

CROSS SECTIONAL STUDY: STRESS, DEPRESSION, ANXIETY AND COPING STYLES AMONG MALAYSIAN UNIVERSITY STUDENTS

Das P¹, and Krishnan PK².

¹ Faculty of Medicine, SEGi University No. 9, Jalan Teknologi, Taman Sains Selangor, Kota Damansara, PJU 5, 47810 Petaling Jaya, Selangor, Malaysia

² Faculty of Health Sciences, Asia Metropolitan University, G-8, Jalan Kemacahaya 11, Taman Kemacahaya, Batu 9, 43200 Cheras, Selangor Darul Ehsan, Malaysia

Correspondence:

Priscilla Das,

Faculty of Medicine,

SEGi University No. 9, Jalan Teknologi,

Taman Sains Selangor, Kota Damansara, PJU 5,

47810 Petaling Jaya, Selangor, Malaysia

Email: daspriscilla@yahoo.com

Abstract

Introduction: Psychiatric symptoms such as depression and anxiety can have a strong impact on mental health status.

Objectives: The study aimed to determine the prevalence and associated factors of stress, depression, and anxiety in relation to coping styles among university students.

Methods: A self-administered questionnaire consisting of socio-demographic information, Depression Anxiety Stress Scales (DASS)-21 and the Brief-Coping Orientation to Problems Experienced (COPE) inventory was used. The collected data were analyzed, and descriptive statistics and correlational tests were applied in this study.

Results: The majority of respondents were female (n=84). A total of 100 university students aged from 18-44 years old were included in the study. The students were pursuing either a bachelor (n=33), diploma (n=66) or master's program (n=1). About 26% of the respondents had different grades of stress with 12%, 6% and 8% of respondents experiencing mild, moderate and severe degrees of stress respectively. The results also showed that 33% of the respondents had different grades of depression with 10%, 13%, 5% having mild, moderate and severe degrees of depression respectively. Another 5% had extremely severe depression. As many as 61% of the respondents had different grades of anxiety with mild (8%), moderate (25%), severe (9%) and extremely severe (19%) degrees of anxiety. Stress was associated with venting coping styles ($r=0.287$; $p=0.004$), behavioral disengagement ($r=0.425$; $p<0.001$) and self-blame ($r=0.469$; $p<0.001$). Depression correlated with behavioral disengagement ($r=0.383$; $p<0.001$) and self-blame ($r=0.375$; $p<0.001$) and correlated negatively with positive reframing ($r=-0.221$; $p=0.027$). Finally, anxiety had a significant relationship with behavioral disengagement ($r=0.383$; $p<0.001$) and self-blame ($r=0.403$; $p<0.001$).

Conclusion: Maladaptive coping styles such as venting, behavioral disengagement and self-blame have a significant impact on increased stress, anxiety and depression levels among university students.

Keywords: Stress, Depression, Anxiety, Student, Coping Styles

Introduction

Psychiatric disorders such as depression and anxiety can have a strong impact on mental health status (1). Students not only suffer due to their study workload, they are also at risk of developing psychiatric disorders (2). Previous studies have shown that experiencing high levels of depression and anxiety interferes with the ability to learn, memorize, and earn good grades (3, 4). Varying types of coping can be assessed, such as problem-focused coping

(active coping, planning, use of instrumental support), emotionally focused coping (use of emotional support, positive reframing, religion), adaptive coping (acceptance, humor), and maladaptive coping (self-distraction, denial, substance use, behavioral disengagement, venting, and self-blame) (5). Notably, students with impaired psychosocial characteristics have more emotional distress and may exhibit these maladaptive behaviors. Furthermore, long-term students who are optimistic tend

to have fewer study-related worries as well as lower levels of depression and anxiety (6, 7).

