ORIGINAL RESEARCH ARTICLE

Mental Health of University Students in Northern Malaysia

Theingi Maung Maung[1], Phyo Thet Naing Win[2], Win Myint Oo[3*]

[1]AIMST University, Malaysia
[2]Freelance Researcher, Yangon, Myanmar
[3]Mahidol University, Salaya, Thailand

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ABSTRACT

Context/Background: Today, poor mental health is one of the most neglected diseases although it is one of the leading causes of disabilities in both developed and developing countries. This mental health issue becomes a problem among university students too. This study was aimed to determine the prevalence and associated factors of depression, anxiety, and stress (DAS) among university students.

Methodology: A cross-sectional study was carried out in a private university of northern Malaysia during 2020. A random sample of 161 students were included and DASS-21 was used to determine the prevalence of DAS. Multiple logistic regression analysis was performed to examine the associated factors.

Results: The prevalence of DAS among students were 34.8%, 42.2%, and 33.5%, respectively. In contrast to years 2 and 4, the prevalence of all types of mental disorders were lower in years 1 and 3. The students' living area, residence, academic year, and parental income were significantly associated with anxiety whereas the age group of the students and parent's income did so for depression. The variables; age group, academic year and parent's income were identified as significant determinants for the presence of stress among students.

Conclusions: The significant extent of the mental health problems was detected among university students in Malaysia. Despite the small sample, this analysis indicates that opportunities exist to improve campus-based mental health education and psychological support among university students.

Key-words: Anxiety, DASS-21, Depression, Malaysia, Mental wellbeing, Stress

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***Correspondence:** Win Myint Oo (Email: drwinuch@gmail.com)

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INTRODUCTION

Today, poor mental health is one of the most neglected diseases although it is one of the leading causes of disabilities in both developed and developing countries.[1] Depression, anxiety and stress have a tremendous harmful effect to a person as well as a society. These can lead to adverse outcomes such as increased suicidal tendency, impaired ability to work effectively, burnout etc.[2] Now-a-days, poor mental health becomes a universal problem in the world[3] and World Health Organization (WHO) stated that mental health is vital to human health[4]. United Nations also estimated that one in four people is going to experience a mental health condition in their lifetime, globally. In the global burden of disease, depression is ranked third, currently and is projected to rank first in 2030.[5] In Malaysia, mental health issues are increasingly prevalent because of rapid cultural and life style changes, resulting from urbanization and globalization.[6]

University students are an inimitable group of people passing the crucial time of life in which they encounter many stressful circumstances.[7] Consequently, they are at risk to suffer from mental illnesses, which in turn disturb their academic performance[8]. Based on the results of previous studies, depression, anxiety and stress are very common among university students, worldwide.[8-13] Therefore, there is a need for greater attention to their mental wellbeing. Besides, a Bangladeshi study[11] revealed that the private university students are more likely to suffer from poor mental health compared to those of public universities due to a variety of reasons. Hence, the present study was conducted in a private university of Northern Malaysia to determine the prevalence of depression, anxiety, and stress, and their associated factors among the students.

METHODOLOGY

Ethical consideration: Ethical approval was obtained from the institutional ethical committee of AIMST University with the reference number of - FOM/SSM/2019/061.

Study design and participants: A cross-sectional study was conducted in AIMST, a private university located in the northern Malaysia, during January to May 2020. Multi-staged random sampling was applied. Three out of seven faculties (Medicine, Dentistry, Pharmacy, Applied Sciences, Engineering, Allied Health Professions, and Business & Management) were randomly selected first. Then, undergraduate students were chosen randomly at the next stage. Selected students were asked to give informed consent to participate in this study. Finally, a random sample of 161 students from Biotechnology, Business and Engineering courses were involved.

Written informed consent was taken from the participants before commencing the data collection. The purpose of the study was explained. Anonymity, privacy, and confidentiality were ensured. The participants who refused to join the study, or who were less than 18 years of age at the time of data collection, were excluded. All the information provided by the participants were kept confidential.

Study instrument: The anonymous self-administered questionnaire was used in data collection. There were two main sections in the questionnaire, comprised of sociodemographic component (Section A) and mental health assessment component (Section B).

The sociodemographic section included age, gender, race, place of origin (whether urban or rural), parent's occupation and income, type of faculty, academic level (year of study), and current residence (university hostel or not).

