

Association between Perceived Stress and Resilience among University Students

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Abstract

Background: Stress is not unfamiliar in our daily livings especially in student population. Undergraduate students tend to expose to stressors from various sources such as academic performances, family issues, financial problems and etc. Stress can be positive, keeping us alert and ready to avoid danger. In this context, resilience plays a vital role to allow students to overcome, adapt and cope well with the stresses. The aim of the study was to assess the level of perceived stress and resilience among university students and to determine the association and relationship between perceived stress and resilience.

Methods: Perceived Stress Scale and Resilience Scale were distributed to the undergraduate students in a private university. An online questionnaire was also shared through social media for students to answer.

Results: Overall, the mean age among the 355 participants were 20.83. Gender differences were found in stress and resilience level. Female were found to have higher PSS score ($p=0.006$) and lower RS score ($p<0.001$) compared to male. Pearson's Correlation showed that there was a moderate negative association between perceived stress level and resilience among undergraduate students ($p<0.001$). Null hypothesis was rejected.

Conclusions: In conclusion, undergraduate students had moderate perceived stress and low resilience level. There were association between perceived stress level and resilience among undergraduates students. Thus, specific intervention such as stress management and resilience enhancement program can be conducted to improve the scenario.

Key Words: Association, Perceived stress level, Resilience level, undergraduate students.

Introduction

Stress is not unfamiliar in our daily livings. Stress is described as a feeling of being overload wound uptight, tense and worried or an unspecified reaction of the body towards sudden alteration or modifications of the environment. Stress contributes to various respond in the human body^[1]. Stress can be positive, keeping us alert and ready to avoid danger. Stress becomes negative when a person faces continuous challenges without relief or relaxation between challenges. As a result, the person becomes overworked and stress-related tension builds. In the others words, if an individual experiences a short-term stress, the stress can act as a motivator to the individual to face and overcome the difficulties or

challenges. The stresses might affect your physical and mental health^[2].

According to American Psychological Association, stress consists of various forms and it can be classified into 3 main types including acute stress, episodic stress, and chronic stress. Acute stress is the type of stress which may cause fight or flight responses particularly when an individual experienced danger and it usually occurs in just a short period of time^[3]. The episodic stress, is a stress that caused by some combination of stressful events that leads endless overthinking and worrying of the individual for the particular incidents. Chronic stress can develop from bad experiences in the childhood, poor relationship with the loved one and so forth^[4].

American Medical Students Associations (AMSA), it claimed that different study year of students tends to face different types of stresses. First-year students tend to feel stress due to increased workload and demand for their academics. Second-year student would feel anxious, pressure and nervous while studying many diseases at ones for the very first time. They also develop stress due to the upcoming practical and theory examinations. Third-year students tend to feel stress when entering clinical rotations and postings in different hospitals. At this time, they need to deal with real life situations and the death of their patients for the first time. Fourth-year student faces stress especially from the job applications, various interviews, and transition from medical school internship. They need to consider the development of their profession and alter their mindsets of being a student after graduation [5, 6, 7].

Resilience is generally considered as a “positive adaptation” after a stressful or adverse situation. In other words, resilience is the ability and capability to rebound back from a negative experience. Resilience can be built through many ways and acts as a good stress management for students [8]. Resilience can be explained in terms of optimism and pessimism. Personal control means resilient people do not find excuses for themselves when negative incidents happen [9]. In conclusion, students should develop resilience when they facing with stress in order to ensure they are coping well with the current situation. The main aim is to study the level of perceived stress and resilience among students in a private university and also to study the relationship between perceived stress and resilience among students in a private university.

Methodology

The study was a cross-sectional study to examine the relationship between perceived stress and resilience among University undergraduate’s students. The data collection duration consists of 4 weeks. The study was conducted in a private university at Malaysia. The sample size was calculated by using the formula suggested by Cochran in 1977: The estimated sample size in this study is 320 participants. The selected participant must be willing to participate in the study. The expected prevalence was adopted from a recent study focusing

on Malaysian students⁷. The target population were all undergraduate students from a private university and was recruited through Google forms and face to face approach. The sampling method used to collect the responses from participants was convenience sampling, a non-probability sampling method. The Inclusion criteria for this study were: Male and female participants Aged between 18 to 25 years old, Undergraduate’s students, all ethnic groups and the exclusion criteria for the study Individual who do not complete the questionnaire and individual who do not understand English.

