

*Proceedings of The Annual International Conference Syiah Kuala University 2011  
Banda Aceh, Indonesia, November 29-30, 2011*

# Relationship between personality and coping with stress among undergraduates of Universiti Kebangsaan Malaysia

Choong-Yeun Liong and Hui-Ping Yeoh

School of Mathematical Sciences, Faculty of Science and Technology, Universiti Kebangsaan Malaysia, 43600 UKM Bangi, Malaysia. Corresponding Author: lg@ukm.my

**Abstract.** Personality and stress play an important role in our daily life. Stress will bring a positive effect, i.e. as a motivation if we can manage and handle it well. Therefore strategy of coping style is very important when one is under stress. The aim of this study is to explore the relationship between personality type and coping with stress style among undergraduates of Universiti Kebangsaan Malaysia. Specifically, the aim is to find out whether types of personality will affect the coping style when an undergraduate is under stress. This study also investigates the influence of demographic aspects of gender, ethnicity and stream of faculty on the relationship. Data were collected using questionnaires which were distributed to a total of 370 undergraduates from various faculties. Psychological test tools of NEO Five Factor Inventory and Coping Inventory for Stressful Situation were used to determine the personality and coping style of the respondents. The data were analyzed using SPSS. The data analysis techniques include descriptive analysis, reliability analysis, nonparametric correlation and partial nonparametric correlation tests. The results show that there are moderate positive correlations between Conscientiousness and problem-focused coping style, and between Neuroticism and emotion-focused coping style. Besides that, there are significant weak positive correlations between Extraversion and Openness with problem-focused coping style. Nonparametric test shows that Agreeableness and Conscientiousness are different between the genders. Results also show that Extraversion and Conscientiousness personality types, and the Avoidance coping style are significantly different among the ethnics. A few suggestions were also given for further study in the future.

**Key words:** personality, stress, coping style, undergraduate, SPSS

## Introduction

In the present era of globalization, society is much more concerned with identity formation and its impact on other aspects. Every identity has its own behavior and thoughts. Personality plays an important role in the formation of individual identity. Personality happen as thought, feeling and behavior that is unique to an individual (Cloninger 2008).

It is undeniable that this advanced era of globalization has led to more serious stress issues in the society. Nowadays, even students are suffering more stress compared to the previous generation. According to Kohn and Frazer (1986), university students nowadays are often faced with stress in their lives, due to factors like workload, assignments, college stressful situation, adjustment of conflict, and competition in academic achievement.

Hence, personality and stress play very important role in our daily life. Each individual would be experiencing stress, regardless of gender and ethnicity. Stress may have positive effects such as motivate an individual to manage his work better. Therefore, knowledge about coping style plays an important role in daily life. The aim of this study is to explore the relationship between personality and coping with stress style among undergraduates of Universiti Kebangsaan Malaysia. Specifically, the aim is to find out whether types of personality will determine the coping style when an undergraduate is under stress. This study also investigates the influence of demographic aspects of gender, ethnicity and type/stream of faculty on the relationship.

## Methodology

### **Subject and Instrument of Study**

A total of 370 undergraduate students from Universiti Kebangsaan Malaysia have participated in this study. The adequacy of sample size is by referring to the table in Krejcie and Morgan (1970). The instrument is a set of questionnaire which has three parts: (a) demographic information of the respondent – b gender, age, ethnicity, residential college, faculty and stream; (b) NEO Five Factor Inventory (NEO-FFI) – to determine type of Big

Five Personality: Neuroticism, Extraversion, Openness, Agreeableness or Conscientiousness (Brebner 2001). This part consists of 60 items and the respondent were asked to select the answers which best reflect their opinion on the item on a 5-point Likert Scale, i.e. strongly disagree, disagree, neither agree nor disagree, agree, or strongly agree; and part (c) Coping Inventory for Stressful Situation: Situation Specific Coping (CISS:SSC) – used to determine the stress coping style (problem-focused, emotion-focused and/or avoidance coping). This part consists of 21 items on a 5-point Likert Scale (CISS 2011).

