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The Correlation between Mental Health and Academic Achievement among UTHM Students

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Abstract

Depression, anxiety, and stress are significant indicators of mental health issues, impacting careers, studies, and lives. In today's competitive society, students face significant stress to achieve excellent grades, leading to comorbidity and loss of control over academic achievement and mental health. Malaysian students suffer from excessive stress due to cultural pressure to graduate with high scores, causing poor self-regulation and difficulty adjusting to high-level stress. The study examines the link between mental health and academic achievement among 389 undergraduate students at Universiti of Tun Hussein Onn Malaysia (UTHM). The research, which used validated questionnaires and academic records, found a significant negative correlation between mental health and academic outcomes. Factors such as family dynamics, socioeconomic background, and access to mental health support services also influenced this relationship. The study emphasizes the need for universities to prioritize mental health awareness and implement targeted intervention programs to support student well-being. Recommendations for enhancing mental health services and creating inclusive education policies are also discussed.

1. Introduction

University education is crucial for personal and professional growth, but some students fail to complete their degrees, leading to university non-continuation. This issue affects students and universities, causing some consequences (Leow *et al*., 2024). In recent years, an extensive amount of research has established that continuous intake of chronic stress may lead to anxiety disorders, depression, and other mental health problems. According to a study by O'Connor, (2021), stress has the potential to negatively impact cognitive achievement, emotional control, and overall life satisfaction. Moreover, recent studies, including the one conducted by Mariotti (2015), have indicated that vulnerable people may have an increased risk of developing mental health conditions as a result of stress. This research gathered information about the effects of all kinds of mental health that students encounter on their academic achievement. Stress affects students differently; therefore, organisations and individuals are encouraged to collaborate attentively in order to resolve the situation so that students may confront it with positivity and keep up positive energy. The objective of this research effort is to analyse the possibility of correlation between the level of mental health that affects students and their academic achievement).

Depression, anxiety and stress are important indicators of mental health, which lead to an increase in psychological morbidity and have a negative impact on occupation, study and life (Teh *et al*., 2015). In today's competitive society, students are under great pressure to achieve excellent results, and excessive investment in learning has a negative impact on all aspects of their lives (Liu *et al*., 2024). College experience often causes stress,

leading to comorbidity and loss of control of academic performance and mental health (Monserrat-Hernández *et al*., 2023). Due to mental health, personal factors and huge syllabus, college students often experience great pressure during the semester. High stress level will lead to low adaptability, social and psychological problems, and ultimately affect their final CGPA (Jabeen Khan *et al*., 2013). Due to the cultural pressure of graduating with high scores, Malaysian students are under excessive pressure, which may lead to poor self-adjustment ability and difficulty in adapting to high-level pressure (Ramli, 2018). Previous authors mentioned that academic performance is related to mental health, the pressure brought by competition among classmates, the lack of pocket money for purchasing learning materials, no evidence that academic performance has improved, the relationship between students and lecturers is not good, and personal problems. Mental health problems, such as depression and anxiety, may be caused by long-term exposure to stressors, leading to emotional confusion and adverse effects on academic achievements, overall well-being and physical health (Sabri RADEEF and Ghazi Faisal, unspecified). The purpose of this study is to confirm the correlation between academic achievement and academic mental health of UTHM students by using Google Tables. The independent variables of this study include mental health level (depression, anxiety and stress), while the dependent variable (CPGA) will be collected from demographic data.

Therefore, in order to achieve the research goal, the mental health level (depression, anxiety and stress) of UTHM students was measured. Thus, the academic achievement level of UTHM students is determined, and the correlation between the mental health level of UTHM students and their academic achievement level is verified.

