Original Research Article

A Cross-Sectional Study on the Prevalence of Depression, Anxiety & Stress and Their Correlates (Sociodemographic and Lifestyle) among University of Cyberjaya Undergraduates

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ABSTRACT

Background: Mental health has become a rising concern today. University students face many challenges daily which makes them more vulnerable to depression, anxiety, and stress.
Objectives: The aim of this study was to determine the prevalence of depression, anxiety, and stress and identify their correlates (sociodemographic and lifestyle) among undergraduate students at the University of Cyberjaya.
Materials and Methods: A cross-sectional study was conducted among undergraduates using a self-validated questionnaire. The data were gathered through an online survey and were analysed using JASP. Chi-square test was used to analyse the association, with a p-value of < 0.05 was considered as statistically significant.
Results: Among 160 respondents, the prevalence of depression, anxiety, stress and good lifestyle habits was 63.1%, 64.4%, 50.0% and 13.1% respectively. Chi-square test showed a significant association between ethnicity and depression. Additionally, there was a significant association between year of study and smoking status with stress. Moreover, this test also showed a significant association between anxiety and depression with lifestyle habits.
Conclusion: In conclusion, the analysis showed a significant association between ethnicity and depression, indicating that different ethnic groups may have varying rates of depression among the students. Additionally, the year of study and smoking status were significantly associated with stress. Furthermore, there was a significant association between anxiety and depression with lifestyle habits, implying that certain lifestyle factors may contribute to both anxiety and depression.

Keywords: Depression, Anxiety, Stress, Sociodemographic, Lifestyle.

INTRODUCTION

As per the definition provided by The World Health (WHO) [1] mental health is a state of well-being and the ability of a person to recognize their potential and their ability to cope with daily life challenges effectively and contribute to his or her community. A major issue with mental health seems to be the constantly rising rates of depression making it a universal psychiatric problem due to its more sophisticated nature as well as complex treatment. [2]

Anxiety and stress are two of the most frequent mood disorders among university students. These are the result of an excessive workload, frequent exams, and peer pressure, all of which drive kids to be anxious. High academic success expectations have produced a very stressful environment, if not addressed, which may be hazardous to university students. According to a study at GC Women University Sialkot, the

prevalence of depression, anxiety, and stress among university students was 75%, 88.4%, and 84.4%, respectively.[3]

This research has the purpose of finding out how prevalent can depression anxiety and stress be among undergraduate students at the University of Cyberjaya will also aim to discover and correlate so she demographic and lifestyle variables. Currently, there is no study or data on the prevalence of depression, anxiety, and stress in connection to sociodemographic and lifestyle variables. Consequently, the data will show how frequent depression, anxiety, and stress are among undergraduates at the University of Cyberjaya.

MATERIALS & METHODS

The research employs a cross-sectional study design to investigate undergraduates at the University of Cyberjaya, Malaysia, focusing on students aged 18 years and above with diverse socio-demographic backgrounds who are literate in English and Bahasa Malaysia. Postgraduate students and those who refuse to give their consent are excluded from the study.

Convenient sampling is used, and an online questionnaire is distributed via a link to students in various undergraduate programs at the University of Cyberjaya. The questionnaire is easily accessible and widely available to any eligible student. Participants will be asked to complete a validated questionnaire on lifestyle habits and depression, anxiety, and stress.[4-5] Respondents will be required to answer the questions as well as giving their informed consent prior to answering the questions. Moreover, the survey will be provided in both Malay and English languages (bilingual form).

RESULT

This study had a response rate of 92.5% with a total of 160 respondents.

Table 1: Sociodemographic description of undergraduates in University of Cyberjaya

Sociodemographic characteristics		Frequency, n	Percentage, %
Gender	Male	47	29.4
	Female	113	70.6
Age group	18-20	36	22.5
	21-25	114	71.2
	26 and above	10	6.3
Year of study	1	25	15.6
	2	17	10.6
	3	40	25.0
	4	50	31.3
	5	28	17.5
Ethnicity	Malay	79	49.3
	Chinese	17	10.6
	Indian	38	23.8
	Others	26	16.3
Smoking status	Smoker	13	8.1
	Non-smoker	147	91.9

Table 1 shows most of the respondents are female (70.6%), aged between 21 to 25 years old (71.2%), 4th year student (31.3%), Indian (49.3%), and non-smoker (91.9%).