## Results and Discussion

Data analysis was performed by using the SPSS statistical package (Zaidatun & Mohd Salleh 2003; Coakes et al.. 2009). Data analysis was divided into several parts: descriptive analysis of demographic information of the respondents, reliability analysis of items in the questionnaires, Spearman Rho correlation and nonparametric partial correlation analysis (Calkins 2005; Coakes et al.. 2009; Hair et al.. 2003; Reynolds 1974).

### Descriptive analysis of demographic information

Figure 1 shows the distribution of respondents by gender. There are a total of 370 respondents of the survey, and of which, 127 students or 34.3% are male respondents and 243 students or 65.7% are female. The ethnicities of the respondents are shown in Figure 2. Majority are Malays (179 students or 48.8%), followed by Chinese (162 or 43.8%), Indians (23 or 6.2%) and other ethnics (6 or 1.6%).

Figure 3 shows that the respondents are mainly aged between 21-22 years old (209 students or 56.5%), followed by 23-24 years old (108 or 29.2%), 19-20 (43 or 11.6%) and 25 years old (10 or 2.7%). The distribution of the age groups reflects the age of the undergraduate students at the University.

Distribution of respondents by faculty is given in Figure 4. Respondent from the Faculty of Science and Technology (FST) constitutes the majority (112 students or 30.3%), followed by Faculty of Engineering and Built Environment (FKAB) (54 or 14.6%), Faculty of Education (FPEND) (42 or 11.4%), Faculty of Information Science and Technology (FTSM) (41 or 11.1%), Faculty of Economics and Business (FEP) (39 or 10.5%), Faculty of Sciences and Humanities (FSSK) (37 or 10%), Faculty of Law (FUU) (25 or 6.8%) and Faculty of Islamic Studies (FPI) (20 or 5.4%). Out of these faculties, 207 students or 55.9% of the respondents are from the Science Stream while 163 students or 44.1% of respondents are from the Non-Science Stream. The faculties of Sciences and Technology, Engineering and Built Environment, and Information Science and Technology form the Science Stream, while the rest are the Non-Science.

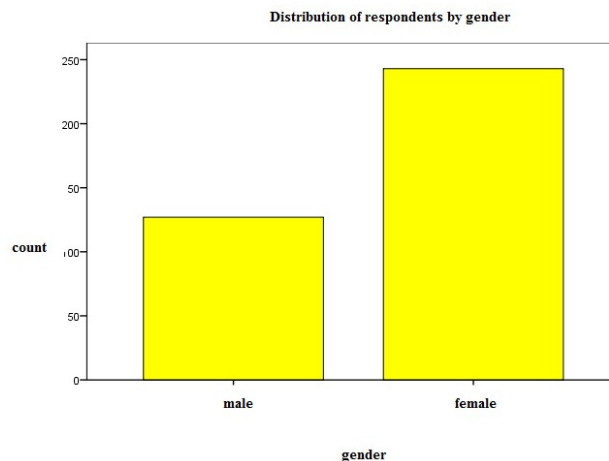


Figure 1. Distribution of respondents by gender.

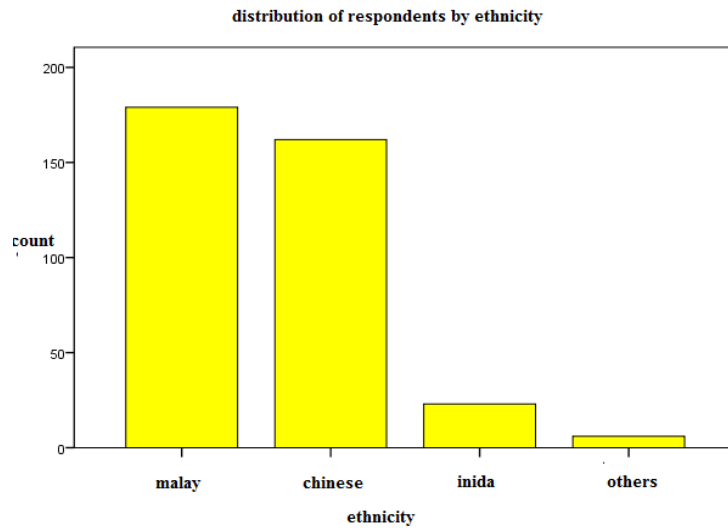


Figure 2. Distribution of respondents by ethnicity.