2. Literature Review

2.1 Academic Achievement

Academic achievement is a critical aspect of a student's educational journey, encompassing grades, test scores, and extracurricular activities. It involves critical thinking, problem-solving skills, creativity, and social-emotional skills. High achievement demonstrates commitment, motivation, and effective learning strategies. Educational institutions and educators play a significant role in promoting academic achievement (Son, 2019). Academic achievement is influenced by cognitive, behavioral, and psychological factors, including core competencies, citizenship, and professionalism. It is measured by CGPA and is influenced by factors such as motivation, creativity, and responsibility (Siti & Mustappha, 2022). Academic achievement is defined by the APA Dictionary of Psychology as any recognizable success in academics or disciplined study, assessed by test scores or grades from teachers APA Dictionary of Psychology. (n.d.). Li *et al*. (2023) state that factors such as study skills, self-concept, and self-esteem significantly influence academic achievement. The International Journal of Academic Research in Business and Social Sciences (2014) highlights that academic success is a complex endeavor shaped by individual behavior, environment, and relationships within the academic setting.

2.2 Academic Achievement Among Students UTHM

University of Tun Hussein Onn Malaysia (UTHM) is a public university in Johor, Malaysia, offering education in various fields, including technical and vocational education, engineering technology, and sustainable technology. UTHM is one of 4 chains in university. Universiti Teknikal Malaysia (MTUN) focus on sustainable technology and engineering field (Mastikawani., 2022). The university has received a 5-star rating from QS-rated universities in terms of teaching, employability, innovation, online learning, civil engineering structure and inclusiveness (Uthm, n.d.). Other than that, UTHM has received various rankings and ratings from reputable sources, including a QS Asia Ranking of 291-300, a THE Impact Ranking of 801-1000 and so on (Laporan Tahunan UTHM 2021, n.d. p.49-51；Mastikawani., 2022; Lokoman, n.d.). The marketability rate of UTHM graduates is very proud, i.e. increasing to 95.61% in 2021 compare with 94.6% in 2020, (Laporan Tahunan UTHM 2021, n.d., p.24). Besides, many students even participated in the competition on behalf of the school and obtained considerable achievements and rankings in the competition Laporan Tahunan UTHM 2021, p.54-59). This study uses three levels to measure students' academic achievement, namely, high (3.35-4.00), medium (1.68-3.34) and low (1.00-1.67).

2.3 Mental Health

Mental health is a basic human right that contributes to decision-making ability (World Health Organization: WHO, 2022). A study published in the International Journal of Academic Research in Business and Social Sciences investigated the mental health and motivation of college students and emphasized the importance of understanding the influence of stress on their mental health. Cultural differences, subjective evaluation and professional theory will all affect mental health. Mental illness includes diagnosable mental disorders, which are characterized by changes in thinking, mood or behavior related to stress or dysfunction. These problems may be caused by stress, loneliness, depression, anxiety, relationship problems, death, suicidal thoughts, bereavement, addiction, ADHD, self-mutilation, emotional disorders and learning disabilities. Students are easily stressed in

their academic journey, which has a negative impact on their mental health (Johnston Nicole and Cassidy Toni, 2020). Mental health includes managing depression, anxiety and bipolar disorder, and balancing daily activities and relationships. Life happiness is evaluated based on cognitive factors and emotional factors (Fareh *et al*., 2023). Depression, Anxiety and Stress Scale (DASS-21) is a widely used self-reporting tool to evaluate the emotional state of depression, anxiety and stress. The grading process includes grading each item on a 4-point scale, ranging from 0 (never) to 3 (very frequently). Dass-21 scoring and interpretation classifies symptoms based on specific cut-off points. For depression, a score of more than 28 indicates extreme severity, while a score of 0-9 is considered normal).

2.4 Depression

Depression is a common mental health disorder, affecting millions of people around the world, and seriously affecting the quality of life, function and overall well-being of individuals. Depression seriously affects students' academic performance and is an important obstacle to the success of education. Research shows that in various educational environments, higher levels of depressive symptoms are related to lower academic performance. Hysenbegasi *et al*. (2005) showed that the academic performance of depressed students was significantly affected by depression, and the average grade point of students decreased.

2.5 Anxiety

Anxiety has a substantial and complex effect on academic achievement since it disrupts cognitive functions necessary for learning and performance, which eventually results in lower academic performance for students. Anxiety has been proven to harm individual cognitive functions, such as memory, attention, and concentration, which are crucial to academic success. Research shows that students who experience high anxiety often struggle with disturbing thoughts and excessive worries, which will undermine their ability to concentrate and absorb new information in class. This kind of cognitive interference will lead to a decline in academic performance, because anxious students may find it difficult to retrieve information in exams (Konwar & Ojah, 2023).

