

## Relationship between Loneliness and Mental Health among Local University Students

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### Abstract

Loneliness is increasingly recognised as an important determinant of mental health and is therefore of particular concern among university students. The current study examined the relationships between gender, loneliness and their interaction with mental health. The study sample consisted of 260 students aged 18 and 27 from the local university in Bangi who completed a web-based survey. Correlation and t-test were used to examine the associations and differences between loneliness and mental health as a function of gender. The findings indicate that there is a significant relationship between loneliness and the components of mental health: loneliness and depression ( $r = 0.50, p < 0.01$ ), loneliness and anxiety ( $r = 0.41, p < 0.01$ ) and loneliness and stress ( $r = 0.47, p < 0.01$ ). In contrast, the findings indicated that there is no significant difference between the components of mental health and stress, depression and anxiety based on gender. There is no significant difference in loneliness scores between male respondents ( $M=44.43, SD=8.79$ ) and female respondents ( $M=44.85, S.D = 8.10; t(260) = -.39, p=0.69$ , two-tailed). There is no significant difference in depression scores between male respondents ( $M=15.24, SD=11.57$ ) and female respondents ( $M=14.96, SD=10.86$ );  $t(260) = .196, p=0.85$ . No significant different in anxiety scores between male respondents ( $M=14.72, SP=10.72$ ) and female respondents ( $M=15.20, SP=9.76$ );  $t(260) = -.364, p=0.711$ . The results suggest an important finding that provides insights about the loneliness and mental health among a local university student that will help to prevent mental health deterioration. Further implications and directions for future research is also discussed.

**Keywords:** University Students, Gender, Loneliness, Mental Health, Depression, Stress, Anxiety

### Introduction

Loneliness is often associated with poor mental health (Wickens et al., 2021). The risk of loneliness is increasingly recognised as an important factor that can lead to serious mental health issues. It occurs when someone feels lonely or has a problem with social isolation.

Loneliness can be one of the triggering factors that can lead to symptoms of mental health such as feelings of stress, anxiety and even depression. Loneliness can be defined as an unpleasant individual experience that causes a reduction in social relationships. According to Bonetti et al (2010), loneliness usually occurs in adolescence, but the actual state of loneliness is still uncertain. Loneliness is also often associated with other feelings such as depression, social anxiety and even antisocial behaviour (Ming, 2013). It is also linked to other situations that lead to stress, which is also interpreted as a phenomenon that is often seen as a dangerous threat to a person's condition and mental health (Awang, 2016). Loneliness can be happened to anyone, regardless of age, gender or race. Student life is then very passive and can lead to suicidal thoughts (Norhayati, 2013). Among university students, loneliness can occur when they have to move to a different place with a new environment for their studies. They are often under constant pressure as their lives changes during their time at university (Ganesan et al., 2018).

Students can be relatively lonely even when they are in a large crowd and have high social connections (Richardson et. al., 2017). College students who experience loneliness are unable to be happy when they are in an extreme state of sadness (Nur Syahirah & Noremy, 2020). A state of loneliness indirectly leads to negative feelings due to many factors including lack of satisfaction in social relationships, failure to meet social expectations and lack of emotional competencies (Stoliker & Lafreniere, 2015). Mustafa (2020) mention that signs of anxiety in students can be fatigue, sleep disturbances, excessive anxiety and also other physical symptoms such as high heart rate, muscle tension and extreme headaches. Lin and Huang (2012) mention that stress and loneliness are two common problems among university students. The stress issue is increasing among university students, which has a great impact on their lives (Wenjuan et. al., 2020). The pressure they face has been very worrying lately (Wafi & Sharifah, 2020). However, Ribeiro (2018) explains that university students are in a situation where stress-related disorders have become normal and habitual.

Loneliness is experienced by all people living on this earth. The literature reveals how it is experienced by men and women. Among university students, they have potentially lonely and stressed as they grapple with many changes including new teaching and learning styles, and the absence of a support system that was a pillar of their spirit during their school days (Prowse, 2021). Loneliness might be different between males and females. Several theoretical claims about gender differences in loneliness, often including the occurrence of gender differences at certain developmental stages and transitions (Maes et. al., 2019). However, it is unclear to what extent factors of loneliness affect mental health as a function of gender (Liu et. al., 2020). Previous literature also indicates that the relationship between loneliness and gender is uncertain (Klein et. al., 2021).

