According to Limone et al., mental health issues may influence cognitive function (2022). Students may have difficulty concentrating or studying as successfully as their peers. Anxiety and depression have indirect effects on academic performance via working memory capacity. Therefore, higher levels of anxiety and sadness related to poorer academic performance (Agadzhanyan, 2022). In other words, anxiety and sadness were associated with greater deficiencies in attention and concentration (working memory capacities), which resulted in a drop in academic performance.

Young people with mental health issues exhibited lower self-esteem than those who did not have mental health issues (Loades 2018). Stress and self-esteem are closely intertwined, and self-esteem may impact many aspects of life, including scholastic and professional achievement. As a result, the lower a college student's self-esteem drops, the worse his or her academic performance suffers. Low self-esteem generally results in poor academic achievement, whereas strong self-esteem can result in higher marks (Gallard o, 2022). According to the American Psychological Association (2020), students must have self-esteem and perceived competence to take risks in their learning and recover from failure or adversity. Students who lack self-esteem or confidence doubt their ability to succeed, making them unable to engage in learning or undertake appropriate academic growth risks.

Students who are depressed, anxious, or stressed are more likely to avoid social interaction, which is a frequent tendency they may observe when depressed. Some people avoid activities they ordinarily love and withdraw from society. Others use booze or junk food to alleviate their pain and sadness (Soong, 2021). Students suffered from a lack of social contacts, motivation, and mental health issues such as boredom, loneliness, and anxiety because of the abruptly enforced social isolation (Leal Filho et al., 2021). Isolation has harmed their academic performance since they have been unable to communicate with and efficiently obtain knowledge from their peers and professors (Vighnarajah and Jolene, 2018).

## **OBJECTIVE**

The purpose of this study has been following specific research objectives, which are:

1. To identify the level of depression, anxiety and stress among university students
2. To investigate the relationship between depression, anxiety and stress with academic performance among university students

## **METHODOLOGY**

Survey research was used in this research study which the structure of the question. The main goal of the survey is to provide an insightful response to an engaging research topic for the larger target audience (David, 2019). The convenience sampling approach was employed in this research investigation. Questionnaire were distributed to university students from three different institutions: UITM Puncak Alam, Universiti Malaysia Pahang (UMP), and Unisel Bestari Jaya. The total number of respondents obtained was 157.

A set of questionnaires comprising a series of questions and items used to gather information from respondents about depression, anxiety, stress, and academic performance. The questionnaire was derived from Lovibond, P. F., and S. H. Lovibond's (1995) publication as well as the academia.edu website. The DASS-21 consists of three self-report measures designed to evaluate depression, anxiety, and stress, each with seven items broken into equivalent subscales. Additionally, it encompasses three distinct sections. Section A incorporates demographic variables like gender, age, and level of education.

In Section B, the DASS-21 questionnaire assessed depression, anxiety, and stress. Utilizing a three-point Likert scale, it identifies the degree of depression, anxiety or stress in an individual. The final section includes eight questions related to the respondent's academic performance. The items were obtained from academic.edu, serve as a measurement on academic success and the evaluation is based on a five-point scale ranging from "strongly disagree" to "strongly agree". Subsequently, the data acquired through surveys via Google Forms was analyzed using the Statistical Package for Social Sciences (SPSS) software was used to process the data after it has been obtained through surveys via Google Forms for further research and data analysis.

## RESULTS

### DESCRIPTIVE ANALYSIS

**Table 1** *Demographic Background*

Demographic Background	Frequency	Percent
Gender		
Male	55	35.0
Female	102	65.0
Total	157	100.0
Level of Education		
Foundation	12	7.6
Diploma	52	33.1
Degree	84	53.5
Postgraduate	9	5.7
Total	157	100.0
Age		
18 – 22	86	54.8
23 – 27	58	37.1
28 – 32	11	6.9
Above 32	2	1.3
<b>Total</b>	<b>157</b>	<b>100</b>

Table 1 revealed the demographic background of the respondents based on gender, level of education and age. It showed that number of females participated in this study (65%) is higher than male (35%). The prevalence of degree students is greater than other levels with 53.5%, where diploma holders is 33.1% and followed by foundation students as 7.6%. Next, the age distribution is shown that half of respondents are aged 18 to 22 with 54.8%, while others are aged 23 to 27 with 37.1%, followed by 6.9% of those between 28 and 32 years of age. The lowest frequency occurs above 32 years old with 1.3%.