Table 2: Lifestyle description of undergraduates in University of Cyberjaya

Lifestyle	Frequency, n	Percentage %
Good	21	13.1
Moderate	36	22.5
Bad	103	64.4

Table 2 illustrate that majority (64.4%) of the respondents have bad lifestyle habits.

Table 3: Prevalence of depression among undergraduates in University of Cyberjaya

Depression	Frequency, n	Percentage, %
Yes	101	63.1
No	59	36.9
Total	160	100%

Table 3 convey that majority of the respondents (63.1%) experience depression.

Table 4: Prevalence of anxiety among undergraduates in University of Cyberjaya

Anxiety	Frequency, n	Percentage, %
Yes	103	64,4
No	57	35.6
Total	160	100%

Table 4 shows that majority of the respondents are having anxiety (64.4%).

Table 5: Prevalence of stress among undergraduates in University of Cyberjaya

Stress	Frequency, n	Percentage, %
Yes	80	50.0
No	80	50.0
Total	160	100.0

Table 5 tabulated that there is an equal number of respondents who are having stress (50.0%).

Table 6: Association between sociodemographic factors and depression among UOC students

Sociodemographic factors	Depression			Chi square value (df)	P value
	Yes n (%)	No, n (%)	Total, n (%)		
Gender					
Male	27 (57.4)	20 (42.6)	47 (100.0)	1.385 (4)	0.847
Female	74 (65.5)	39 (34.5)	113 (100.0)		
Age group (year)					
18-20	24 (66.7)	12 (33.3)	36 (100.0)	47.607 (48)	0.489
21-25	71 (62.2)	43 (37.8)	114 (100.0)		
26-30	6 (60.0)	4 (40.0)	10 (100.0)		
Year of study					
1	17 (68.0)	8 (32.0)	25 (100.0)	13.712 (16)	0.620
2	12 (70.6)	5 (29.4)	17 (100.0)		
3	29 (72.5)	11 (27.5)	40 (100.0)		
4	28 (56.0)	22 (44.0)	50 (100.0)		
5	15 (53.6)	13 (46.4)	28 (100.0)		
Ethnicity					
Malay	55 (47.1)	24 (30.4)	79 (100.0)	23.955 (12)	0.021*
Chinese	8 (47.1)	9 (52.9)	17 (100.0)		
Indian	18 (47.4)	20 (52.6)	38 (100.0)		
Others	20 (76.9)	6 (23.1)	26 (100.0)		
Smoking status					
Smoker	9 (69.2)	4 (30.8)	13 (100.0)	4.236 (4)	0.375
Non-smoker	92 (62.6)	55 (37.4)	147 (100.0)		

*p<0.05

Table 6 shows that other ethnicities (76.9%) have higher rates of depression and are significantly associated with having depression (p<0.05).

Table 7: Association between sociodemographic factors and anxiety among UOC students

Sociodemographic factors	Anxiety			Chi square value (df)	P value
	Yes n (%)	No, n (%)	Total, n (%)		
Gender					
Male	25 (53.2)	22 (46.8)	47 (100.0)	8.202 (4)	0.084
Female	78 (69.0)	35 (31.0)	113 (100.0)		
Age group (year)					
18-20	27 (75.0)	9 (25.0)	36 (100.0)	46.345 (48)	0.541
21-25	72 (63.2)	42 (36.8)	114 (100.0)		
26-30	4 (40.0)	6 (60.0)	10 (100.0)		
Year of study					
1	21 (84.0)	4 (16.0)	25 (100.0)	29.474 (16)	0.021*
2	10 (58.8)	7 (41.2)	17 (100.0)		
3	28 (70.0)	12 (30.0)	40 (100.0)		
4	27 (54.0)	23 (46.0)	50 (100.0)		
5	17 (60.7)	11 (39.3)	28 (100.0)		
Ethnicity					
Malay	49 (62.0)	30 (38.0)	79 (100.0)	13.340 (12)	0.345
Chinese	10 (58.8)	7 (41.2)	17 (100.0)		
Indian	23 (60.5)	15 (39.5)	38 (100.0)		
Others	21 (80.8)	5 (19.2)	26 (100.0)		
Smoking status					
Smoker	6 (46.2)	7 (53.8)	13 (100.0)	3.548 (4)	0.741
Non-smoker	97 (66.0)	50 (34.0)	147 (100.0)		

