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Research Article
Relationship Between Generic Skills, Academic Performance and Stress Level among Undergraduate Students

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Abstract

Background: Generic skills also known as soft skills, employability skills and competencies skills. In order to increase the mastery of generic skills, university offered credited co-curriculum programme to their students. This study aims to determine the relationship between generic skills, academic performance and stress level among undergraduate students. **Materials and Methods:** A sample of 116 undergraduate students from four different programmes were selected to participate in this study. Academic performance was assessed by Cumulative Grade Point Average (CGPA), for the previous semester, whereas, the stress level were determined by using Depression Anxiety Stress Scale 21-item (DASS21) questionnaire and generic skills were determined using questonaire. **Results:** The finding shows that the students had a good generic skills and normal stress level after undergo the credited co-curriculum courses. There is no significant difference in generic skills and stress level between programmes. Overall, there was a weak correlation between generic skills and stress level on academic performance. **Conclusion:** Credited co-curriculum course were good for the students for increase their generic skills and fulfil the needs of the employee in the industry.

Key words: Undergraduate students, generic skills, stress level, academic performance

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Competing Interest: The authors have declared that no competing interest exists.

Data Availability: All relevant data are within the paper and its supporting information files.

INTRODUCTION

Now-a-days, tertiary education is inherently stressful and demanding in order to achieve highest level of quality of education and employability. Previous study confirms that the development of generic skills that student expectation to adapt their lifestyle in university life[1]. An optimal level of generic skills enhances learning and employability. Another study reveals the university graduate should have a good communication skills, self-confidence, skills in problem solving and good personality. In order to increase the mastery of generic skills, university offered credited co-curriculum programme to their students and believed the course could help in preparing their students employability[2].

Menwhile another study, indicated generic skills were defined as soft skills, employability skills and competencies skills[3]. The researcher listed several generic skills, which is teamwork, communication skills, initiative, leadership capability, training, self-esteem and planning skills. Generic skills are marketability skills and important with the used in academic skills[4,5].

The two major academic predictors of students' performance at university identified are previous academic performance and study skills[6]. Another researcher Lizzio *et al.*[7] define academic performance by calculating, using university academic records, student's Grade Point Average (GPA)[7]. There are other effect of the academic stress such as increasing in body mass index[8] and eating behaviour[9].

Stress is a conditions where individual facing with a chance, problems or dissatisfaction regarding the lifestyle as a student to cope with university life[10]. Stress can give positive and negative effects. There was common cause of stress among students which, study Siraj *et al.*[11] indicated that the cause of stress were academic, financial problem, health problems and loss of close family members or friends[11]. Stress could interfere with ability to learn, excellent in studies, inactive lifestyle and emotional[12].

Generic skills are viewed as important in higher education, which is referred to range of quality of graduates and these generic competencies are important for enabling Malaysian graduate employees to transfer learning from classroom to the workplace for success in work performance. Hence, this study is important to investigate what the students perceive are their generic skills and its relationship with their academic performance and stress level.

The objectives of this study were to determine the level of generic skills and stress level among undergraduate student, to compare the generic skills and stress level by different programmes and find the relationship of generic skills and stress level on academic performance.

MATERIALS AND METHODS

The subjects were chosen using simple random sampling method. This study involved a total of 116 subjects consisting of 2nd and 3rd year students from Kuala Lumpur specifically from Nutrition Science, Biomedical Science, Environmental Health (EVH) and Diagnostic Imaging and Radiotherapy (PDR).

The reason of selecting 2nd and 3rd year students for this study were because most of them have adapted well to the university life and have experience in the credited co-curriculum course or known as credited co-curriculum program. The inclusion criteria for this study were 2nd and 3rd year students and have experience in taking credited co-curriculum subject. However, students who were absent and away from the campus for their clinical posting during the study were excluded.

A total of three parameters were measured in this study namely academic performance, generic skills and stress level. All subjects were asked to complete a self-administered questionnaire consist of a few sections regarding socio-demographic background, academic performance, generic skills and stress level. The academic performance was measured using Cumulative Grade Point Average (CGPA), the generic skill was measured using adapted version of generic skills questionnaire from Esa *et al.*[5] and stress level was measured using Depression Anxiety and Stress Scale (DASS 21-items). The results were then analysed using SPSS statistic software version 22 (IBM).