**Table 2** *The Frequency of Respondents Depression*

Level of Depression	Frequency	Percent
Normal	28	17.8
Mild	34	21.6
Moderate	43	27.4
Severe	32	20.1
Extremely Severe	20	13.1
<b>Total</b>	<b>157</b>	<b>100.0</b>

Based on data presented in Table 2, the findings indicate that most of the respondents had moderate levels of depression (27.4%), followed by mild levels (21.6%), severe level of depression (20.1%) and the lowest is 13.1% for extremely severe. Notably, the highest level of severity reported by the respondent was moderate. These results highlight the presence of depression among a significant portion of the respondents, as evidence by active symptoms such as extreme sadness and diminished enthusiasm for life.

**Table 3** *The Frequency of Respondents Anxiety*

<b>Level of Anxiety</b>	<b>Frequency</b>	<b>Percent</b>
Normal	19	12.1
Mild	13	8.2
Moderate	43	27.4
Severe	24	15.3
Extremely Severe	58	37
<b>Total</b>	<b>157</b>	<b>100.0</b>

It is evident that a significant number of respondents, comprising 37% reported extremely severe levels of anxiety. Following closely behind, 27.4% of respondents experiencing moderate anxiety and severe level with 15.3%. The respondent's highest level of severity was extremely severe which indicated that more than half of all respondents experienced anxiety, which was often accompanied by frequent subjective fears and anxieties (as presented in Table 3).

**Table 4** *The Frequency of Respondents Stress*

<b>Level of Anxiety</b>	<b>Frequency</b>	<b>Percent</b>
Normal	69	44.0
Mild	27	17.2
Moderate	26	16.5
Severe	25	15.9
Extremely Severe	10	6.4
<b>Total</b>	<b>157</b>	<b>100.0</b>

According to the data presented in Table 4, almost half of the respondents (44.0%) show a normal sign of stress, 17.2% of the respondents showed mild stress symptoms, followed closely by moderate (16.5%) and severe (15.9%) stress symptoms. The fact that the highest proportion of respondents demonstrated normal levels of stress.

## **INFERENCEAL ANALYSIS**

**Hypothesis 1: The students' scale on depression presents a significant relationship with academic performance.**

**Table 5** *Pearson Correlation between Depression and Academic Performance*

<b>Correlation</b>	<b>Value</b>
Pearson	-.412
Sig. (2-tailed)	.000
N	157

The Pearson correlation coefficient, as presented in Table 5, was calculated to examine the relationship between depression and academic performance. The analysis revealed a moderate negative correlation between these variables, with a correlation coefficient of  $r(157) = -0.41$ ,  $p = 0.000$ . It can be inferred that as depression levels increase there is a significant decrease in

academic performance. The findings supporting the hypothesis that depression negatively impacts academic performance.

**Hypothesis 2: The students scale on anxiety presents a significant relationship with academic performance.**

**Table 6** *Pearson Correlation between Anxiety and Academic Performance*

Correlation	Value
Pearson	-.164
Sig. (2-tailed)	.040
N	157

The analysis of the data using Pearson correlation coefficient (Table 6), aimed to explore the association between anxiety and academic performance. The results indicated a weak negative correlation between these variables, with a correlation coefficient of  $r(157) = -0.164$ ,  $p = 0.040$ . This suggests that as levels of anxiety increase, there is a decline in academic performance, but the strength of this relationship is relatively weak. The findings support the hypothesis that anxiety has an adverse impact on academic performance.

**Hypothesis 3: The students scale on stress presents a significant relationship with academic performance.**

**Table 7** *Pearson Correlation between Stress and Academic Performance*

Correlation	Value
Pearson	-.205
Sig. (2-tailed)	.010
N	157

The Pearson correlation coefficient was computed to evaluate the relationship between stress and academic performance, as shown in Table 7. There was a weak negative correlation between the two variables,  $r(157) = -0.205$ ,  $p = .010$ . However, it is important to note that the correlation coefficient suggests a weak association indicating that other factors may also contribute to academic performance.