Even though college is the most enjoyable experience in an adult's life, students need to enhance their coping strategies to overcome depression and anxiety. Effective curability will remain weak if depression and anxiety symptoms are left untreated and no attention is given to improving their overall coping strategies. There are a limited number of studies investigating the prevalence of depression and anxiety with respect to coping styles among Malaysian university students. The main goal of this study is to determine the prevalence of depression and anxiety symptoms among university students, to determine coping styles among university students and to determine the associated factors of depression, anxiety and coping styles among university students.

Materials and Methods

This is the list of questionnaires used in this study:

- a) Socio demographic questionnaire
- b) Brief-COPE inventory
- d) DASS-21 questionnaire

Study location

University Students: (Asia Metropolitan University, Sime Darby Healthcare College, Management and Science University & INTI International University and Colleges).

Study design

Cross sectional study.

Study duration

Two years (2017-2019).

Study population

University students from Asia Metropolitan University, Sime Darby Healthcare College, Management and Science University & INTI International University and Colleges (n=100).

Inclusion criteria

Participants were selected based on four main inclusion criteria. First, the participant must be a university student. Second, the age of the participant must be 18 years old and above. Third, the participant should be able understand Malay, English, Mandarin or Tamil. Fourth, the participant must be fit to be interviewed.

Sample size

Sample size was calculated using the single proportion formula (8):

$$n = Z^2 P (1-P) / d^2,$$

where Z is the level of confidence (1.96 standard errors from the mean, with a level of significance of $\alpha = 0.05$), P is the expected prevalence of depression among the students (assumed to be 7.2%), and d is the precision of P (set at 5%).

Sampling method

Universal sampling.

Data collection technique

The researchers distributed an online form that consisted of 3 sections, a) a socio-demographic questionnaire, b) DASS questionnaire and c) Brief-COPE questionnaire to the university students. The completed forms were collected and analyzed for the study.

Statistical analysis

The data collected were analyzed using the Statistical Package for the Social Sciences version 22. Descriptive statistics and correlational tests were applied in this study.

Questionnaires

a) Socio-demographic questionnaire

A socio-demographic questionnaire was used to assess student's age, gender, race, religion, marital status, education level, occupation, socio-economic status and number of family members.

b) DASS-21

Questions 3, 5, 10, 13, 16, 17, and 21 were used to create the depression subscale. The overall depression subscale score was classified as normal (0–9), mild depression (10–12), moderate depression (13–20), severe depression (21–27), and extremely severe depression (28–42). Questions 2, 4, 7, 9, 15, 19, and 20 comprised the anxiety subscale. The total anxiety subscale score was classified as normal (0–6), mild anxiety (7–9), moderate anxiety (10–14), severe anxiety (15–19), and extremely severe anxiety (20–42). The stress subscale consisted of questions 1, 6, 8, 11, 12, 14, and 18. Scores of normal (0–10), mild stress (11–18), moderate stress (19–26), severe stress (27–34), and extremely severe stress (35–42) were used to categorize the total stress subscale score. Sum scores were calculated by multiplying the scores on the items per (sub) scale by a factor of two. As a result, the aggregate scores for each subscale varied from 0 to 42. The reliability of the DASS-21 was demonstrated by

excellent Cronbach's alpha values of 0.81, 0.89, and 0.78 for the depression, anxiety, and stress subscales, respectively. DASS-21 was discovered to have high internal consistency, and discriminative, concurrent, and convergent validity. The DASS-21 depression and anxiety subscales correlated well with the self-rating depression scale and the state trait anxiety assessment. The psychometric qualities of the DASS-21 were found to be satisfactory. Thus, DASS-21 was dependable, valid, and simple to use. Clinicians' use of the instrument would improve the diagnosis of depression, anxiety, and stress among university students (9).

c) Brief COPE

The Brief-COPE questionnaire was comprised of 14 coping style domains. The score for coping styles ranged from 2 to 8 (5). The questionnaire had good validity and reliability.