2.6 Stress

The influence of academic pressure on students' academic performance is far-reaching and multifaceted. More and more studies show that the improvement of stress level is related to the decline of motivation, academic performance and dropout rate. In addition, the relationship between stress and academic performance is also reflected in longitudinal studies, which show that perceived academic-related stress can predict poor academic performance over time. For example, studies involving medical students have found that a higher level of academic stress is directly related to lower grades (Barbayannis *et al*., 2022; Gobena, 2024).

2.7 Mental Health Among UTHM Students

Research shows that a significant number of UTHM students suffer from anxiety and depression, with social isolation, environmental stressors, and family problems contributing to higher rates of depression during the pandemic. In 2020, 15 students reported mental health issues, while in 2021, 11 students reported the same issues (Helmi *et al*., 2022). Students often resort to unhealthy coping mechanisms, such as substance abuse or avoidance, which can worsen their mental health and academic achievement (Soosiamaal & Thomas, 2021). A study at UTHM found that the number of students with severe and extremely severe symptoms of depression, anxiety, and stress (DASS) increased significantly. The study involved 450 students from different faculties and found that self-evaluation significantly impacts mental health outcomes (Lee & Lai, 2017). To better understand and address these issues, UTHM has implemented a web-based Decision Support System for mental health assessment, offering an organized method for assessing students' mental health levels and enabling more effective data collection and analysis (Nurain *et al*., 2022).

3. Research Methodology

Research is a systematic investigation process, aiming at accurately exploring specific topics. It includes comprehensive collection, strict analysis and profound interpretation of information. Researchers use proven methods to draw meaningful conclusions and make important contributions to the existing knowledge base. This commitment to systematic research has promoted interdisciplinary progress and stimulated cooperation, innovation and social change. By collecting and analyzing data and making decisions, researchers have perfected our understanding of the universe and laid the foundation for innovation and progress (Alam, 2024). This study adopts a quantitative research design. The relationship between variables, such as independent variables and dependent variables, is established through quantitative research. The purpose of this study is to explore the relationship between academic stress and academic achievement of UTHM students. Mathematical data can be collected and analyses through quantitative research. In this study, quantitative methods are used to collect data

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from respondents through online surveys, and basic statistical data related to specific situations, such as percentage, frequency, mean and standard deviation, are determined. The social science statistics software package (SPSS) of IBM is used to analyse the data of respondents.

Research framework for this study is shown in Fig. 1. The independent variables consist of depression, anxiety and stress, while the dependent variable is level of academic achievement. In line with this objective and supported by previous studies, the following hypotheses are proposed: (H1) There is a significant correlation between depression and academic achievement among UTHM students; (H2) There is a significant correlation between anxiety and academic achievement among UTHM students; and (H3) There is a significant correlation between stress and academic achievement among UTHM students.

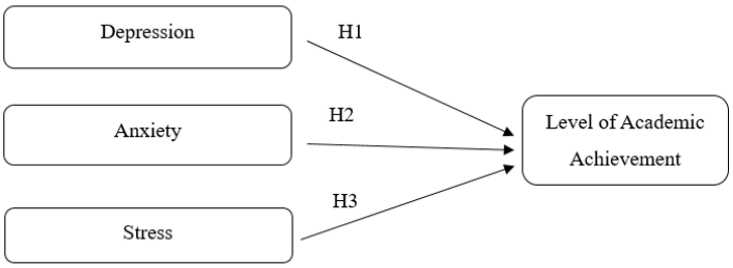

Fig. 1 *Research framework*

3.1 Data Collection Method

The process of obtaining, estimating, and analysing accurate findings for a study using accepted, verified methods is called data collection. A researcher can use the collected data to evaluate their hypothesis. In this study, an online survey with questionnaires is used as a data collection technique. Questionnaires are a popular means of data collection because they can provide a comprehensive overview and are free of charge. Students in UTHM will participate in online questionnaires distributed through Google Forms via social media platforms such as Instagram and WhatsApp.