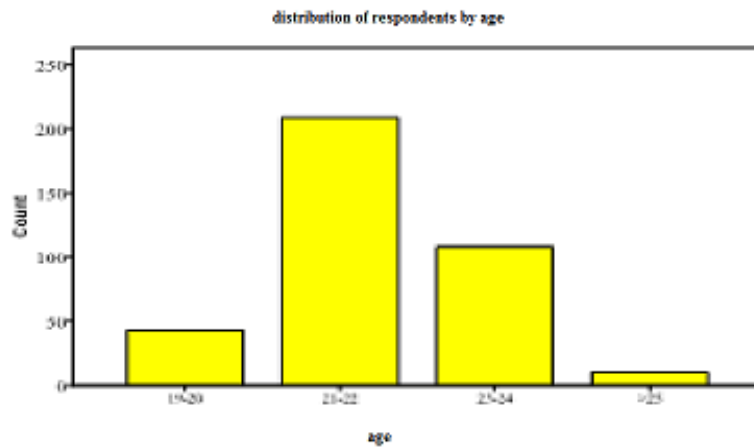


Figure 3. Distribution of respondents by age group.

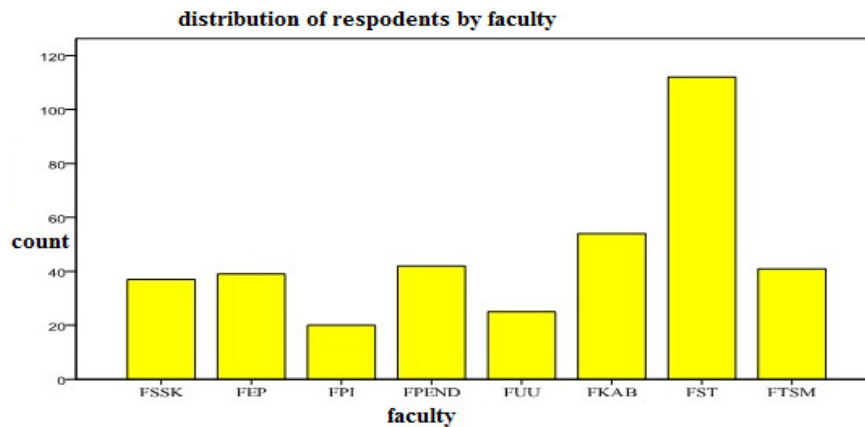


Figure 4. Distribution of respondents by faculty.

**Reliability Analysis**

Reliability analysis on the 60 items of the Big Five Personality is moderate and fulfills the minimum requirement, where the Cronbach's alpha is 0.682. The same level of reliability is observed for the 21 items in Coping Inventory for Stressful Situation: Situation Specific Coping (CISS: SSC) with a Cronbach's alpha value of 0.682. However, the overall reliability for all the 81 items combined together is found to be better, i.e. in the good class with an alpha of 0.759.

### **Normality Test**

Kolmogorov-Smirnov test were used to determine the normality of the data sets for each of the personality types and stress coping styles. If the assumption of normality is violated, non-parametric analysis should be used for further analysis. Table 1 shows that the Kolmogorov-Smirnov tests are significant and this means that the distributions of all the data sets are not normal.

Table 1. Normality test on the big five personality factors and the coping styles.

	Kolmogorov-Smirnov		
	statistic	df	<i>p</i> -value
Neuroticism	0.056	370	0.007
Extraversion	0.070	370	0.000
Openness	0.090	370	0.000
Agreeableness	0.071	370	0.000
Conscientiousness	0.055	370	0.008
Problem-focused Coping	0.121	370	0.000
Emotion-focused Coping	0.101	370	0.000
Avoidance Coping	0.076	370	0.000