Coping strategies were scored by summing the two items within each scale (all scales ranged from 2 to 8). The Brief-COPE questionnaire had sufficient validity and reliability. Both the English and Malay versions of the Brief-COPE had good validity and reliability among the Malaysian population. Internal consistencies for the scale ranged from 0.25 to 1.00 and the Intraclass Correlation Coefficient ranged from 0.05 to 1.00. The sensitivity ranged from 0 to 0.53 (10, 11).

Results

A total of 100 university students aged from 18-44 years old were included in the study. The majority of respondents were female (n=84). The students were pursuing a bachelor (n=33), diploma (n=66) or master's program (n=1). Figure 1 shows the sociodemographic profile of the students.

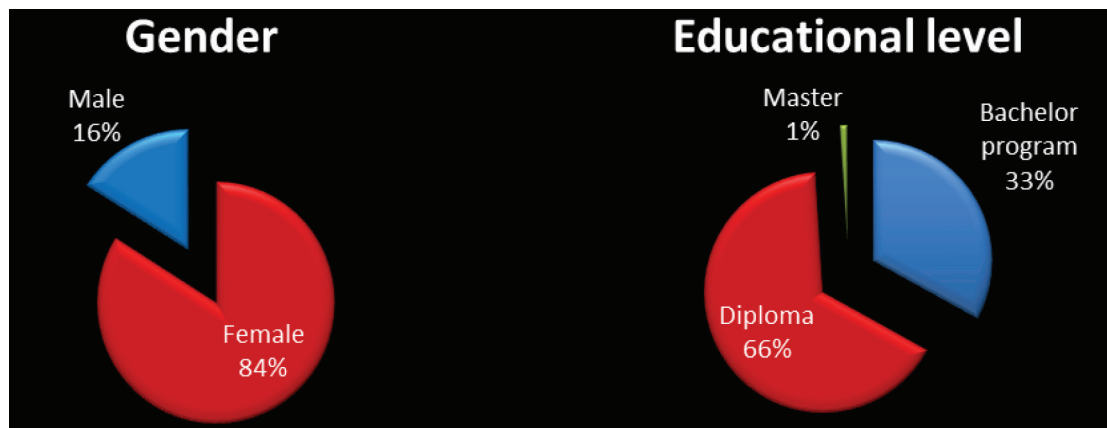


Figure 1: Sociodemographic profile of university students

About 26% of the respondents had different grades of stress with 12%, 6% and 8% having mild, moderate and severe degrees of stress respectively. The results also showed 33% of respondents had different grades of depression with 10%, 13% and 5% having mild, moderate and severe degrees of depression respectively. Another 5% had extremely severe depression. As many as 61% of the respondents had different grades of anxiety with mild (8%), moderate (25%), severe (9%) and extremely severe (19%) degrees of anxiety respectively (Figure 2).

The most common coping styles used by the students, in descending order, were positive reframing (6.43), self-distraction (6.26), religion (6.21), acceptance (6.03), active coping (5.97), use of instrumental support (5.69), use of emotional support (5.57), humor (4.89), venting (4.84), denial (4.48), self-blame (4.19), behavioral disengagement (3.62) and substance use (2.46) (Table 1).

Correlation

Stress was associated with venting coping styles ($r=0.287$; $p=0.004$) and behavioral disengagement ($r=0.425$; $p<0.001$). Depression was correlated with behavioral disengagement ($r=0.383$; $p<0.01$) and self-blame ($r=0.375$;

$p<0.001$) and negatively correlated with positive reframing ($r=-0.221$; $p=0.027$). Finally, anxiety had a significant relationship with behavioral disengagement ($r=0.383$; $p<0.001$) and self-blame ($r=0.403$; $p<0.001$).