Risk of loneliness can lead to deterioration of mental health in which among the college student, research shows that loneliness has been found to affect students' daily lives to the extent that it affects concentration in class, they become forgetful and feel constantly restless (Maisarah et. al., 2022). The previous research discussed about the interaction between age, gender and the outbreak of the pandemic (Wickens et. al., 2021; Horesh et. al., 2020). For example, during the pandemic outbreak, movement was disrupted, self-isolation and shelter-in-place arrangements were ordered for all, which can be very stressful for many people. Nevertheless, post-pandemic, research on loneliness and mental health has been less studied

to provide empirical evidence to prove the association of both variables. Previous literature also shows that loneliness and poor mental health are sparse (Christiansen et. al. 2021). Therefore, the aim of this study is to examine the relationship between loneliness and mental health among university students. This study has two objectives: i) to determine the level of loneliness and the level of mental health (depression, anxiety and stress) among local university students in Selangor; ii) the second objective is to identify differences in the level of loneliness, depression, anxiety and stress according to gender.

## **Material and Methods**

### **Participants**

This study involved 260 respondents from the local university student in Bangi, Selangor who were selected from social sciences courses aged 18 years and above. The respondents were selected using a simple random sampling method.

### **Measures**

This study used two instruments to measure the variable. First, loneliness was measured with the UCLA Loneliness Scale developed by Daniel et al. in 1978. Second, participants' mental health was measured using the Depression Anxiety Stress Scale (DASS) by Lovibond and Lovibond (1995). All the instruments were validated and translated into Bahasa Melayu for local use.

#### *Loneliness Scale Questionnaire (UCLA)*

The Loneliness Scale (UCLA) is an instrument used to measure an individual's level of loneliness. This test instrument was introduced in 1978 by Russell, Letitia Peplau, and Mary Ferguson and is been widely used in psychological research. The UCLA Loneliness Scale consists of 20 questions that describe feelings of loneliness and social isolation on a 4-point Likert scale: 1) Strongly Disagree, 2) Slightly Agree, 3) Slightly Disagree, and 4) Strongly Disagree. Total scores on the Loneliness Scale (UCLA) range from 20 to 80, with higher scores indicating higher levels of loneliness. The scale score is divided into four general categories which are low, medium, high and very high. A scores between 20-34 indicates a low level of loneliness. A score of 35-49 means individuals experience a moderate level of loneliness. A score of 50-64 indicates a high level of loneliness. A further score of 65-80 indicates a very high level of loneliness.

#### *Depression Anxiety Stress Scale (DASS)*

The DASS-42 scale, also known as the Stress Anxiety Depression Scale, is a set of questionnaires widely used to assess levels of depression, anxiety, and stress in individuals. It was developed by researchers Lovibond and Lovibond in 1995 and has been used in a variety of clinical and research programming. The scale consists of 42 questions, with 14 questions for each domain of depression, anxiety, and stress. Each question is scored on a 4-point Likert scale that includes: 0 (Never), 1 (Rarely), 2 (A lot), and 3 (Very much). Respondents are asked to describe the extent to which the statement applies to their situation in the last two weeks. To determine the total score in each domain, the mean score is used, which is the highest mean recording a value of 42. The following are general scoring categories for interpreting of depression, anxiety, and stress scores using the DASS-42 scale.

Table 1

*DASS-42 General Score*

	<b>Depression</b>	<b>Anxiety</b>	<b>Stress</b>
Normal	0-9	0-7	0-14
Lightweight	10-13	8-9	15-18
Simple	14-20	10-14	19-25
Heavy	21-27	15-19	26-33
Very heavy	28 above	20 above	34 above

*Other Measures*

Demography Questions related to participant's information were also included in the questionnaire. The questions specifically asked on race, age, year and faculty of study at local university students in Bangi, Selangor.