Section B assessed the mental health by using the validated Bahasa Malaysia version of Depression Anxiety Stress Scale (DASS-21)[14], which consisted of three subscales, namely, depression, anxiety, and stress. Each subscale contained seven items and finally, there were 21 items in the DASS-21.[14,15] The internal consistency was 0.84, 0.74 and 0.79, respectively, for depression, anxiety, and stress.[16] The participants were asked to use 4-point severity scales, ranging from 0 to 3, for each item, based on their experiences over the past week. The final score for the three subscales was obtained by multiplying the sum of the subscale scores by two. The depression levels of respondents are categorized as normal (0–9), mild (10–13), moderate (14–20), severe (21–27), and extremely severe (≥28); anxiety levels are classified as normal (0–7), mild (8–9), moderate (10–14), severe (15–19), and extremely severe (≥20); and stress is broken down as normal (0–14), mild (15–18), moderate (19–25), severe (26–33), and extremely severe (≥34).[14-16]

Statistical Analysis: All the collected data were analysed using the IBM Statistical Package of Social Sciences (SPSS) version 16.0 software. Both descriptive and inferential statistics were used in the study. Mean and standard deviation (SD) were estimated for continuous quantitative variables whereas frequency tables were constructed for categorical data. Multiple logistic regression with a backward deletion strategy was performed to identify the factors associated with depression, anxiety, and stress. Any variable with a p-value of ≤0.25 in univariate analysis (or) simple logistic regression analysis has been selected as a candidate variable to be included in the multivariate analysis.

RESULTS

A random sample of 161 students were included in the study. Their sociodemographic characteristics, including parental occupation and income, as well as the faculty and academic level they were attending at the time of data collection, are shown in Table 1.

Table 1: Sociodemographic characteristics of the respondents (n=161)

Variables	Respondents (%)
Age-group*	
19-22	81 (50.3)
23-27	80 (49.7)
Gender	
Male	75 (46.6)
Female	86 (53.4)
Race	
Chinese	110 (68.3)
Indian	46 (28.6)
Malay	4 (2.5)
Others	1 (0.6)
Place of origin	
Rural	38 (23.6)
Urban	123 (76.4)
Parent's occupation	
Government	53 (32.9)
Private	108 (67.1)
Parent's income (Ringgit)	
≤5000	109 (67.7)
>5000	52 (32.3)
Faculty	
Biotechnology	58 (36)
Management	51 (31.7)
Engineering	52 (32.3)
Academic level	
Year1	23 (14.3)
Year2	46 (28.6)
Year3	55 (34.1)
Year4	37 (23)
Current residence	
Hostel	84 (52.2)
Non-hostel	77 (47.8)

*Mean age (standard deviation) was 22.5 (1.8) years

Table 2: The severity of depression, anxiety and stress among respondents (n=161)

Variable	Respondents (%)
Depression	
Normal	105 (65.2)
Mild	9 (5.6)
Moderate	30 (18.6)
Severe	3 (1.9)
Very severe	14 (8.7)
Anxiety	
Normal	93 (57.8)
Mild	13 (8.1)
Moderate	26 (16.1)
Severe	9 (5.6)
Very severe	20 (12.4)
Stress	
Normal	107 (66.5)
Mild	30 (18.6)
Moderate	9 (5.6)
Severe	14 (8.7)
Very severe	1 (0.6)

Only two categories (i.e., presence or absence) were considered for further analysis in order to assess the factors associated with depression, anxiety and stress.

The majority of the respondents were females (53.4%), Chinese (68.3%), urban dwellers (76.4%) and those living in the hostel (52.2%).

The prevalence of depression, anxiety and stress among the respondents were 34.8% (95%CI: 27.5%, 42.7%), 42.2% (95% CI: 34.5%, 50.3%) and 33.5% (95% CI: 26.3%, 41.4%), respectively. Most students were in moderate category. The severity of these illnesses is shown in Table 2.

The prevalence of depression, anxiety and stress according to the sociodemographic characteristics of the respondents are shown in Tables 3. The present study found out that although the prevalence of depression, anxiety and stress were the lowest at the Year 1 level, these became higher or highest at the Years 2 and 4. Out of four academic levels, the prevalence of all types of mental disorder were lower in years 1 and 3 compared to the remaining years (i.e., years 2 and 4). These apparently look like bimodal. See Figure 1. It means that the academic level might have some significant influence on the occurrence of these mental health problems.