### **Spearman's rho Correlation Test**

Referring to table 2, there is a highly significant positive correlation between Neuroticism and emotion-focused coping that is 0.496 but Neuroticism is negatively correlated with problem-focused coping (-0.282). This means that personality type Neuroticism have a high tendency to use emotion-focused coping style during stressful situations. However, the strength level of this relationship is moderate. Extraversion correlates positively with problem-focused coping style (0.376) and avoidance coping style (0.241) at significant level 0.01. Although the strength of the relationship is weak but the higher correlation value in problem-focused coping style means the Extraversion type tends to use problem-focused coping style compared to avoidance coping style when they are under a stressful condition. Besides that Agreeableness correlates positively with problem-focused coping (0.377) at significant level 0.01. However Agreeableness correlated negatively with emotion-focused coping or avoidance coping styles. Therefore we can conclude that the Agreeableness type will use problem-focused coping style during stressful situation. Openness shows a significant positive correlation with problem-focused coping style (0.110). As expected, Conscientiousness has a highly significant ( $P < 0.01$ ) moderate positive relationship with problem-focused coping style (0.543). This means that the Conscientiousness type is highly tend to use problem-focused coping style when they are under stressful situation.

Table 2. Spearman correlation between big five personality and coping style.

	Problem-focused Coping	Emotion-focused Coping	Avoidance Coping
Neuroticism	-0.282**	0.496**	-0.019
Extraversion	0.376**	-0.051	0.241**
Openness	0.110*	-0.102	0.093
Agreeableness	0.377**	-0.190**	-0.007
Conscientiousness	0.543**	-0.169**	0.121*

\*\*significant at the 0.01 level, \*significant at the 0.05 level

### **Nonparametric Partial Correlation Test**

Another interesting question is whether the relationship between personality type and coping style reported above will be influenced the gender, ethnic or educational stream. This led to the partial correlation analysis and the results are given in Table 3. Most of the changes are too small to affect the strength of the overall correlation values. Therefore, we can conclude that the relationship and between personality type and stress coping style are not affected by gender, ethnicity or educational stream.

Table 3. Summary of Spearman's Rho and Nonparametric Partial Correlations.

		Problem-focused Coping	Emotion-focused Coping	Avoidance Coping
Neuroticism	S	-0.282	0.496	-0.019
	J	-0.287	0.492	-0.029
	E	-0.282	0.497	-0.019
	F	-0.278	0.504	-0.017
Extraversion	S	0.376	-0.051	0.241
	J	0.377	-0.050	0.243
	E	0.375	-0.044	0.229
	F	0.378	-0.050	0.241
Openness	S	0.110	-0.102	0.093
	J	0.111	-0.102	0.094
	E	0.110	-0.101	0.093
	F	0.108	-0.104	0.092
Agreeableness	S	0.377	-0.190	-0.007
	J	0.376	-0.204	-0.020
	E	0.377	-0.190	-0.009
	F	0.376	-0.193	-0.008
Conscientiousness	S	0.543	-0.169	0.121
	J	0.542	-0.181	0.111
	E	0.542	-0.165	0.112
	F	0.547	-0.167	0.122

Note: S - Spearman Rho's Correlation, J - Gender, E - Ethnicity, F - Faculty Stream

### **Identifying the Big Five Personality by Gender, Ethnicity and Stream**

As the data are not normal (Table 1), Mann-Whitney U test was used to test whether Big Five Personality is influenced by gender. Based on Table 7, the  $p$ -values for the personality type Agreeableness and Conscientiousness are less than 0.05, and hence are influenced by gender. This means that the mean values for Agreeableness and Conscientiousness are higher for the female students.

Kruskal-Wallis test were used to test whether the Big Five Personality is influenced by ethnicity. Based on Table 5, the  $p$ -values for Extraversion and Conscientiousness are less than 0.05 and this means that both of these personality types are significantly different between the ethnic groups. On average, the value of Extraversion and Conscientiousness are higher in the 'Others' ethnic group compared to Malay, Chinese or India. Referring to Table 6,  $p$ -values for all types of personality is greater than 0.05. Therefore there is no significant difference between the two populations, i.e. personality type is not influenced by whether a student is in the science or the non-science stream.

Table 4. Mann-Whitney U test for big five personality and gender.

Personality	Mann-Whitney U	Z	P-value	Mean	
				Male	Female
Neuroticism	13615.5	-1.861	0.063	171.21	192.97
Extraversion	15273.5	-0.161	0.872	186.74	184.85
Openness	15324.0	-0.110	0.913	186.34	185.06
Agreeableness	13137.0	-2.353	<b>0.019</b>	167.44	194.94
Conscientiousness	13385.5	-2.097	<b>0.036</b>	169.40	193.92

Table 5. Kruskal-Wallis test for big five personality and ethnicity.