**Statistical Analysis**

The association between loneliness and mental health was tested using Pearson's correlation. Independent sample t tests were conducted to examine differences for all variables at baseline between females and males.

**Results**

Result of the study compromised descriptive and inferential statistic using correlation and independent t-test will be reported further in the next section.

**Descriptive Analysis***Socio-Demographic informations*

This study involved 260 (105 male, 155 female) students from National University of Malaysia. Table 2 indicate race proportion in which a total of 238 (91.5 percent) are Malays, followed by Chinese 5 (1.9 percent), Indians 5 (1.9 percent) and others 12 (4.6 percent). The age of the respondents is between 21 to 23 years (198 (76.2 percent), 24 to 26 years (30 (11.5 percent), 18 to 20 years (28 (10.8 percent) and above 27 years<sup>1</sup> (1.5 percent).

Table 2

*Descriptive demographic information of respondents (n=260)*

<b>Subject Information</b>	<b>Category</b>	<b>Frequencies</b>	<b>Percentage(%)</b>
Gender	Men	105	40.4
	Women	155	59.6
Race	Malay	238	91.5
	Chinese	5	1.9
	Indian	5	1.9
	Others	12	4.6
Age	18-20 years	28	10.8
	21-23 years	198	76.2
	24-26 years	30	11.5
	27 years	4	1.5

*Mean and standard deviation information*

Table 5 shows a descriptive analysis of the respondents' level of loneliness based on mean and standard deviation. In scoring loneliness, the lowest score is 0 and the highest or maximum score is 96. The analysis shows that the lowest score for this study is 2 and the highest score is 65 where the mean score of loneliness is 44.68 with a standard deviation of 8.37. The mean score of the respondent shows that the respondent's level of loneliness is at a moderate level. While, for other three dimensions, the minimum score is 0 and the maximum score is 42. The mean value for the level of depression given in Table 3 indicates a mean value of 15.07, for the level of anxiety a mean value of 15.00 and for the level of stress a mean value of 17.58.

Table 3

*Mean and standard deviation of loneliness and mental health domains*

<b>Construct</b>	<b>Mean</b>	<b>S.D</b>
Loneliness	44.68	8.37
Depression	15.07	11.13
Anxiety	15.00	10.14
Stress	17.58	9.83

*Inferential Statistics*

The present study use the correlation to test the relationship and t-test to compare the means of two gender groups of students. There are 7 hypothesis we tested and each of the hypothesis result was explained in detail below.

Hypotesis 1: There is no relationship between loneliness and depression among a local university student in Bangi, Selangor.

Table 4 shows the correlation analysis carried out using the Pearson correlation analysis method. The results of the correlation analysis show that there is a relationship between loneliness and depression among local university students which correlation value  $r = 0.50$ ,  $p < 0.01$ . Moderate degree of correlation is between  $\pm 0.30$  and  $- \pm 0.49$  which is said to be a medium correlation. The results of the study show that the hypothesis that there is no significant relationship between loneliness and depression is rejected. This shows that the higher the level of loneliness, the higher the level of depression.

Table 4

*Pearson correlation of loneliness with depression*

		Loneliness
Depression	Pearson Correlation	.50**
	Sig. (2-tailed)	.000

\*\* . Correlation is significant at the level 0.01 (2-tailed)

Hypothesis 2: There is no relationship between loneliness and anxiety among local university students.

Table 5 shows the correlation analysis carried out using the Pearson correlation analysis method. The results of the correlation analysis indicate that there is a positive moderate

relationship between loneliness and anxiety ( $r = 0.41$ ,  $p < 0.01$ ). The results of the study are significant, this mean the null hypothesis that there is no significant relationship between loneliness and anxiety is rejected. The correlation shows that the higher the level of loneliness, the higher the level of anxiety.

Table 5  
*Pearson correlation of loneliness with anxiety*

		Loneliness
Anxiety	Pearson correlation	.41**
	Sig. (2-tailed)	.00

\*\* . Correlation is significant at the level 0.01 (2-tailed)

*Hypothesis 3: There is no relationship between loneliness and stress among students' local university students.*

Table 6 shows the correlation analysis that has been carried out using the Pearson correlation analysis method. The results of the correlation analysis found that there is a significant relationship at the moderate level between loneliness and stress ( $r = 0.47$ ,  $p < 0.01$ ). The results of the study show that the hypothesis that there is a significant relationship between loneliness and stress is accepted. This shows that the higher the level of loneliness, the higher the level of stress.