*p<0.05

Table 8: Association between sociodemographic factors and stress among UOC students

Sociodemographic factors	Stress			Chi square value (df)	P value
	Yes n (%)	No, n (%)	Total, n (%)		
Gender					
Male	18(38.3)	29 (61.7)	47 (100.0)	6.027 (4)	0.197
Female	62 (54.9)	51 (45.1)	113 (100.0)		
Age group (year)					
18-20	24 (66.7)	12 (33.3)	36 (100.0)	60.955 (48)	0.099
21-25	52 (45.6)	62 (54.4)	114 (100.0)		
26-30	4 (40.0)	6 (60.0)	10 (100.0)		
Year of study					
1	16 (64.0)	9 (36.0)	25 (100.0)	27.775 (16)	0.034*
2	10 (58.8)	7 (41.2)	17 (100.0)		
3	26 (57.5)	17 (42.5)	40 (100.0)		
4	18 (36.0)	32 (64.0)	50 (100.0)		
5	13 (46.4)	15 (53.6)	28 (100.0)		

Table no. 8 continued…..					
Ethnicity					
Malay	41 (51.9)	38(48.1)	79 (100.0)	7.762 (12)	0.803
Chinese	5 (29.4)	12 (70.6)	17 (100.0)		
Indian	18 (47.4)	20 (52.6)	38 (100.0)		
Others	16 (61.5)	10 (38.5)	26 (100.0)		
Smoking status					
Smoker	8 (61.5)	5 (38.5)	13 (100.0)	10.600 (4)	0.031*
Non-smoker	72 (49.0)	75 (51.0)	147 (100.0)		

*p<0.05

Table 7 shows that year 1 students (84.0%) have a higher rate of anxiety and are statistically significant with having anxiety (p<0.05).

Table 8 tabulated that year 1 students (64.0%) and smokers (61.5%) have higher rates of stress and are significantly associated with having stress (p<0.05).

Table 9: Association between student lifestyle and depression among UOC students

Lifestyle	Depression			Chi square	P value
	Yes, n (%)	No, n (%)	Total, n (%)		
Good	5 (23.8)	16 (76.2)	21 (100.0)	38.077 (8)	<0.001*
Moderate	16 (44.4)	20 (55.6)	36 (100.0)		
Bad	80 (77.7)	23 (22.3)	103 (100.0)		

*p<0.05

Table 9 illustrate that respondents who have bad lifestyle habits, have a higher rate of depression (77.7%).

Table 10: Association between student lifestyle and anxiety among UOC students

Lifestyle	Anxiety			Chi-square	P-value
	Yes, n (%)	No, n (%)	Total, n (%)		
Good	9 (42.9)	12 (57.1)	21 (100.0)	19.792 (8)	0.011*
Moderate	19 (52.8)	17 (47.2)	36 (100.0)		
Bad	75 (72.8)	28 (27.2)	103 (100.0)		

*p<0.05

Table 10 illustrated that most respondents who have anxiety (72.8%), have bad lifestyle habits.

Table 11: Association between student lifestyle and stress among UOC students

Lifestyle	Stress			Chi square	P value
	Yes, n (%)	No, n (%)	Total, n (%)		
Good	5 (23.8)	16 (76.2)	21 (100.0)	10.277 (8)	<0.246
Moderate	16 (44.4)	20 (55.6)	36 (100.0)		
Bad	59 (57.3)	44 (42.7)	103 (100.0)		

*p<0.05

Table 10 tabulated that majority of the respondents who have stress (57.3%), are more likely to have bad lifestyle habits. However, it is not statistically significant.