3.2 Sampling Design Method

Most of the mentioned sample design refers to the process of selecting sampling units for estimation, such as individuals in the population or area investigated as part of the study. Before considering the sample design options, it is very important to fully describe the population, research area, sampling unit and sample target. There are two sampling methods: probability sampling and non-probability sampling. In the non-probabilistic sampling method, the sample area is selected in one of two ways: either according to the regular pattern, emphasizing some points or moments, using personal or narrative data, or randomly selecting. The purpose of probabilistic sampling is to create statistically unbiased samples through sampling design that ultimately depends on random selection (Australian Bureau of Statistics, 2023).

Simple random sampling is the sampling design used in this study. The sampling strategy that gives every sample an equal chance to be selected is called simple random sampling. The purpose of randomly selecting samples is to obtain an overall unbiased image. UTHM students are the whole population in this study, and the sample group consists of 18,000 students. Since all UTHM students are randomly selected, every student has an equal chance to be selected.

3.3 Research Population and Sample Size

The research population is the entire group of people, objects or events with certain characteristics that are of interest to the researcher. It represents the larger population from which a sample is drawn based on the research objectives and parameters. A sample is carefully selected to represent its characteristics. This allows researchers to collect data more efficiently and cost-effectively than if they were to study the entire population (Thomas, 2023). According to Academic Management Centre, 18,000 students enrolled in UTHM. Krejcie & Morgan's (1970) table as shown in Table 1 was used to determine the sample size for this study, which required 376 respondents who were students in UTHM.

Table 1 *Determining sample size method Krejcie and Morgan (1970)*

N	*S*	*N*	*S*	*N*	*S*
10	10	220	140	1200	291
15	14	230	144	1300	297
20	19	240	148	1400	302
25	24	250	152	1500	306
30	28	260	155	1600	310
35	32	270	159	1700	313
40	36	280	162	1800	317
45	40	290	165	1900	320
50	44	300	169	2000	322
55	48	320	175	2200	327
60	52	340	181	2400	331
65	56	360	186	2600	335
70	59	380	191	2800	338
75	63	400	196	3000	341
80	66	420	201	3500	346
85	70	440	205	4000	351
90	73	460	210	4500	354
95	76	480	214	5000	357
100	80	500	217	6000	361
110	86	550	226	7000	364
120	92	600	234	8000	367
130	97	650	242	9000	368
140	103	700	248	10000	370
150	108	750	254	15000	375
160	113	800	260	20000	377
170	118	850	265	30000	379
180	123	900	269	40000	380
190	127	950	274	50000	381
200	132	1000	278	75000	382
210	136	1100	285	1000000	384

Note.—*N* is population size. *S* is sample size.
Source: Krejcie & Morgan, 1970

3.4 Research Instruments

Quantitative method is adopted in this study. Questionnaires were distributed through Google Forms to collect data. In this study, the questionnaire consists of two parts. Part A is about the demographic data of the interviewee, including gender, age, race, degree level, department, grade CGPA, etc. Part B of the questionnaire is the Depression and Anxiety Scale -21 (DASS-21), which is used to determine the mental health level of the respondents. The DASS-21 was adopted from (Health Focus Clinical Psychological Service, 2018). In this section, a 4-point Likert scale is used, ranging from 0 = less than 3 = almost always.

3.5 Instrument Development

Generally, when developing the research instrument, appropriate research requests that could be adopted or modified for the study were selected from previous literature. Following a review of relevant research and the application of individual judgment, various new survey instruments were created that were found suitable for this study and matched the terms and ideas of the variables. The following instruments were used as shown in Table 2.