Discussion

A study carried out among undergraduate Malaysian private university students found that as many as 64.6% of 1st year students had anxiety followed by 32.1% with depression and 29.2% with stress. Four factors were identified to contribute towards depression, which were gender, age, education major and job. Anxiety correlated with education major while stress with mother's income and student's job. Interestingly parent's education was interconnected with depression, anxiety and stress. A student's academic performance is often affected by these psychological symptoms and special attention should be given to students to enhance their overall mental health. Depression, anxiety and stress can be reduced with better coping strategies (12). Similarly, in this study it was found that the prevalence of anxiety (61%) among Malaysian private university students was the highest, followed by depression (33%) and stress (26%). In a recent study done

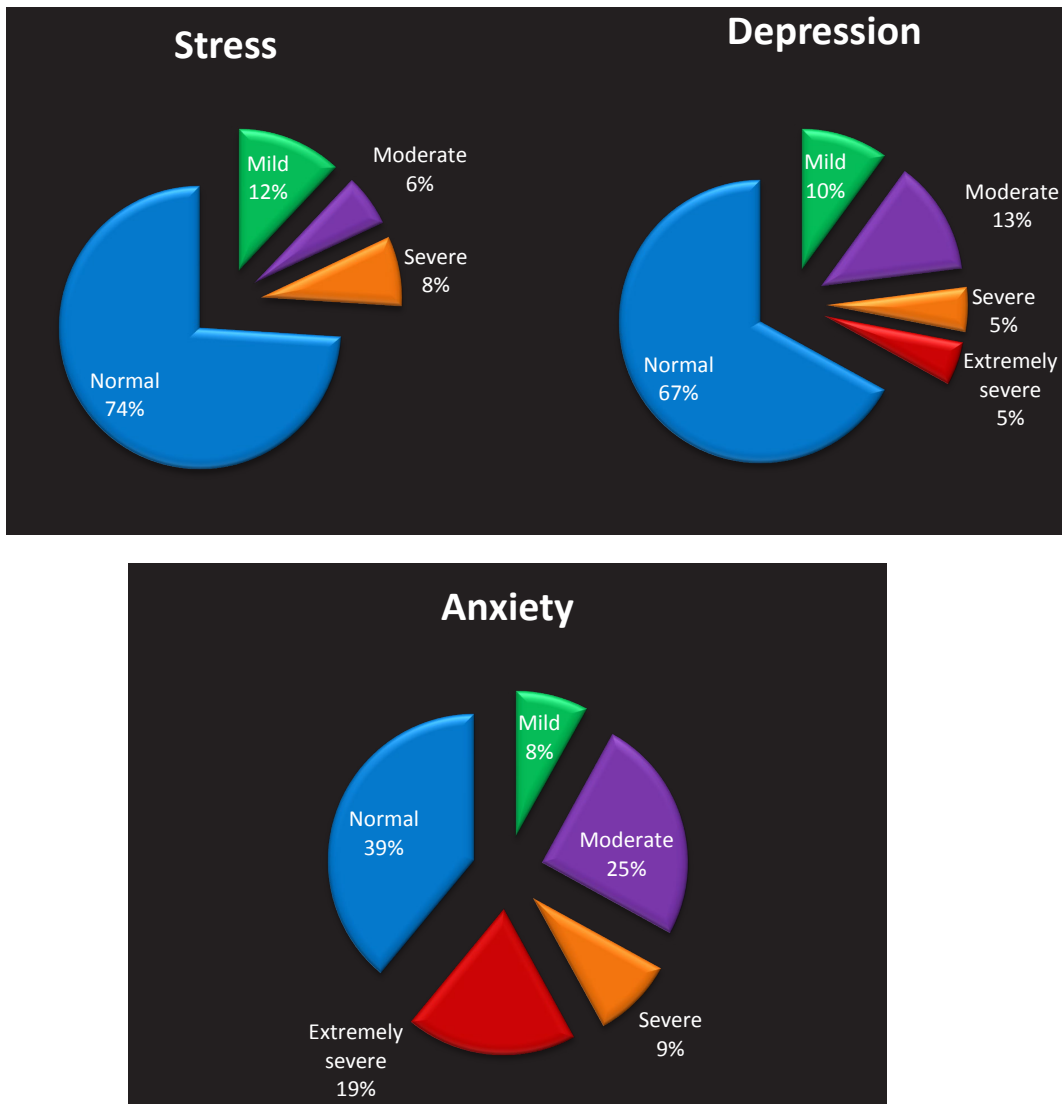


Figure 2: Prevalence of stress, depression and anxiety among university students

Table 1: Coping styles among the university students

	Mean	Standard deviation
Active coping	5.97	1.68
Positive reframing	6.43	1.65
Acceptance	6.03	1.73
Humor	4.89	1.82
Religion	6.21	1.74
Use of emotional support	5.57	1.88
Use of instrumental support	5.69	1.91
Self-distraction	6.26	1.64
Denial	4.48	1.76
Venting	4.84	1.77
Substance use	2.46	1.33
Behavioral disengagement	3.62	1.66
Self-blame	4.19	1.76

in Punjab University, depression (59.3%), anxiety (86.5%) and stress (52.8%) were identified as being prevalent among university students.

Younger students (below 19 years old) were found to have a greater prevalence of depression, anxiety and stress (DAS). The DAS level decreased with increased age. Morbidity was common among female students and students who lived in a hostel. The study also found that those students with increased severity of DAS had low physical, mental, social and spiritual scores but a high score on the emotional aspect because of their analytical minds and introvert behavior (13). Those students who lived together with their extended families were found to have reduced depression levels (23.6%) compared with students who lived in nuclear families (76.4%) because they found difficulties in sharing their thoughts with their parents (13). These factors could be the reason behind the depression, anxiety and stress symptoms found among the students.

Academic workload, such as test schedules, was a burden for the students and this led to depression (69.7%) and