## DISCUSSION

The inferential analysis result showed depression has a significant relationship and negative correlation with academic performance where when depression increases academic performance will decrease. Meanwhile anxiety presents a significant relationship and has negative correlation with academic performance when anxiety increases academic performance will decrease. Moreover, stress also shows a significant relationship with negative correlation toward academic performance when stress increases academic performance will decrease. Since depression has a significant relationship with academic performance, depression may impact university student academic performance. Similarly, anxiety and stress exhibit a significant relationship with academic performance, as demonstrated by few studies. According to Awadalla, et al, (2020) there is a relationship between university students' academic performance and anxiety symptoms. Contrarily, this research revealed that students with moderate anxiety levels performed better in school, demonstrating that appropriate levels of anxiety related to fear of failing can increase students' self-motivation to perform better in various academic tasks.

According to Grotan et al. (2019), 17% of full-time students displayed signs of serious mental health issues, while 14% expressed low academic self-efficacy, and 6% of them reported were delaying their studies. Additionally, Zahit et al. (2022) found that university students with higher levels of mental health issues were more likely to experience poor academic performance. This

suggests a significant impact of mental health on academic outcomes. Furthermore, Bas (2021) suggested that the academic performance and mental well-being of university students may have been affected by the months of restriction and curfew during the Covid-19 pandemic.

## CONCLUSION

As the research's respondents are undergraduate students from a number of higher institutions in Malaysia, the findings revealed the need for universities to prioritize mental health support for students by providing accessible resources and services and enhancing mental health awareness in order to address the adverse impact of depression, anxiety, and stress on academic performance. In addition to this, regular mental health screenings, surveys, and assessments can help identify at-risk students early, which leads to appropriate interventions.

Moreover, considering the relationship between mental health and academic performance, universities can adapt the curriculum to promote students' well-being, such as by integrating stress management techniques, resilience-building activities, and promoting a supportive learning environment, which can positively influence both mental health and academic affairs of students. Strategies to promote a healthy balance between academics and self-care can improve the student's well-being and then increase their academic performance.

In general, the study revealed the significant impact of depression, anxiety and stress on academic performance among university students. It highlights the need of universities to emphasize mental health support services, adopt an approach which caters for student well-being and perform early identification and intervention strategies at higher institutions level. By addressing these issues, universities shall create an environment that promotes student success by prioritizing mental wellbeing in improving academic performance.

## REFERENCES

- Agadzhanyan, K. (2022, June 11). Anxiety, depression, and academic performance: The role of working memory capacity. *Psychology In Action*. <https://www.psychologyinaction.org/psychology-in-action-1/2022/6/11/a-nxiety-depression-and-academic-performance-the-role-of-working-memory-capacity>
- American Psychology Association (2020, January). Students Experiencing Low Self-esteem or Low Perceptions of Competence. <https://www.apa.org/ed/schools/primer/self-esteem>
- Andrade C. (2020). Sample Size and its Importance in Research. *Indian journal of psychological medicine*, 42(1), 102–103. [https://doi.org/10.4103/IJPSYM.IJPSYM\\_504\\_19](https://doi.org/10.4103/IJPSYM.IJPSYM_504_19)
- Arnaiz-Sánchez, P., de Haro, R., Alcaraz, S., & Mirete Ruiz, A. B. (2019). Schools that promote the improvement of academic performance and the success of all students. *Frontiers in Psychology*, 10, 2920. <https://doi.org/10.3389/fpsyg.2019.02920>
- Asif, S., Mudassar, A., Shahzad, T. Z., Raouf, M., & Pervaiz, T. (2020). Frequency of depression, anxiety and stress among university students. *Pakistan Journal of Medical Sciences Quarterly*, 36(5), 971–976. <https://doi.org/10.12669/pjms.36.5.1873>
- Awadalla, S., Davies, E.B. & Glazebrook, C. A longitudinal cohort study to explore the relationship between depression, anxiety and academic performance among Emirati university students. *BMC Psychiatry* 20, 448 (2020). <https://doi.org/10.1186/s12888-020-02854-z>
- Ayang, A., & Richard, N. (2022). A preliminary study on the factors affecting academic performance of foundation students during online learning. *Malaysian Journal of Social Sciences and Humanities (MJSSH)*, 7(4), e001409. <https://doi.org/10.47405/mjssh.v7i4.1409>
- Bains, N., & Abdijadid, S. (2022). Major Depressive Disorder. In StatPearls [Internet]. StatPearls Publishing.
- Bas, G. (2021). Relation between Student Mental Health and Academic Achievement Revisited: A Meta-Analysis. *Health and Academic Achievement - New Findings*. doi: 10.5772/intechopen.95766
- Bhardwaj P. (2019). Types of sampling in research. *Journal of the Practice of Cardiovascular Sciences*, 5(3), 157. DOI: 10.4103/jpcs.jpcs\_62\_19
- Blanco, V., Salmerón, M., Otero, P., & Vázquez, F. L. (2021). Symptoms of depression, anxiety, and stress and prevalence of major depression and its predictors in female university students. *International Journal of Environmental Research and Public Health*, 18(11), 5845. <https://doi.org/10.3390/ijerph18115845>