Table 2 *Instrument development*

Section	Categories	Number of Items	Items
A	Demographic Respondent	7	Gender
			Age
			Race
			Degree Level (Years)
			Faculty
			Result CGPA
			Are you currently facing academic pressure?
B	Level of Mental Health (depression, anxiety, and stress)	21	I found it hard to wind down
			I was aware of dryness of my mouth
			I couldn't seem to experience any positive feeling at all
			I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness absenced of physical exertion)
			I found it difficult to work up the initiative to do things
			I tended to over-react to situations
			I experienced trembling (eg, in the hands)

	I felt that I was using a lot of nervous energy
	I was worried about situations in which might panic and make a fool of myself
	I felt that I had nothing to look forward to
	I found myself getting agitated
	I found difficult to relax
	I felt down-hearted and blue
	I was intolerant of anything that kept me from getting on with what I was doing
	I felt I was close to panic
	I was unable to become enthusiastic about anything
	I felt I wasn't worth much as a person
	I felt that I was rather touchy
	I was aware if physical exertion (eg, sense of heart rate increase, heart missing a beat
	I felt scared without any good reason
	I felt that life was meaningless

3.6 Data Analysis Technique

The 22nd edition of Social Science Statistics Software Package (SPSS) is used to analyze the data of respondents. SPSS computer software can be used to manage and analyze a large number of data, and produce accurate results in the form of tables and charts. Descriptive analysis is used to describe the demographic data, mental health and academic achievements of UTHM students. Reliability analysis is used to evaluate the reliability scale, normality test is used to test the normality or non-distribution of the collected data, and inference analysis is used to determine the correlation between the mental health (depression, anxiety and stress) of UTHM students and their academic performance.

3.7 Descriptive Analysis

Descriptive statistics are crucial as they enable us to analyze and understand data effectively by providing basic measures. Without them, it can be hard to figure out the valuable information from raw data, particularly when analyzing large datasets. Additionally, it can be beneficial in presenting basic data regarding the variables used to analyze the study dataset and illustrating potential relationships among the variables which help understand the participants' demographic details and the concept's primary trends. Consequently, the researchers used IBM SPSS Statistics to analyze the data collected from the participants in this study.

3.8 Reliability Analysis

Reliability analysis is a process of evaluating the reliability and consistency of measuring instruments by determining whether they can continuously produce relevant results when frequently used. The purpose of researchers is to find the high reliability of this test, because it ensures that the results can be trusted (Gajendrakar, 2024). Cronbach's alpha is a standard measure of internal consistency, which is called "reliability". Cronbach's alpha coefficient measures the internal consistency of the investigation project and shows its reliability. A high value means that the answers to all questions are consistent, while a low value means that the measurement is unreliable. Data usually come from surveys, assessment tools and test scores (Frost, 2022). In order to express Cronbach's alpha value in more detail, Cronbach's alpha reliability cutoff point was proposed by (Fong *et al*., 2018) deviation.

3.9 Correlation Analysis

Correlation analysis evaluates the relationship between two or more numerical variables to identify if they tend to correlate. The statistical method assesses the presence of a statistically significant correlation between variables based on an interval or ratio scale of measurement. A correlation coefficient is a numerical value ranging from -1 to 1 that represents the strength and direction of the relationship between two variables. A value near 1 signifies an effective positive correlation, whereas a value near -1 shows a strong negative correlation. A value of 0 reflects no evidence of a significant relationship (Jansen, 2024).

4. Data Analysis and Findings

4.1 Survey Return Rate

There were 15,344 students in UTHM, and the sample size for this study was 384. The questionnaires were sent to 400 students via WhatsApp, and 389 valid questionnaires were returned. There was a 97.25% response rate to the questionnaire survey. The survey response rate is summarised in Table 3 as follows:

Table 3 *Survey return rate*

Population	Sample Size	Questionnaire Distribute	Questionnaire Returned	Percentage
15,344	384	400	389	97.25%

4.2 Reliability and Validity Analysis

In order to test the internal consistency or reliability of the questionnaire item set, Cronbach's α coefficient is used. Both the pilot research and the main research were tested. If Cronbach's α coefficient is greater than 0.7, the questionnaire design is good. Therefore, if the research return is greater than 0.7, it can be carried out. Table 4 shows the values of the reliability factor.

Table 4 *Reliability coefficient value*

Cronbach's Alpha (α)	Internal Consistency
$\alpha \geq 0.9$	Excellent
$0.9 \geq \alpha \geq 0.8$	Good
$0.8 \geq \alpha \geq 0.7$	Acceptable
$0.7 \geq \alpha \geq 0.6$	Be Disputed
$0.6 \geq \alpha \geq 0.5$	Bad
$0.5 \geq \alpha$	Unacceptable

4.3 Reliability Analysis

Table 5 shows the results of reliability for the pilot study, followed by Table 6, showing the results of the reliability test for the actual data.