The instrument utilized were Section A: demographic data including age, gender, faculty, course and year of study. Section B: Perceived Stress Scale (PSS) questionnaire which is used to measure the perception and level of perceived stress. The PSS consists of 10 items instrument that includes questions about one’s feelings and thoughts in the last one month. The higher score represented a higher level of perceived stress. Section C: Wagnild and Young Resilience questionnaire which contains 25 questions with 7 point rating scale. The higher the score the individual gets, the greater the resilience the individual had.

Procedure

The ethical approval was obtained. All students from all the faculties from a private university were approached using the questionnaire for them to answer. The researcher explained the subject and ensures the subjects have no doubts about the research. The subjects received an informed consent form, a self-administered paper questionnaire that includes Demographic data, Perceived Stress Scale (PSS) and Resilience questionnaire. The questionnaire will take an approximate of 15 minutes to complete. The obtained data will be used for analysis.

Results

A total of 335 participants out of 348 participants have fulfilled the inclusion criteria of the study. The study only included data from the 335 participants for the data analysis. The responses rate was 100%.

Mean differences of Perceived Stress Scale and Year of Study

Year of Study	Mean PSS score (SD)	df	F	p-value
1	19.90(5.871)	4	1.342	0.254
2	19.30(5.431)			
3	20.63 (5.467)			
4	18.95 (5.362)			
5	16.00 (5.657)			

Note: One-way ANOVA test was performed; df = degree of freedom; level of significant at $p < 0.05$; SD = Standard Deviation

The mean differences between PSS score among 335 participants based on year of study. One-way ANOVA was performed to determine and compare the means PSS score of all participants between different years of study including Year 1, Year 2, Year 3, Year 4 and Year 5. In the test, there was mean difference between different years of study in which the mean and standard deviation

was 19.90(5.871) for Year 1, 19.30(5.431) for Year 2, 20.63 (5.467) for Year 3, 18.95 (5.362) for Year 4 and 16.00 (5.657) for Year 5, however, mean difference was not enough to make a significant difference as *p-value* 0.254 which was greater than the preset *p-value*. The results showed there was no statistically significant difference between Year of Study where $F = 0.254$. whole.

Mean differences of Resilience Scale Score and Year of Study

Year of Study	Mean RS score (SD)	df	F	p-value
1	116.36 (16.687)	3	0.666	0.616
2	119.78 (17.474)			
3	117.64 (16.818)			
4	115.86 (12.076)			
5	125.50 (10.607)			

Note: One-way ANOVA test was performed; df = degree of freedom; level of significant at $p < 0.05$; SD = Standard Deviation

The mean differences between RS score among 335 participants based on year of study. One-way ANOVA test was performed to determine and to compare the means RS score of all participants between different ethnicity groups including Year 1, Year 2, Year 3, Year 4 and Year 5. Year 5 had the highest mean and standard deviation of RS score which was 125.50

(10.607), followed by Year 2 119.78 (17.474), Year 3 117.64 (16.818), Year 1 116.36 (16.687) and Year 4 115.86 (12.076). The results showed there were mean differences between groups, the *p-value* of the test is 0.616 which was greater that pre-set *p-value* of $p = 0.05$. The results showed there were no statistically significant differences between Year of study determined by one-

way ANOVA where $F = 0.616$.

Correlation between PSS score and RS score

	Mean (SD)	n	r ²	p-value
PSS score	19.91 (5.533)	335	-0.44*	<0.001
RS score	118.09 (16.730)			

Note: *Pearson coefficient correlation test was performed; SD = Standard Deviation r^2 = correlation coefficient; level of significant at $p < 0.05$; n = number of participants

A Pearson coefficient correlation test was done to examine the strength of relationship between the PSS Score and RS score among participants. The PSS score collected in the study was normally distributed, as the *p-value* of PSS score was 0.120, which was greater than $p = 0.05$ based on the normality test. The total sample size was 335 without any missing value. The test showed a negative correlation as $r^2 = -0.44$, indicated that there was a moderate negative relationship between the PSS score and RS score, in other words, as PSS score increases, the RS score decreases. The *p-value* of the test was lesser than 0.001 which was lesser than $p = 0.05$, showing that the data was statistically significant between PSS score and RS score. Thus, there were moderate negative correlation between PSS score and RS score among all the participants.