Multiple logistic regression analysis was done with a backward deletion strategy to assess the association between characteristics of the respondents and DAS, separately. According to the predetermined selection criteria for the variables to be included in the multivariate analysis (model building procedure), only age group, parent's income and faculty were chosen to examine their association with depression. The final model contained age group of the students and parent's income (Table 4). It means that the older students were 3.5 times more likely to have depression ($p = 0.001$) whereas the students whose parental income is more than 5000 ringgits a month were 0.2 times less likely (or 80% reduced chance) to have depression ($p < 0.001$), compared to their counterparts. However, living area, residence, academic level, and the parent's income were found to have significant association with anxiety (Table 4). The variables: age group, academic level and parent's income were identified as significant determinants for the presence of stress among students (Table 4).

DISCUSSION

The present study found the prevalence of depression, anxiety and stress among university students to be 34.8%, 42.2%, and 33.5%, respectively. These frequencies are lower than results reported in studies done in Pakistan (75%, 88.4% and 84.4%, respectively)[9], Bangladesh (96.3%, 97.7%, and 89.7%, respectively)[10], India (59.2%, 86.5% and 52.7%, respectively)[17], and Jordan (78.7%, 67.9% and 58.7%, respectively)[18]. However, the prevalence of DAS detected in this study are higher than those revealed in studies conducted in Spain (18.4%, 23.6% and 34.5%, respectively)[8] and China (27.3%, 33.4% and 12%, respectively)[12].

Table 3: Sociodemographic characteristics of the respondents and DAS

Variables (n)	Depression (%)	Anxiety (%)	Stress (%)
Age-group			
19-22 (81)	22 (27.2)	29 (35.8)	20 (24.7)
23-27 (80)	34 (42.5)	39 (48.8)	34 (42.5)
Gender			
Male (75)	23 (30.7)	26 (34.7)	22 (29.3)
Female (86)	33 (38.4)	42 (48.8)	32 (37.2)
Race			
Malay (4)	2 (50)	2 (50)	2 (50)
Chinese (110)	40 (36.4)	51 (46.4)	40 (36.4)
Indian (46)	13 (28.3)	14 (30.4)	11 (23.9)
Others (1)	1 (100)	1 (100)	1 (100)
Place of origin			
Rural (38)	11 (28.9)	11 (28.9)	9 (23.7)
Urban (123)	45 (36.6)	57 (46.3)	45 (36.6)
Parent's occupation			
Government (53)	20 (37.7)	25 (47.2)	2 (39.6)
Private (108)	36 (33.3)	43 (39.8)	33 (30.6)
Parent's income			
≤5000 (109)	47 (43.1)	51 (46.8)	42 (38.5)
>5000 (52)	9 (17.3)	17 (32.7)	12 (23.1)
Faculty			
Biotechnology (58)	15 (25.9)	20 (34.5)	18 (31)
Management (51)	24 (47.1)	27 (52.9)	20 (39.2)
Engineering (52)	17 (32.7)	21 (40.4)	16 (30.8)
Academic level			
Year 1 (23)	0 (0)	3 (13)	1 (4.3)
Year 2 (46)	22 (47.8)	24 (52.2)	18 (39.1)
Year 3 (55)	20 (36.4)	22 (40)	18 (32.7)
Year 4 (37)	14 (37.8)	19 (51.4)	17 (45.9)
Current residence			
Hostel (84)	27 (32.1)	29 (34.5)	25 (29.8)
Non-hostel (77)	29 (37.7)	39 (50.6)	29 (37.7)