RESULTS

Descriptive of demographic data and characteristic of respondent on generic skills and stress level: The demographic characteristic of the participants are listed in Table 1. A total of 116 participants were sampled, with majority of the participants are female (n = 101). The mean (SD) age of the participants was 20.64 (1.392). Most of the participants are Malay students (n = 92), followed by Chinese (n = 14), Indian (n = 5) and others (n = 5). Ninety seven students were from second year and the rest were from the third year students. The 64.7% of the participants were from Diagnostic and Allied Health Science and only 35.3% were from Healthcare Science. Most of the participants were Nutrition Science students (n = 41) and 25 students each from Biomedical Science, Diagnostic Imaging and Radiotherapy and Environmental Health Science.

Table 2 shows, about two quarter of the respondent (61.2%) reported that credited co-curriculum program is somehow preparing adequately for employment. Whereas, 42.2% of the student rate the employment potential of the credited co-curriculum program is fair and about 34% of the students rate credited co-curriculum giving them good employment potential (Table 3).

Generic skills score was determined by using adapted questionnaire from Esa *et al*.[5]. The score been classified into three categories, which is "Good", when the score is equal or more than 75 percentile (total score is equal or more than 240/320), "Moderate" is between 50 and 74 percentile (total score within 160-239/320), whereas the "Low" generic skills is lower than 50 percentile (total score is below than 160). After analysing the scores, finding shows more than two thirds of students having a good score and only about 30% of the students having moderate and low generic skill score.

According to DASS 21-items scoring system, stress can be divided into several levels, which is Normal, Mild, Moderate, Severe and Extremely severe. Referring to Table 4, about 60% of the students are normal, whereas, about 15% of the students having mild stress because of the credited co-curriculum program. Another 12% of the students experienced moderate, severe stress level (about 13%) and only one student having extremely severe stress level when undergo the credited co-curriculum program.

Table 1: Socio-demographic data of the students

Characteristic	No.	%
Gender		
Male	15	12.9
Female	101	87.1
Race		
Malay	92	79.3
Chinese	14	12.1
Indian	5	4.3
Others	5	4.3
Year of study		
2nd year	97	83.6
3rd year	19	16.0
Programme		
Biomedical science	25	21.6
Nutrition science	41	35.3
Diagnostic imaging and radiotherapy	25	21.6
Environmental health science	25	21.6

Comparison of generic skills and stress level among undergraduate students between different programmes: A one way ANOVA was conducted to compare generic skills among undergraduate students between four different programmes. Kolmogorov-Smirnov showed the data was normally distributed for Biomedical Science, PDR and EVH programmes, with $p>0.05$. The results was not significant, indicating that generic skills among undergraduate students were not influenced by different programme, $F(3,112) = 0.22$, $p = 0.882$ (Table 5).

A one way ANOVA was conducted to compare stress level among undergraduate students between different programmes. Kolmogorov-Smirnov and skewness ratio showed the data was normally distributed for all programmes. The results were not significant, indicating that generic skills among undergraduate students were not influenced by programme, $F(3,112) = 2.353$, $p = 0.076$ (Table 6).

Interaction between generic skills and stress level towards the academic performance: A two way between group analysis of variance (ANOVA) was used to investigate the interaction between generic skills and stress level towards the academic performance.

There was no interaction between stress level and generic skills on academic performance, $F(3,92) = 1.159$, $p = 0.330$. Figure 1 shows the nature of interaction. The main effects of generic skills on academic performance also not significantly different, $F(3,92) = 0.078$, $p = 0.925$.

Prediction of relationship between generic skills and stress on academic performance: Multiple Linear Regression (MLR) was performed to predict the relationship between generic skills and stress on academic performance. The finding shows, stress and generic skills accounted for 0.7% of the variability in academic performance (CGPA), $R^2 = 0.007$, adjusted $R^2 = -0.013$, $F(2,96) = 0.350$, $p = 0.705$. Unstandardized (B) and

Table 2: Opinion of the students regarding to credited co-curriculum program in preparing for employment

Opinion of credited co-curriculum program in preparing for employment	Very little (%)	Little (%)	Some (%)	Much (%)	Very much (%)
Do you feel that credited co-curriculum program is preparing you adequately for employment?	1.7	9.5	61.2	25	1.7

Table 3: Opinion of the students regarding employment potential from credited co-curriculum program

Opinion of employment potential from credited co-curriculum program	Very poor (%)	Poor (%)	Fair (%)	Good (%)	Very good (%)
How would you rate the employment potential of your credited co-curriculum program?	5.2	15.5	42.2	33.6	3.4