Discussion

The study was to determine the level perceived stress and resilience among private university students. In the study, there were a total of 355 undergraduate students recruited was 355. In general, 74.6% of the undergraduate students had the prevalence of stress of 19.91 (± 5.533) out of 40 measured by PSS. The undergraduate students had moderate stress level in overall. The results were consistent with the previous studies^[5]. When comparing the stress level with gender, the results showed that about 60.9% female participants tend to have more perceived stress than the male participants. Female tend to be identified by feminine role and male tend to be identified by masculine role. Thus, female will tend to express their feelings and emotions than male^[10]. The results are still debateable and different opinions were stated in previous studies^[11]. According to the American Psychological Association, claimed that female have

more stress compared to male because female tend to voice up about their feelings and problems compared to male who would rather keep everything to themselves. Another was due to the hormonal differences between male and female claimed according to American Institute of Stress. Thus, the distribution of gender can influence the results of the study and therefore, future research should ensure equal number of genders in the study. In this study, stress level showed to have different results when comparing with ethnicity. The results showed that Malay and Indian ethnicity was prone to have higher PSS score compared to Chinese and Other ethnicity. The present study was not the first study to compare the stress level across ethnicity in Malaysia, yet, there are still limited research had worked on this aspect. The results showed that there were statistically significant differences between ethnic groups as *p-value* was 0.023. The results were in lines with a study showed that Malay ethnicity tends to have greater anxiety and stress compared to other ethnic groups^[12].

The resilience levels mean RS score among the undergraduate students was 118.09(± 16.730) which indicate a low resilience level. This result was not in line with other studies which indicating undergraduate students had moderate stress level and but a high level of resilience scale^[13]. In the present study, Male tends to have a higher resilience level than female. The mean RS score and standard deviation of male to female were 122.24(± 18.474) and 115.42 (± 14.957) respectively. This result showed that gender and resilience were statistically significant ($p < 0.001$). The results can be supported by a study which claimed that gender difference on resilience level is still debateable. In their studies, the results showing that male tend to have higher resilience level and their results in line with the

present studies. They suggested that female had a lower resilience level were they are less likely to expose into the stressful condition and also female used a different coping strategy compared with male^[14, 15].

The present study was to determine the relationship between perceived stress and resilience among private university in Malaysia. There was a significant negative relationship between perceived stress and resilience level among university students by using Pearson Correlation Test ($p < 0.001$). The stress level increases among students, the resilience level tends to decrease. This result was sufficient to reject the null hypothesis which was there is no significant relationship between perceived stress and resilience among private university students in Malaysia. The result of this study was consistent with other studies^[13, 16]. The importance of the present study was to determine the stress level and resilience level of university students and to detect whether the student able to cope and manage the stress effectively and to see the stress level was too overwhelming for the students. From the findings, the resilience level of the students was considered low. Thus, interventions like stress management or resilience enhancement program to be implemented.

Conclusion

The study concludes that, undergraduate students had moderate perceived stress level and a relative lower resilience level. In this study, stress had found to have mean differences between gender and ethnicity whereas resilience showed differences only between genders. There was no difference found between faculty and year of study with perceived stress and resilience of undergraduate students. In term of correlation and association, there was a moderate negative correlation between perceived stress and resilience among undergraduate students. As mentioned, resilience is an important factor to ensure and determine the ability and capability of the students to adapt and make a quick rebound from the stressful situation and adversity.

Recommendations

In future, the study should be conducted with a larger sample size which comprised of an equal number of participants with different characteristics such as gender, faculty, ethnicity and year of study can be

implemented. Significant differences between the stress level among students in urban and rural area^[17].

The study should be carried out from time to time in order to examine whether any changes towards the stress and resilience level of the students to ensure their mental and psychological health. Moreover, future study should include the sources of stress, academic performances and coping strategy to enable detection of new sources of stress and behavior of the students towards the stress.

Ethical Clearance: The study was subjected to the ethical approval from Universiti Tunku Abdul Rahman Scientific and Ethical Review Committee (SERC).

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