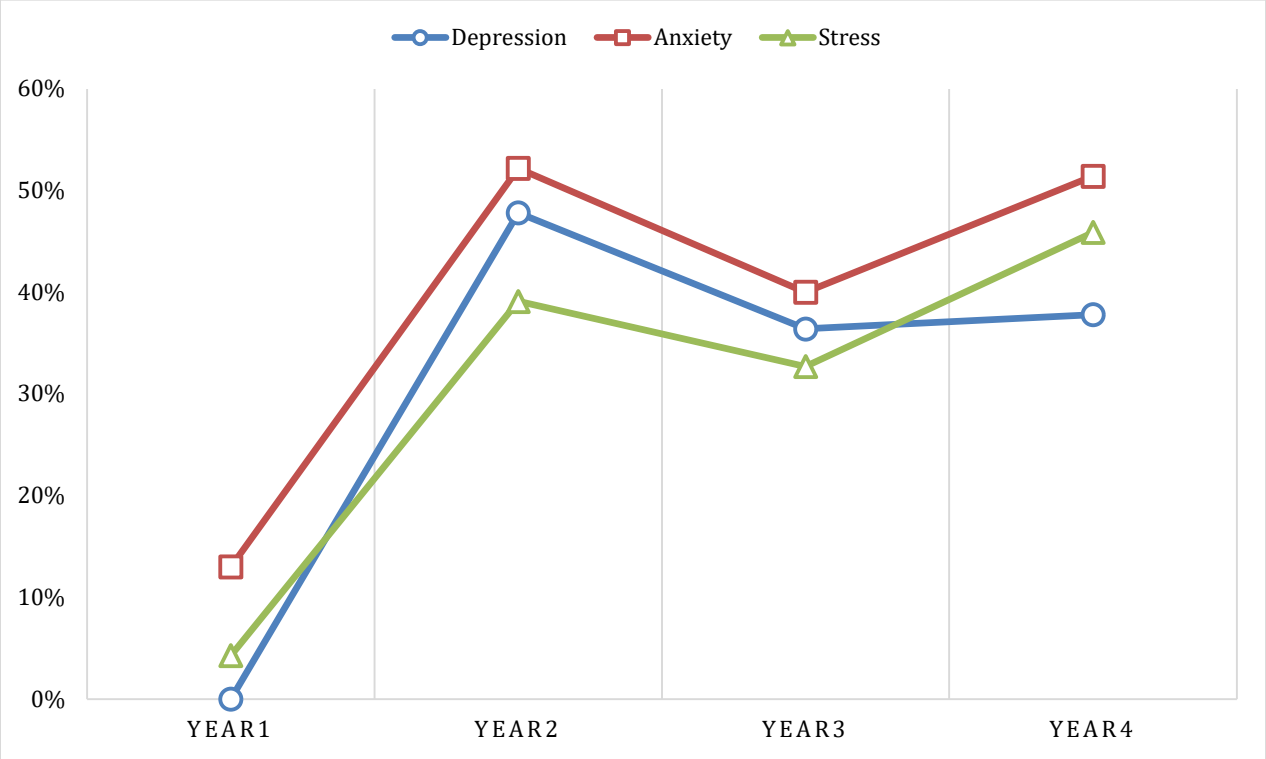

Figure 1: The prevalence of depression, anxiety and stress according to the academic level

Table 4: The results of multiple logistic regression to identify the determinants of DAS

Variables	Depression OR_{adj} (95% CI)	Anxiety OR_{adj} (95% CI)	Stress OR_{adj} (95% CI)
Age-group			
19-22	Reference		Reference
23-27	3.5 (1.7, 7.6)**		2.4 (1.0, 5.5)*
Place of origin			
Rural		Reference	
Urban		2.4 (1.0, 5.8)*	
Parent's income (Ringgit)			
≤5000	Reference	Reference	Reference
>5000	0.2 (0.1, 0.4)***	0.4 (0.2, 0.9)*	0.3 (0.1, 0.7)**
Academic level			
Year 1		0.2 (0.04, 0.7)*	0.1 (0.01, 0.6)*
Year 2		0.9 (0.4, 2.4)^{ns}	0.8 (0.3, 2.3) ^{ns}
Year 3		0.6 (0.2, 1.4) ^{ns}	0.6 (0.2, 1.6) ^{ns}
Year 4		Reference	Reference
Current residence			
Hostel		Reference	
Non-hostel		2.0 (1.0, 4.0)*	

*p<0.05, **p<0.01, ***p<0.001, ns = not significant (i.e., p>0.05), OR_{adj} = Adjusted Odds Ratio

All studies were carried out among college/university students using the same instrument (DASS-21) in assessing the mental health of the respondents. Therefore, these discrepancies may be due to the differences in socioeconomic and/or cultural conditions among study populations. A study done in Melaka Manipal Medical College, Malaysia during 2014 also reported that the prevalence of DAS among students were 30.7%, 55.5%, 16.6%, respectively.[2] The socio-demographic characteristics of the participants (age, gender and whether they are attending medical university or not, etc.) and time of the study (before or during Covid-19 pandemic period) would be responsible for these differences.