anxiety (94.4%) among them. The study also highlighted that, due to the extensive curriculum, the students were seldom involved in recreational activities. It is interesting to note that students who were from the higher income group experienced more depression than students who were from the moderate income group. The study also suggested that psychological aspects should be monitored in the health center of the university itself to address the problems faced by students. The mentoring program should also be enhanced to help the students' growth (13).

The current study found that positive reframing (6.43) was widely used by students, followed by self-distraction (6.26), religion (6.21), acceptance (6.03), active coping (5.97), use of instrumental support (5.69), use of emotional support (5.57), humor (4.89), venting (4.84), denial (4.48), self-blame (4.19), behavioral disengagement (3.62) and substance use (2.46). These results are comparable with another study which found that adaptive coping, such as religious coping with a score standard deviation (SD) of 6.02 (1.65); positive reframing, 5.75 (1.62); planning 5.66 (1.63); active coping, 5.62 (1.64), was widely practiced by the students. Meanwhile, maladaptive coping, such as self-distraction with a score (SD) of 5.51 (1.55), venting, 4.75 (1.60) and self-blame, 4.62 (1.67), was prevalent among the students. Male students faced more depression compared to female students. Depression was found to occur more in students who were aged ≥ 22 years (12).

The religion, venting, humor, denial, substance abuse and behavioral disengagement coping styles were found to be associated with depression. Meanwhile humor, substance abuse and behavioral disengagement were found to be significantly associated with anxiety. Stress was associated with the instrumental support, venting, humor, denial, substance abuse and behavioral disengagement coping styles. Student who are enrolling in the first semester often face many challenges. The new environment and academic workload, such as tests, final exams and assignments, might impose a serious threat to their coping styles when facing psychological problems. The study suggested that early screening and intervention among students would curb depression, anxiety and stress through the use of effective coping styles (12). This is in agreement with the current study which found that depression was associated with behavioral disengagement and self-blame and correlated negatively with positive reframing. Anxiety also had a significant association with behavioral disengagement and self-blame, while stress was correlated with venting coping styles and behavioral disengagement.