- David A. Story, Alan R. Tait (2019) Survey Research. *Anesthesiology*; 130:192–202 doi: <https://doi.org/10.1097/ALN.0000000000002436>
- Davies, C. (2020). A quick guide to quantitative research in the social sciences. <https://repository.uwtsd.ac.uk/id/eprint/1540/18/A%20quick%20guide%20to%20quantitative%20research%20in%20the%20social%20sciences.pdf>
- Daviu, N., Bruchas, M. R., Moghaddam, B., Sandi, C., & Beyeler, A. (2019). Neurobiological links between stress and anxiety. *Neurobiology of stress*, 11, 100191. <https://doi.org/10.1016/j.ynstr.2019.100191>
- du Plessis, S. (2021). Cognitive Skills and their Impact on Academic Achievement. Edublox Online Tutor | Development, Reading, Writing, and Math Solutions. <https://www.edublox.com/cognitive-skill-academic-achievement/>
- Fauzi, M. F., Anuar, T. S., Teh, L. K., Lim, W. F., James, R. J., Ahmad, R., Mohamed, M., Abu Bakar, S. H., Mohd Yusof, F. Z., & Salleh, M. Z. (2021). Stress, anxiety and depression among a cohort of health sciences undergraduate students: The prevalence and risk factors. *International Journal of Environmental Research and Public Health*, 18(6), 3269. <https://doi.org/10.3390/ijerph18063269>
- Gallardo, P. N. (2022). The relationship between self-esteem and burnout among college students amidst the online learning modality. Zenodo. <https://doi.org/10.5281/ZENODO.6654371>
- Goldman, L. (2022, July 15). Depression: What it is, symptoms, causes, treatment, and more. *Medicalnewstoday.com*. <https://www.medicalnewstoday.com/articles/8933>
- Grøtan, K., Sund, E. R., & Bjerkeset, O. (2019, January 8). Mental health, academic self-efficacy and study progress among college students – the shot study, Norway. *Frontiers*. Retrieved February 23, 2023, from <https://doi.org/10.3389/fpsyg.2019.00045>.
- Hayat, A. A., Shateri, K., Amini, M., & Shokrpour, N. (2020). Relationships between academic self-efficacy, learning-related emotions, and metacognitive learning strategies with academic performance in medical students: a structural equation model. *BMC Medical Education*, 20(1), 76. <https://doi.org/10.1186/s12909-020-01995-9>
- Higuera, V. (2021, September 3). Social anxiety and depression: Triggers and treatments. *Healthline*. <https://www.healthline.com/health/anxiety/social-anxiety-and-depression>
- Kassarnig, V., Mones, E., Bjerre-Nielsen, A., Sapiezynski, P., Dreyer Lassen, D., & Lehmann, S. (2018). Academic performance and behavioral patterns. *EPJ Data Science*, 7(1). <https://doi.org/10.1140/epjds/s13688-018-0138-8>