There was no significant association between gender and DAS in the present study. This finding agrees with studies conducted in Pakistan[9], and Bangladesh[10], Malaysia[19], and Indonesia[20]. However, the opposite findings were observed in some studies. A study carried out in South Africa[21] concluded that female students were more likely to suffer mental distress, compared to male students. The Spanish study[8] also reported that female students were more prone to anxiety and stress than male students. In contrast, the Chinese study[12] disclosed that males had a higher risk of having depression and anxiety than females. The differences in sociocultural conditions among study populations might be responsible for these contradictory findings.

In this study, parental income was significantly associated with DAS. This is consistent with studies conducted in Bangladesh[22] and Malaysia[2]. The Bangladeshi study[22] reported that there was a significant association between low parental socioeconomic status and psychological distress among university students. Similarly, the significant influence of monthly family income on the occurrence of depression and stress was noted in the Malaysian study.[2] However, another Malaysian study observed that there was no significant association between DAS and family income.[19] The differences in demographic and sociocultural conditions among study populations might be responsible.

The present study observed that the older students had a greater risk of having depression and stress than their counterpart. A similar study done in Hong Kong[23] also reported that there was a significant and positive association between age of the students and DAS. However, an Indian study[14] reported the inverse relationship between age and DAS. Although the academic level was significantly related to anxiety and stress in this study, a Chinese study[12] reported that academic level had significant effect on depression only. An Indonesian study also revealed that the academic level was significantly associated with depression and stress; no significant association was detected with anxiety.[20] These discrepancies could be explained by the differences in socioeconomic and/or cultural conditions among study populations.

In the present study, urban dwellers and those, not living in the university hostel, were two times more likely to suffer anxiety. It is consistent with the finding of a previous study done in Bangladesh.[10] Besides, the significant effect of accommodation environment on students' mental health was also reported by others.[24,25]

LIMITATIONS

The following limitations should be kept in mind while interpreting the results. First, this study used a cross-sectional design that is unable to produce a conclusive causal relationship. Second, this study based on students' self-reported information, which makes the study unlikely to avoid recall bias. Third, the small sample is collected from one private university of Northern Malaysia; hence, it is not possible to generalise the results to the whole population.

Conclusion

We conclude that there is a significant problem of mental health issues among university students in Malaysia. These are associated with their individual, social and other considerations such as parental income (depression, anxiety and stress), age group (depression and stress), academic level (anxiety and stress), place of origin (anxiety) and current residence (anxiety). Appropriate interventions such as counselling, campus-based mental health education, and psychosocial support should be implemented to promote their mental wellbeing. Priority should be given to students from poor income families, from academic years 2 and 4, from urban area and those currently not living in hostels (university's dormitory), and those with older ages (> 22 years of age).