Table 5 *Result of the reliability and validity test for the pilot study*

Type of Test	N respondents	Cronbach's Alpha	N of Items
Actual Test	30	0.964	21

Table 6 *Result of the reliability and validity test for the actual study*

Type of Test	N respondents	Cronbach's Alpha	N of Items
Actual Test	389	0.930	21

4.4 Descriptive Analysis

Table 7 shows the demographic analysis of respondents involved in this study. Then, Table 8 shows the mean and standard deviation values for all the mental health variables (depression, anxiety, and stress). There was a total of 21 items measuring the independent variables such as depression, anxiety, and stress.

Table 7 *Demographic of respondents*

Demography	Frequency	Percentage
Gender		
Male	220	56.6
Female	169	43.4
Age		
19 years old and below	29	7.5
20-25 years old	338	86.9

26 years old and above	22	5.7
Race		
Malay	139	35.7
Indian	74	19.0
Chinese	163	41.9
Other	13	3.4
Degree Level (Years)		
1 years	43	11.1
2 years	65	16.7
3 years	168	43.2
4 years	113	29.0
Faculty		
Faculty of Civil Engineering and Built Environment (FKAAB)	50	12.9
Faculty of Electric and Electronic Engineering (FKEE)	41	10.5
Faculty of Mechanical and Manufacturing Engineering (FKMP)	78	20.1
Faculty of Technical and Vocational Education (FPTV)	35	9.0
Faculty of Technology Management and Business (FPTP)	75	19.3
Faculty of Applied Science and Technology (FAST)	39	10.0
Faculty of Science Computer and Information Technology (FSKTM)	53	13.6
Faculty of Engineering Technology (FTK)	18	4.6
Result CGPA		
1.00-1.67	157	40.4
1.68-3.34	193	49.6
3.35-4.00	39	10.0
Are you currently facing academic pressure?		
Yes	343	88.2
No	46	11.8

Table 8 *Mean and standard deviation values for all items (depression, anxiety, and stress)*

Variable	Item No		M	SD
Depression	D1	I couldn't seem to experience any positive feeling at all.	1.92	0.538
	D2	I found it difficult to work up the initiative to do things.	1.99	0.525
	D3	I felt that I had nothing to look forward to.	1.90	0.603
	D4	I felt down-hearted and blue.	1.99	0.527
	D5	I was unable to become enthusiastic about anything.	1.91	0.534
	D6	I felt I wasn't worth much as a person.	1.77	0.570
	D7	I felt that life was meaningless.	1.73	0.589
Anxiety	A1	I was aware of dryness of my mouth.	1.94	0.576
	A2	I experienced breathing difficulty (eg, excessively rapid breathing, breathlessness in the absence of physical exertion).	1.84	0.573
	A3	I experienced trembling (eg, in the hands).	1.92	0.557
	A4	I was worried about situations in which I might panic and make a fool of myself.	1.93	0.530
	A5	I felt I was close to panic.	1.91	0.529
	A6	I was aware of the action of my heart in the absence of physical exertion (eg, sense of heart rate increase, heart missing a beat.	1.85	0.524
	A7	I felt scared without any good reason.	1.79	0.544

Stress	S1	I found it hard to wind down.	1.93	0.437
	S2	I tended to over-react to situations.	1.98	0.551
	S3	I felt that I was using a lot of nervous energy.	1.95	0.530
	S4	I found myself getting agitate.	1.96	0.561
	S5	I found it difficult to relax.	2.00	0.530
	S6	I was intolerant of anything that kept me from getting on with what I was doing.	1.83	0.499
	S7	I felt that I was rather touchy.	1.97	0.562

4.5 Correlation Analysis

In this section, this study addressed the third research question, which was, "What was the correlation between the level of mental health and the level of academic achievement among UTHM students?" To verify this relationship, a correlation analysis was conducted. This analysis determined the strength and direction of the correlation between the level of mental health and the level of academic achievement among UTHM students.