Personality	Chi square	df	P-value	Mean			
				Malay	Chinese	India	Others
Neuroticism	1.789	3	0.617	187.72	179.28	208.46	199.17
Extraversion	11.007	3	<b>0.012</b>	200.96	168.91	164.35	253.08
Openness	7.056	3	0.070	182.70	196.62	140.70	140.33
Agreeableness	0.592	3	0.898	187.47	183.94	175.11	208.50
Conscientiousness	9.436	3	<b>0.024</b>	197.92	167.65	197.78	249.83

Table 6. Mann-Whitney U test for big five personality and stream.

Personality	Mann-Whitney	Z	P-value	Mean	
				Science	Non-science
Neuroticism	14993.5	-1.841	0.066	176.43	197.02
Extraversion	16445.5	-0.418	0.676	183.45	188.11
Openness	15940.5	-0.915	0.360	189.99	179.79
Agreeableness	16136.5	-0.720	0.471	189.05	181.00
Conscientiousness	15854.5	-0.997	0.319	180.59	191.73

### **Identifying the Coping Style by Gender, Ethnicity and Stream**

As the data are not normal (Table 1), nonparametric tests were used in the analyses. Based on Table 7, there is no significant difference in coping style between male or female students when they are under stressful situation ( $P > 0.05$ ).

Table 7. Mann-Whitney U test for coping style and gender.

Personality	Mann-Whitney U	Z	P-value	Mean	
				Male	Female

Coping Style	Mann-Whitney U	Z	P-value	Male	Female
Problem-focused	14993.5	-1.841	0.066	176.43	197.02
Emotion-focused	16445.5	-0.418	0.676	183.45	188.11
Avoidance	15940.5	-0.915	0.360	189.99	179.79

Based on the results of the Kruskal-Wallis test in Table 8, Avoidance coping style is significantly different between the ethnics ( $P < 0.05$ ). On average, the mean value of Avoidance coping style for the 'Others' ethnic is higher than Malay, Chinese or Indian. However, it should be pointed out that the small sample size may have made this result questionable and further studies may have to be performed for more concrete results. And, on whether coping style is influenced by the educational stream, Table 9 shows that there are no significant different in coping styles between the science and non-science streams ( $P > 0.05$ ).

Table 8. Kruskal-Wallis test for coping style and ethnicity.

Coping Style	Chi			Mean			
	square	Df	P-value	Malay	Chinese	India	Others
Problem-focused	2.277	3	0.517	190.81	176.89	180.22	231.08
Emotion-focused	1.681	3	0.641	180.58	186.95	206.87	211.08
Avoidance	7.987	3	<b>0.046</b>	197.37	178.27	137.43	211.00

Table 9. Mann-Whitney U test for coping style and stream.

Coping Style	Mann-Whitney U	Z	P-value	Mean	
				Science	Non-science
Problem-focused	15859.5	-0.997	0.319	190.38	179.30
Emotion-focused	15890.5	-0.963	0.336	190.23	179.49
Avoidance	16436.5	-0.436	0.663	187.64	182.78

## Conclusions

Relationship between personality type and style of coping with stress among undergraduates of Universiti Kebangsaan Malaysia has been studied. The results show that there are moderate positive correlations between Conscientiousness and problem-focused coping style, and between Neuroticism and emotion-focused coping style. Besides that, there are significant weak positive correlations between Extraversion and Openness with problem-focused coping style. Nonparametric test shows that Agreeableness and Conscientiousness are different between the genders. The results also show that Extraversion and Conscientiousness personality types, and the Avoidance coping style, are significantly different among the ethnics. However, it should be noted that the sample size for the 'Others' ethnic group is relatively small and may have affected the test results. Besides that, if larger sample size still remains non-normally distributed, polychoric correlation analysis can be investigated in future work.

## Acknowledgements

The authors would like to thank the University for the Research Grants No. UKM-ST-06-FRGS0183-2010.

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