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References

1. World Health Organization. Global burden of mental disorders and the need for a comprehensive, coordinated response from health and social sectors at the country level: Report by Secretariat 2011. Available at: https://apps.who.int/gb/ebwha/pdf_files/EB130/B130_9-en.pdf. Accessed December 15th 2022.
2. Teh CK, Ngo CW, Zulkifli RA, et al. (2015) Depression, Anxiety and Stress among Undergraduate Students: A Cross Sectional Study. *Open J Epidemiol*. 2015; 5:260-8. http://dx.doi.org/10.4236/ojepi.2015.54030
3. World Health Organization. World mental health report: transforming mental health for all 2022. Geneva, Switzerland: WHO; 2022. p 272.
4. World Health Organization. Comprehensive mental health action plan 2013–2030. Geneva, Switzerland: WHO; 2021. p 30.
5. United Nations: Department of Economic and Social Affairs. Mental Health and Development. Available at: https://www.un.org/development/desa/disabilities/issues/mental-health-and-development.html. Accessed December 18th 2022.
6. Raaj S, Navanathan S, Tharmaselan M, et al. Mental disorders in Malaysia: an increase in lifetime prevalence. *BJPsych International*. 2021;18(4):97-9. https://doi.org/10.1192/bji.2021.4.
7. Buchanan JL. Prevention of depression in the college student population: A review of the literature. *Arch Psychiatr Nurs*. 2012;26(1):21-42. https://doi.org/10.1016/j. apnu.2011.03.003.
8. Ramón-Arbués E, Gea-Caballero V, Granada-López JM, et al. The Prevalence of Depression, Anxiety and Stress and Their Associated Factors in College Students. *Int. J. Environ. Res. Public Health*. 2020;17:7001. https://doi.org/10.3390/ijerph17197001.
9. Asif S, Mudassar A, Shahzad TZ, et al. Frequency of depression, anxiety and stress among university students. *Pak J Med Sci*. 2020;36(5):971-6. https://doi.org/10.12669/pjms.36.5.1873.
10. Hossain MM, Alam MA, Masum MH. Prevalence of anxiety, depression, and stress among students of Jahangirnagar University in Bangladesh. *Health Sci Rep*. 2022;5:e559. https://doi.org/10.1002/hsr2.559.
11. Kamruzzaman M, Hossain A, Islam MA, et al. Prevalence of depression, anxiety, stress, and their associated factors among university students in Bangladesh. Available at: https://www.researchsquare.com/article/rs-1530510/v1. Accessed December 16th 2022.
12. Yu Y, Yan W, Yu J, et al. Prevalence and Associated Factors of Complains on Depression, Anxiety, and Stress in University Students: An Extensive Population-Based Survey in China. *Front. Psychol*. 2022;13:842378. htpps://www.doi.org/10.3389/fpsyg.2022.842378.
13. Wang C, Wen W, Zhang H, et al. Anxiety, depression, and stress prevalence among college students during the COVID-19 pandemic: A systematic review and meta-analysis. *J Am Coll Health*. 2021;1:1-8. https://www.doi.org/10.1080/07448481.2021.1960849.
14. Malaysian DASS21 Questionnaire. Available at: http://www2.psy.unsw.edu.au/dass/malaysian/DASS%2021_BahasaMalaysia_Musa.doc. Accessed December 18th 2022.
15. DASS21 Questionnaire. Available at: https://maic.qld.gov.au/wp-content/uploads/2016/07/DASS-21.pdf. Accessed December 19th 2022.
16. Musa R, Fadzil MA, Zain Z. Translation, validation and psychometric properties of Bahasa Malaysia version of the Depression Anxiety and Stress Scales (DASS). *ASEAN Journal of Psychiatry*. 2007;8 (2):82-89.
17. Singh M, Goel NK, Sharma MK, et al. Prevalence of Depression, Anxiety and Stress among Students of Punjab University, Chandigarh. *Natl J Community Med*. 2017; 8(11):666-671.
18. N-2. Hamaideh SH, Al-Modallal H, Hamdan-Mansour A, Tanash M. Depression, anxiety and stress among undergraduate students during COVID-19 outbreak and "home-quarantine". *Nurs Open*. 2022;9:1423–1431. https://doi.org/10.1002/nop2.918.
19. N-3. Wong SS, Wong CC, Ng KW, et al. Depression, anxiety, and stress among university students in Selangor, Malaysia during COVID-19 pandemics and their associated factors. *PLoS ONE*. 2023;18(1): e0280680. https://doi.org/10.1371/journal.pone.0280680.
20. N-1. Astutik E, Sebayang SK, Puspikawati SI, et al. Depression, anxiety, and stress among students in newly established remote university campus in Indonesia. *Mal J Med Health Sci*. 2020;16(1): 270-277.
21. 18. Mutinta G. Mental distress among university students in the Eastern Cape Province, South Africa. *BMC Psychol*. 2022;10:204. https://doi.org/10.1186/s40359-022-00903-8.
22. 19. Huda MN, Billah M, Sharmin S, et al. Associations between family social circumstances and psychological distress among the university students of Bangladesh: To what extent do the lifestyle factors mediate?. *BMC Psychol*. 2021;9:80. https://doi.org/10.1186/s40359-021-00587-6.
23. N-4. Cheung K, Tam KY, Tsang H, et al. Depression, anxiety and stress in different subgroups of first-year university students from 4-year cohort data. *J. Affect. Disord. 2020;* 274:305–314. https://doi.org/10.1016/j.jad.2020.05.041.
24. N-5. The Role of Accommodation Environments In Student Mental Health and Wellbeing. Available at: https://campusafrica.co.za/announcements/the-role-of-accommodation-environments-in-student-mental-health-and-wellbeing/ Accessed February 20th 2023.
25. N-6. Worsley JD, Harrison P, Corcoran R. The role of accommodation environments in student mental health and wellbeing. BMC Public Health (2021) 21:573. https://doi.org/10.1186/s12889-021-10602-5.