Table 5  
*Pearson correlation of loneliness with stress*

		Loneliness
Stress	Pearson correlation	.47**
	Sig. (2-tailed)	.00

\*\* . Correlation significant at the 0.01 level (2-tailed)

*Hypothesis 4: There is a significant difference mean of loneliness based on gender Based on*

Table 6, an independent sample t-test analysis was conducted to compare the loneliness score for males and females. The results show that there is no significant difference in loneliness scores between male respondents ( $M=44.43$ ,  $SD=8.79$ ) and female respondents ( $M=44.85$ ,  $S.D = 8.10$ ;  $t(260) = -.39$ ,  $p=0.69$ , two-tailed. This result shows that the alternative hypothesis ( $H_{a1}$ ) is rejected because there is no significant difference loneliness based on males and females.

Table 6  
*T-test of differences in loneliness based on gender*

Gender	N	Mean	S.D	t	Sig
Men	105	44.43	8.79	-0.393	0.695
Women	155	44.85	8.10		

*Hypothesis 5: There is a significant difference mean of depression between male and female*  
Based on table 7, an independent sample t-test analysis was performed to compare depression score between male and female respondents. The results show that there is no significant difference in depression scores between male respondents ( $M=15.24$ ,  $SD=11.57$ )

and female respondents ( $M=14.96$ ,  $SD=10.86$ );  $t(260) = .196$ ,  $p=0.85$ . This shows that the alternative hypothesis is rejected because there is no significant difference for depression between male and female respondents.

Table 7

*T-test of depression differences based on gender*

Gender	N	Mean	S.D	t	Sig
Male	105	15.24	11.57	0.196	0.845
Female	155	14.96	10.86		

*Hypothesis 6: There is a significant difference in anxiety based on gender*

Based on table 8, an independent sample t test analysis was performed to compare the anxiety score between male and female respondents. The results show that there is no significant difference in anxiety scores between male respondents ( $M=14.72$ ,  $SP=10.72$ ) and female respondents ( $M=15.20$ ,  $SP=9.76$ );  $t(260) = -.364$ ,  $p=0.711$ . This shows that the alternative hypothesis ( $H_{a6}$ ) is rejected because there is no significant difference for anxiety between male and female respondents because the significance level is greater than 0.05 ( $p>0.05$ ).

Table 8

*T-test of anxiety differences based on gender*

Gender	N	Mean	s.d	t	Sig.
Men	105	14.72	10.72	-0.364	0.711
Women	155	15.20	9.76		

*Hypothesis 7 There is a significant difference of stress based on gender*

Based on table 9, an independent sample t test analysis was performed to compare the anxiety score values among male and female respondents. The results show that there is no significant difference in loneliness scores between male respondents ( $M=17.04$ ,  $SP=10.34$ ) and female respondents ( $M=17.94$ ,  $SP=9.48$ );  $t(260) = -.727$ ,  $p=0.47$ . This shows that the alternative hypothesis ( $H_{a7}$ ) is rejected because there is no significant difference for stress between male respondents and female respondents because the significance level is greater than 0.05 ( $p>0.05$ ).

Table 9

*Test of stress based on gender*

Gender	N	Mean	s.d	t	Sig.
Men	105	17.04	10.34	-0.727	0.468
Women	155	17.94	9.48		

**Discussion**

The present study investigates whether loneliness is associated with poor mental health among students, and whether gender plays a role in the association of loneliness and mental health components (stress, anxiety and depression) among a local university student. It also aimed to compare the mean of loneliness and mental health among students by gender. The

results of the study show that there is no significant difference in the level of loneliness, depression, anxiety and stress between male and female respondents. This means that male and female students have approximately the same level of having an issue of loneliness, depression, anxiety and stress. The findings of this study are not in line with the findings of the study by Bottesi et. al (2018); Jones et. al (2018) who found a significant difference between the sexes where female students had higher level of anxiety than male students. The previous study shows that loneliness was positively associated with increased depressive symptoms in male students. Thus, females were more vulnerable to the negative mental health effects of loneliness. However, the previous studies were conducted with samples of older adults and gender differences were not examined.