About 26% of the respondents had different grades of stress with 12%, 6% and 8% having mild, moderate and severe degree of stress respectively. The results also showed 33% of respondents had different grades of depression with 10%, 13%, 5% having mild, moderate and severe degrees of depression respectively. Another 5% had extremely severe depression. As many as 61% of the respondents had different grades of anxiety with mild (8%), moderate (25%), severe (9%) and extremely severe

degrees of anxiety (19%). One of the stabilizing factors that was seen among stressful individuals was coping (14). The most stressful situation often faced by students was their entry to university life (15). University life was found to be more stressful compared to other stages of life among the students. Studies have proven that effective coping styles can reduce the amount of stress faced by university students (16). There are only a limited number of studies that have been conducted among Malaysian university students (17, 18). Most studies have been carried out in western populations (16). There are many factors affecting stress levels among university students, such as coming from a different culture, and age group plays an important role in this. Survival during this period of study is challenging and this might induce higher stress levels among students (19). Job prospects when they graduate (20) and the search for internships and jobs are significant predictors of stress level (21). Extra-curricular activities, such as sports, should be enhanced in the university to reduce stress levels among students (16).

A study was done among 376 medical and medical sciences students at the International Medical School, Management and Science University. The data were collected during the middle of semester in 2009. Too much stress or some level of stress, about 46.3%, was reported among the students, followed by "a little bit" of stress, about 47.6%, while only 6.1% reported "no stress". The smoking factor was found to be significantly related to stress at 71.4% (odds ratio (OR) = 3.2, 95% confidence interval (CI) 1.5–7.0, $P = 0.002$) compared to not smoking (43.7%) (22).

Implementing action to solve stressful situations, known as active coping, includes planning, acceptance and positive reframing. Meanwhile avoidance strategies include denial, behavioral disengagement, venting and humor (5). The mediator role of mindfulness was investigated among Malaysian university students in the Klang valley area in relation to academic stress and self-regulation. The study found that examinations and faculty work were the main reasons for a student's academic stress. Controlling negative feelings like emotion, thoughts and behaviors can improve total mindfulness, and students should be able to improve their academic status (23). University lecturers, career-counselling centers, and administrators play an important role in reducing stress levels among students. Workshops on how to cope with stress should be implemented throughout the academic year and counselors should take more initiative in overcoming these problems in the university. These steps might create a well-balanced environment for students to carry out their academic activities by preventing the negative effects of stress, such as poor health status (22).

Conclusion

Maladaptive coping styles, such as venting, behavioral disengagement and self-blame, have a significant impact on increased stress, anxiety and depression levels among university students. This study provides a

better understanding of the role of coping styles, stress, depression and anxiety among university students and an opportunity for early intervention and the overall improvement of their mental health.

Acknowledgement

The study was supported by Asia Metropolitan University Research Grant (ARGS), AMU/CRD/ARGS/P1/2017/(03).

Ethical Clearance

Approval for this study was obtained from the Research & Ethics Committee of Asia Metropolitan University (AMU/CRD/ARGS/P1/2017/(03)). Informed consent was obtained and the students' participation in this study was voluntary and anonymous. Data collected were treated with strict confidentiality.

Competing Interests

The authors declare that there is no conflict of interest in this study.