- Leal Filho, W., Wall, T., Rayman-Bacchus, L., Mifsud, M., Pritchard, D. J., Lovren, V. O., Farinha, C., Petrovic, D. S., & Balogun, A.-L. (2021). Impacts of COVID-19 and social isolation on academic staff and students at universities: a cross-sectional study. *BMC Public Health*, 21(1), 1213. <https://doi.org/10.1186/s12889-021-11040-z>
- Limone, P., & Toto, G. A. (2022). Factors that predispose undergraduates to mental issues: A cumulative literature review for future research perspectives. *Frontiers in Public Health*, 10, 831349. <https://doi.org/10.3389/fpubh.2022.831349>
- Liu, Y., Zhang, N., Bao, G., Huang, Y., Ji, B., Wu, Y., Liu, C., & Li, G. (2019). Predictors of depressive symptoms in college students: A systematic review and meta-analysis of cohort studies. *Journal of affective disorders*, 244, 196–208. <https://doi.org/10.1016/j.jad.2018.10.084>
- Loades, M. (2018). The overlap between low self-esteem and anxiety/depression in CAMHS. *ACAMH; The Association for Child and Adolescent Mental Health*. <https://www.acamh.org/research-digest/self-esteem-anxiety-depression/>
- Malhi, G. S., & Mann, J. J. (2018). Depression. *Lancet*, 392(10161), 2299–2312. [https://doi.org/10.1016/s0140-6736\(18\)31948-2](https://doi.org/10.1016/s0140-6736(18)31948-2)
- Masud, S., Mufarrih, S. H., Qureshi, N. Q., Khan, F., Khan, S., & Khan, M. N. (2019). Academic performance in adolescent students: The role of parenting styles and Socio-demographic factors - A cross sectional study from Peshawar, Pakistan. *Frontiers in Psychology*, 10, 2497. <https://doi.org/10.3389/fpsyg.2019.02497>
- Maurya, C., Muhammad, T., Dhillon, P. et al. (2022). The effects of cyberbullying victimization on depression and suicidal ideation among adolescents and young adults: a three year cohort study from India. *BMC Psychiatry* 22, 599. <https://doi.org/10.1186/s12888-022-04238-x>
- Meyer, M. (n.d.). Tough day? Stress can predict social interaction. *Dartmouth.edu*. Retrieved January 4, 2023, from <https://home.dartmouth.edu/news/2021/10/tough-day-stress-can-predict-social-interaction>
- Minev, M., Petrova, B., Mineva, K., Petkova, M., & Strebkova, R. (2018). Self-esteem in adolescents. *Trakia Journal of Science*, 16(2), 114–118. <https://doi.org/10.15547/tjs.2018.02.007>
- Mirawdali, S., Morrissey, H., & Ball, P. (n.d.). Academic anxiety and its effects on academic performance academic anxiety and its effects on academic performance academic anxiety and its effects on academic performance. *Journalcra.com*. Retrieved February 1, 2023, from <https://www.journalcra.com/sites/default/files/issue-pdf/30653.pdf>