This study found that there was no significant difference in stress levels between male and female students. The mean scores of female and male students also did not differ, proving that stress levels are about the same between the sexes. The findings from this study did not align with a previous study conducted that aimed to synthesize the available evidence on gender differences in loneliness across the lifespan (Maes et al., 2019). The results show small but significant mean effect sizes for children, adolescents, and young adults, suggesting that males were somewhat lonelier than females in groups. The findings shows that there is a significant relationship between loneliness and depression among local university students which is consistent with the study conducted by (Naama et al., 2019). A study conducted by Xue (2017) found that people with depression are more likely to feel lonely because they are actively avoid seeing other people. In addition, individuals who are experiencing depression also tend to have less confidence and have low self-esteem, which can also cause feelings of loneliness to come (Guo et al., 2016). This study found that there is a relationship between loneliness and stress among local university students.

There are not many studies that directly examine the relationship between loneliness and stress, but there are some studies that have similar findings. Richardson et. al (2017) found that there is a significant relationship that exists between the level of loneliness and stress among university students. This relationship was seen after all aspects of demographics and baseline mental health were controlled, which suggests that loneliness is likely to exacerbate existing stress problems and may lead to a direct deterioration in mental health. The previous research aligns with this study which shows that loneliness associate with the depression. Nevertheless, loneliness may be said to be a significant variable affecting depression. Research by Fauziyyah and Ampuni (2018) mention that depression is strongly influenced by loneliness but mediated by social skills which this study is not include the social skills variable.

The implication of this study provides a clearer picture of the information on the loneliness and mental health state among local university students. In addition, the results of the study obtained are expected to provide important information and data especially to the Higher Education Institutions (HEI) of the country. Besides, the data provide so can also help other parties such as helping profession to find an initiative to ensure that all students can are able to cope with all the stressors that can give the effect on student's mental health all the time. In addition, the findings of this study also give a clear picture of the relationship between loneliness that leads to mental health problems. This information can make students aware of the importance of taking action when feeling lonely to prevent (further) deterioration of mental health. It is important to stay active and maintain social relationship to ensure students



can connect and be accepted to serve people around them.

### **Conclusions**

The study which examines the relationship and mean difference between loneliness and mental health based on gender among local university students shows mixed results. The correlation shows that the relationship between loneliness and mental health is significant at a moderate level. Thus, the mean difference shows no significant difference between loneliness and components of mental health (stress, anxiety and depression) based on the gender of local university students. This result provides preliminary information on loneliness and mental health status of local university students that can be used to prevent mental health problems. The result also has the implications, limitations and suggestions for future research in where this information is very useful to protect students from loneliness and mental health problems during their study period. Surprisingly, there is no significant difference in mental health level between males and females in which both genders have about the same potential of having same loneliness and mental health problems if not dealt with effectively.

Several potential limitations of the current study should be considered and attuned in the future research. This study focuses on only one university in Malaysia which future research suggested to conduct involves more universities. If possible, future research should assess potential differences in loneliness between age differences in a large sample of university students taking a variety of courses. This study used a web survey method which may be biased due to limited knowledge of the actual respondent who completed the survey. Somehow web-based survey also has its pitfalls whereby the internet will sometimes down in certain area and affected the time allocated to fill up the response.

For future research, it is suggested that the survey be conducted face to face to have a convincing result that can be generalized to the target population. This is due to the response where the researcher feels like too many items to measure each variable can be time consuming. This is likely to lead to respondents feeling drained and exhausted when answering the questionnaire. Future studies should focus on the additional variables and the respondents should be more variety in term of races and demographic information. The study design may have contributed to the results and should be explored in future research. The method of data collection needs to be expanded to include mixed-method or qualitative method to obtain rich data to support the quantitative findings.

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