References

1. Sepulveda AR, Carrobles JA, Gandarillas AM. Gender, school and academic year differences among Spanish university students at high-risk for developing an eating disorder: an epidemiologic study. *BMC Public Health*. 2008;8:102.
2. Thomée S, Dellve L, Härenstam A, Hagberg M. Perceived connections between information and communication technology use and mental symptoms among young adults - a qualitative study. *BMC Public Health*. 2010;10:66.
3. Jackson JW. Enhancing self-efficacy and learning performance. *J Exp Educ*. 2002;70(3):243-54.
4. Ciarrochi J, Patrick CL, Heaven FD. The impact of hope, self-esteem, and attributional style on adolescents' school grades and emotional well-being: a longitudinal study. *J Res Pers*. 2007;41(6):1161-78.
5. Carver CS. You want to measure coping but your protocol's too long: consider the brief COPE1997. *Int J Behav Med*. 1997;4(1):92-100.
6. Ergene T. The relationships among test anxiety study habits achievement motivation and academic performance among Turkish secondary school students. *Egitim ve Bilim*. 2011;36(160):320.
7. Gardner DH, Parkinson TJ. Optimism, self-esteem, and social support as mediators of the relationships among workload, stress, and well-being in veterinary students. *J Vet Med Educ*. 2011;38(1):60-6.
8. Daniel WW. *Biostatistics: a foundation for analysis in the health sciences*. 7th Ed. New York: John Wiley & Sons. 1999.
9. Coker AO, Coker OO, Sanni D. Psychometric properties of the 21-item depression anxiety stress scale (DASS-21). *Afr Stud Rev*. 2018;12(2):135-42.
10. Yusoff N, Low W, Yip C. Reliability and validity of the Malay version of brief cope scale: a study on Malaysian women treated with adjuvant chemotherapy for breast cancer. *Malays J Psychiatry*. 2009;18(1):1-9.
11. Yusoff N, Low W, Yip C. Reliability and validity of the Brief COPE Scale (English Version) among women with breast cancer undergoing treatment of adjuvant chemotherapy: a Malaysian study. *Med J Malaysia*. 2009;65:41-4.
12. Mohammed H, Hayati KS, Salmiah MS. Coping with depression, anxiety, and stress: A cross-sectional study among Malaysian students in a public university. *IOSR-JDMS*. 2016;15(11):83-95.
13. Singh M, Goel N, Sharma M, Bakshi R. Prevalence of depression, anxiety and stress among students of Punjab University, Chandigarh. *Natl J Community Med*. 2017;8(11):666-71.
14. Bamuhair SS, Al Farhan AI, Althubaiti A, Agha S, Rahman Su, Ibrahim NO. Sources of stress and coping strategies among undergraduate medical students enrolled in a problem-based learning curriculum. *J Biomed Educ*. 2015;2015:575139.
15. Mofatteh M. Risk factors associated with stress, anxiety, and depression among university undergraduate students. *AIMS Public Health*. 2021;8(1):36-65.
16. Ganesan Y, Talwar P, Norsiah F, Oon YB. A study on stress level and coping strategies among undergraduate students. *JCSHD*. 2018;3(2):37-47.
17. Madlan L, Bahari F, Ardillah F. Stress and coping skills among university students: a preliminary research on ethnicity. *Southeast Asia Psychol J*. 2012;1:31-7.
18. Johari A, Hassim N. Stress and coping strategies among medical students in national university of Malaysia, Malaysia University of Sabah and Universiti Kuala Lumpur Royal College of Medicine Perak. *J Community Health*. 2009;15(2):106-15.
19. Hung C. Coping strategies of primary school teachers in Taiwan experiencing stress because of teacher surplus. *Soc Behav Pers*. 2011;39:1161-74.
20. Wang C. Investigation on the stress state of undergraduate. *Chin J Health Psychol*. 2005;13(4):312-3.
21. Li H, Lin C. College stress and psychological well-being of Chinese college students. *Xin Li Xue Bao*. 2003;35(2):222-30.
22. Al-Dubai SAR, Al-Naggar RA, Alshagga MA, Rampal KG. Stress and coping strategies of students in a medical faculty in Malaysia. *Malays J Med Sci*. 2011;18(3):57-64.
23. Hj Ramli NH, Alavi M, Mehrihezad SA, Ahmadi A. Academic stress and self-regulation among university students in Malaysia: mediator role of mindfulness. *Behav Sci*. 2018;8(1):12.