DISCUSSION

The study aims to determine the prevalence of depression, anxiety, and stress among University of Cyberjaya undergraduate students. This is because it has become a conundrum to today's society where university students have become more impaired with their social, occupational, and interpersonal skills due to decline in mental health. Majority of the respondents are suffering from depression (63.1%) and anxiety (64.4%), almost half of our respondents (50.0%) have stress. Similarly, a study done in Malaysia disclosed that the prevalence of moderate to severe depression, anxiety and stress among university students are 53.9%, 66.2% and 44.6%, respectively.[6] These findings concur with congruent studies done in Egypt and Pakistan.[7,3]

In terms of association with sociodemographic factors, our study reported that other ethnicities (76.9%) have higher rates of depression and it is statistically significant (p<0.05) compared to Malay, Chinese and Indians. These findings are coherent with a study done in Malaysia where others (87.5%) beside Malay, Chinese and Indians were more likely affected by

depression, however, it was not statistically significant.[8] A plausible explanation would be international students adjusting to new environments while facing academic challenges. For example, they must interact with students from different cultures, concomitantly, thriving in their respective degree.[9] As a result, the likelihood of depression among these groups become more prominent. Apart from that, international students' language proficiency caused them to have difficulty in understanding lectures, decrease social interaction among peers and keeping up to date with their assignments.[10] To rectify this issue, universities should implement systems like the "buddy program" where international students are paired up with locals so that their transition to a new chapter becomes smooth. Furthermore, the international office can collaborate with the student affairs units to provide counselling centres, visa employment options, student wellness and health services.

In general, year 1 students (84.0%) have the highest rate of anxiety and are statistically significant with having anxiety (p<0.05). "Culture shock" could be the cause of these results. In addition to leaving home and adjusting to a new setting, freshmen must also deal with the effects of other cultural aspects, such as language, nutrition, lifestyle, and beliefs, which may increase their acculturation pressures and ultimately lead to mental health issues.[11] This problem could be further improved with universities advocating freshmen to be involved in social activities, i.e., clubs, programs, events, etc, in order for them to become more proactive and comfortable in their new surroundings. For instance, participating in university games allow them to excel in their respective talent, as well as, increasing social exposure. Although, a study done in Malaysia among medical students, illustrated that year 2 students (56,5%) are the most anxious and are statistically significant (p=0.001).[12] The difference may be due to second year students taking advanced courses, relative to their first year and undergoing their first professional exams. However, further

research needs to be done to investigate this contradiction.

With regards to sociodemographic association with stress, it was revealed that year 1 students (64.0%) have higher incidence of stress and are significantly associated (p<0.05). A potential reason could be freshmen do not have proper time management skills, as well as coping mechanisms for academic difficulties. Whereas upperclassmen may have discovered their study methods, created study groups, and may have developed their own personalized coping mechanisms e.g., exercise, meditate, playing music, etc.[13-14] This contradicts with a study done in the United States during the COVID-19 pandemic, disclosed that third year students (84.5%) are the most stressful unlike other years of study.[15] Poignantly, universities should implement programs that tackle time management issues, mental health problems henceforth improving student to stress levels and psychological wellbeing.[16]

There is also an association between smokers (61.5%) and stress with a statistical significance of (p<0.005). These findings are parallel with another study done in Malaysia where (47%) of their participants start smoking due to stress.[17] Several studies highlighted that nicotine dependence is more associated with stress compared to smoking frequency, resulting in highly stressed individuals unable to quit easily. [18-19] One possible justification could be that cigarettes are tools to relieve stress, as a result, there is a higher proportion of people becoming smokers. Although, multiple studies affirmed that smokers amplify stress level, depression, suicidal thought and behaviours, low self-esteem, poor self-efficacy etc.[20-21] To amend this dilemma, institutions should enforce smoking cessation programs encouraging students to quit. Not only will it reduce the incidence of stress among students, hence, improve students' health status.