- Okano, K., Kaczmarzyk, J. R., Dave, N., Gabrieli, J. D. E., & Grossman, J. C. (2019). Sleep quality, duration, and consistency are associated with better academic performance in college students. *Npj Science of Learning*, 4(1), 16. <https://doi.org/10.1038/s41539-019-0055-z>
- Olson, K., Smyth, J. D., & Ganshert, A. (2018). The Effects of Respondent and Question Characteristics on Respondent Answering Behaviors in Telephone Interviews. *Journal of Survey Statistics and Methodology*, 7(2), 275–308.<https://doi.org/10.1093/jssam/smy006>
- Penninx, B. W., Pine, D. S., Holmes, E. A., & Reif, A. (2021). Anxiety disorders. *Lancet*, 397(10277), 914–927. [https://doi.org/10.1016/s0140-6736\(21\)00359-7](https://doi.org/10.1016/s0140-6736(21)00359-7)
- Rahman, A. A., Zaidi, F., Razak, A., & Hassim, A. (2021). Stress, anxiety and depression among private higher education student during movement control order (MCO) in Malaysia. <http://journalarticle.ukm.my/18478/1/50991-170237-1-PB.pdf>
- Ramón-Arbués, E., Gea-Caballero, V., Granada-López, J. M., Juárez-Vela, R., Pellicer-García, B., & Antón-Solanas, I. (2020). The prevalence of depression, anxiety and stress and their associated factors in college students. *International Journal of Environmental Research and Public Health*, 17(19), 7001. <https://doi.org/10.3390/ijerph17197001>
- Samsudin, K., Sulaiman, N. N. S. B., & Kamarudin, A. H. (2022). Depression, anxiety, and stress during pandemic covid-19 among university first-year students. *Malaysian Journal of Public Health Medicine*, 22(2), 87–94. <https://www.mjphm.org/index.php/mjphm/article/view/1558>
- Shi, Y., & Qu, S. (2021). Cognition and academic performance: Mediating role of personality characteristics and psychology health. *Frontiers in Psychology*, 12, 774548. <https://doi.org/10.3389/fpsyg.2021.774548>
- Simkus, J. (2022). What is a pilot study? *Simply Psychology*. [www.simplypsychology.org/pilot-studies.html](http://www.simplypsychology.org/pilot-studies.html)
- Soong, J. (2021). Depression traps: Social withdrawal, rumination, and more. *WebMD*.<https://www.webmd.com/depression/features/depression-traps-and-pitfalls>
- Stockemer, D., Stockemer, G., & Glaeser. (2019). Quantitative methods for the social sciences (Vol. 50, p. 185). Quantitative methods for the social sciences: Springer International Publishing.
- Ströhle, A., Gensichen, J., & Domschke, K. (2018). The diagnosis and treatment of anxiety disorders. *Deutsches Arzteblatt International*, 155(37), 611–620. <https://doi.org/10.3238/arztebl.2018.0611>
- Tadese, M., Yeshaneh, A., & Mulu, G. B. (2022). Determinants of good academic performance among university students in Ethiopia: a cross-sectional study. *BMC Medical Education*, 22(1), 395. <https://doi.org/10.1186/s12909-022-03461-0>
- Tus, J. (2021). The new normal of education: Depression, anxiety, stress and academic performance of tertiary students. *figshare*. <https://doi.org/10.6084/M9.FIGSHARE.15086250.V1>
- Vasugi, S., & Hassan, N. C. (n.d.). Depression, anxiety and stress among postgraduate students. *Edu.My*. Retrieved January 25, 2023, from [http://www.medic.upm.edu.my/upload/dokumen/2019042915584313\\_03 87\(Final\)13.pdf](http://www.medic.upm.edu.my/upload/dokumen/2019042915584313_03%2087(Final)13.pdf)
- Vighnarajah, S., & Jolene, L. S. Y. (2018). Assessment of diversity through student isolation: Qualitative investigation of academic, social, and emotional isolation. *International Journal of Teacher Education and Professional Development*, 1(2), 1–13. <https://doi.org/10.4018/ijtepd.2018070101>
- Wong, S. S., Wong, C. C., Ng, K. W., Bostanudin, M. F., & Tan, S. F. (2023). Depression, anxiety, and stress among university students in Selangor, Malaysia during COVID-19 pandemics and their associated factors. *PloS One*, 18(1), e0280680. <https://doi.org/10.1371/journal.pone.0280680>
- Zahir Osman, Wardah Mohamad, Ratna Khuzaimah Mohamad, Liana Mohamad and Tuan Fatma Tuan Sulaiman (2019). Enhancing students' academic performance in Malaysian online distance learning institutions. *Asia Pacific Journal of Educators and Education*, 33, 19–28. <https://doi.org/10.21315/apjee2018.33.2>
- Zahit, R. A., Omar Lim, S. L., & Ling, J. L. Y. (2022). COVID-19: Mental Health and Academic Performance Among University Students. *Trends in Undergraduate Research*, 5(1), e1-9. <https://doi.org/10.33736/tur.3861.2022>