Table 9 presents the Spearman correlation analysis, revealing significant relationships between depression, anxiety, stress, and academic achievement. Depression strongly correlates with anxiety ($r = 0.743$) and stress ($r = 0.765$), suggesting that higher depression levels are associated with increased anxiety and stress. Similarly, anxiety and stress share a strong positive correlation ($r = 0.723$, $p < 0.01$), highlighting their close interconnection. In contrast, all three psychological factors—depression ($r = -0.154$, $p = 0.002$), anxiety ($r = -0.206$, $p < 0.01$), and stress ($r = -0.203$, $p < 0.01$)—exhibit weak but statistically significant negative correlations with academic achievement, indicating that higher levels of these factors are linked to slightly lower academic performance. These findings emphasize the importance of addressing mental health challenges to enhance students' academic success and overall well-being.

Table 9 *Result of Spearmen's correlation*

Spearman's rho		Depression	Anxiety	Stress	Academic Achievement
Depression	Correlation Coefficient	1	0.743	0.765	-0.154
	Sig. (2-tailed)	.	0	0	0.002
	N	389	389	389	389
Anxiety	Correlation Coefficient	0.743	1	0.723	-0.206
	Sig. (2-tailed)	0	.	0	0
	N	389	389	389	389
Stress	Correlation Coefficient	0.765	0.723	1	-0.203
	Sig. (2-tailed)	0	0	.	0
	N	389	389	389	389
Academic Achievement	Correlation Coefficient	-0.154	-0.206	-0.203	1
	Sig. (2-tailed)	0.002	0	0	.
	N	389	389	389	389

5. Conclusion

This study shows that individuals often struggle with psychological challenges and rarely report extreme despair or pain. This is due to the stigma surrounding mental health, which often leads individuals to underestimate their emotional state. Many people with mental health problems avoid revealing their true emotional state for fear of being judged or discriminated against. They may try to manage stress by relaxing skills, but fear of shame and social pressure prevents them from reporting more serious despair (Joyce Mason *et al*., 2023). In addition, many people may not realize the seriousness of their emotional state or mental health problems, which leads to underreporting and focuses on coping strategies that seem acceptable to society (psychology. org-humiliation, prejudice and discrimination against mental patients, unspecified).

Research samples show that mental health variables such as anxiety, depression and stress significantly affect academic performance. Students often struggle with motivation, which leads to task delay and academic performance decline. In addition, feelings of helplessness and meaninglessness are common, indicating a decline in self-esteem. This negative cycle may aggravate mental health problems and weaken academic performance. A study by Rosli *et al*. (2012) found that low self-esteem leads to poor performance, which highlights the importance of enhancing self-esteem in improving academic performance and mental health.

This study found that there is an inverse relationship between students' mental health and their academic performance, which is caused by factors such as depression, anxiety and stress. Students with serious mental health problems, such as anxiety and depression, find it difficult to concentrate and maintain their attention, which affects their academic performance (a study on the statistical relationship between students' mental health and academic performance, not specified). Good mental health can enhance adaptability and flexibility, while bad mental health characterized by high anxiety and stress will hinder academic achievement. Therefore, interventions aimed at improving students' mental health are essential for better educational results (Goh & Zhang, 2020).

The findings of this study were helpful in improving students' grades as a whole and emphasized the importance of mental health and its correlation with academic performance. The results showed that mental health significantly affected students' grades. These mental health factors were interrelated and influenced one another. Therefore, it was necessary for the public to consider students' mental health when aiming to improve their academic performance. The empirical model provided valuable insights for educational institutions, parents and guardians, peer networks, and student organizations.

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Conflict of Interest

Authors declare that there is no conflict of interests regarding the publication of the paper.

Author Contribution

The authors confirm contribution to the paper as follows: ***study conception and design:*** *Esther Haw Li Ting, Anim Zalina Azizan;* ***data collection:*** *Esther Haw Li Ting;* ***analysis and interpretation of results:*** *Esther Haw Li Ting;* ***draft manuscript preparation:*** *Esther Haw Li Ting, Anim Zalina Azizan. All authors reviewed the results and approved the final version of the manuscript.*

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