Results ascertained that respondents who have bad lifestyles have a higher rate of depression and are statistically significant

(p>0.001). This is congruent with another study in Malaysia which tabulated that individuals with good lifestyle habits (1.0%) have lower probability of developing depression.[22] A plausible determinant may be due to irregular sleeping patterns. Sleep deprivation can contribute to students' enervation, diminished psychomotor and cognitive performances and inadequate cellular repair. Thence, undergraduates encounter challenges because their ability to concentrate is impaired, making them unable to recall their material, resulting in a decline in overall academic performance.[23] This is supported with studies done in Ethiopia, New Zealand and Egypt.[24-26] Several research uncovered that sufficient sleep enables a stable and healthy mental mind because it protects the brain haemostasis and prepares individuals for the next psychological functioning.[27-28] This problem could be ameliorated with students practicing proper sleep hygiene leading to improved mental solace.

Likewise, majority of our participants who have bad lifestyle habits are highly anxious (72.8%) with a statistical significance of (p>0.011). On the other hand, a study done in China claimed that certain lifestyle habits are statistically significant with anxiety such as fried food consumption (p<0.001).[29] This is in agreement with a study done in Malaysia where lifestyle factors have a negative relationship with anxiety, although it is not statistically significant (p=0.065).[22] Nonetheless, innumerable evidence reveals that egregious behaviours like inadequate sleep quality, substance abuse, social withdrawal, et cetera leads to the detriment of a student's mental health.[30-32] To put into perspective, individuals who are with family members and friends during the Covid 19 lockdown did not experience loneliness.[33] Even though a study done in Bangladesh stated that participants with children, that participants who have children, elderly people and immunocompromised family members have an increased risk of mental health problems.[33] To resolve this predicament, universities, government entities and private sectors must collaborate to provide interventions for communities to adopt a healthy lifestyle, subsequently, improving community overall psychological well-being.

Finally, it could be reiterated that most respondents who are stressed (53.7%) tend to lead a poor lifestyle, however, it is not statistically significant (p=0.246). This is congruent with another study in Brazil which reported that 33.92% of nursing students experienced moderate to high levels of stress has negative association with quality of life.[35] One of the potential elucidations is that these students are undergoing a degree that requires rigorous training, heavy workload, and high academic expectations. As a result, incidence of stress among these groups of students increased. For instance, stress contributes to the development of several organ dysfunction which will ultimately compromise overall student functional status.[36] In addition, "burnout syndrome" is a recurring condition that students face because their wellness is impaired due to mental and physical exhaustion, sense of defeat and lack of motivation.[37] To combat this extremely common condition, experts must create interventions that focus on amending student welfare as well as, becoming knowledge in every aspect of medical learning.[38]

Nevertheless, this study inherently has some limitations that should be acknowledged. Firstly, our research used a cross sectional study design which findings suggest an observational correlation rather than causality between lifestyle and mental health. Besides that, the data tabulated for mental health and lifestyle status were collected through a self-reported questionnaire. This could be a possible source of information bias. Moreover, description of socio-demographic and lifestyle variables was simplified causing extensive analysis to be limited. Other than that, our research is only limited to undergraduate students in University of Cyberjaya and considering the small sample size, therefore, the generalizability of findings is

limited. Considering all the limitations mentioned, our research could be used as references for future studies to ameliorate undergraduates' mental health and lifestyle habits.

CONCLUSION

The purpose of this research is to evaluate the prevalence of depression, anxiety and stress and recognize the association of sociodemographic and lifestyle among undergraduates in University of Cyberjaya. Majority of these respondents who practiced a poor lifestyle tend to suffer from depression and anxiety, whereas stress is normally distributed. Although there was no correlation between stress and lifestyle, there was a substantial correlation between depression and anxiety with lifestyle.

There were a few drawbacks to this study which implicated the results. Future research should tackle the limitations mentioned including factors such as taking into the consideration the relationship between variables, sample size and information bias.

The problems encountered by institutions should be resolved with the implementation of programs that focus on identifying and understanding students ' mental health, as well as, promoting strategies to cope with these conditions. The intervention should also focus on educating healthy lifestyle behaviours which will ultimately reduce incidence of depression, anxiety and stress among undergraduates. As future healthcare professionals, it is our duty to integrate these policies so that patients' welfare becomes more comprehensive. In the end, raising community awareness and offering adequate support are the only ways to mitigate mental health difficulties among undergraduates.

Declaration by Authors

Ethical Approval: It was approved.

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