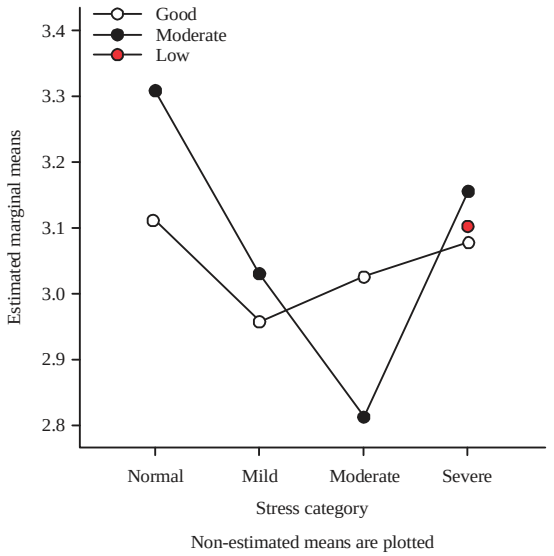

Fig. 1: Interaction between stress level and generic skills on academic performance

Table 4: Stress level and score of the students

Stress level	Stress score	Percentage (%)
Normal	0-7	60.3
Mild	8-9	14.7
Moderate	10-12	11.2
Severe	13-16	12.9
Extremely severe	17+	0.9

Table 5: Comparison between generic skills and programme of the students

Variables	No.	Mean total generic skills (SD)	F-stats[a]	p-value
Programme				
Biomedical Science	25	246.60 (13.601)	0.22	0.882
Nutrition Science	41	248.71 (24.623)		
PDR	25	243.73 (18.527)		
EVH	25	246.87 (25.257)		

Table 6: Comparison between stress levels and programme of the students

Variables	No.	Mean total stress level (SD)	F-stats[a]	p-value
Programme				
Biomedical science	25	6.48(3.318)	2.353	0.076
Nutrition science	41	6.39(3.231)		
Diagnostic imaging and radiotherapy	25	8.72(4.392)		
Environmental health	25	7.52(4.283)		

Table 7: Relationship between generic skills and stress level on academic performance amongst undergraduate student

Variables	B (95% CI)	β	sr^2
Generic skills	-0.001 (-0.004, 0.002)	-0.052	0.003
Stress	-0.006 (-0.24, 0.011)	-0.730	0.006

standardized (regression coefficient and squared semi partial (or 'part') correlation (sr^2) for each predictor in the regression model as reported in Table 7.

DISCUSSION

Generic skills that are implemented in the credited co-curriculum course program at university get a good overall score by the 2nd and 3rd year students. Personal skills, communication skills and problem solving skills are really important in generic skills because it have a major impact on the students, especially careers[13]. This showed by questionnaire data that majority students surveyed felt credited co-curriculum programme makes them moderately prepared for future employment. From the survey responses, there is a strong emphasis about the interests of interactive group learning in university for the development of generic skills.

The issue of employability of graduates is the biggest challenge facing institutions of higher learning[1]. While concentrating to the generic skills, the employer also want recruit the graduate with high CGPA. These might increase stress level of the students. From the study, majority stress level of the student is normal and considered as stress positively. Only one student felt extremely severe stress. Students agreed that stress motivated them for better academic performance[11]. To some extent, stress level might vary in time to time due to several causes such as financial problem, health problems or loss of close family members or friends[11]. It depends on how an individual confront with the stress.

This finding shows no significant difference obtained in generic skills and stress level between different programmes in Kuala Lumpur. Majority of the students agreed that the area of generic skills enhancement in credited co-curriculum course was important for their future employment with 69.8% of the student get good generic skills scores. However, most of the students gave fair rating for employment potential from the credited co-curriculum course. This would suggest for the continuity of the credited co-curriculum course in the curriculum but the content of the subject might need to improve based on the student's need for future employment.

Overall, the findings illustrate a weak correlation between generic skills and stress level and academic performance. However, the selection of student does not include all the students. This study is supported by another study which stated that there is a weak correlation between generic skills and GPA (student's academic performance at college) at Japan universities[14]. Higher learning institution or universities are the most suitable place to build and enhance students' generic skills.

The finding of the study is in congruence with finding of the previous study that the higher level of stress is associated with poor academic performance in first year medical students[15]. Meanwhile, another study reported that student with high and severe stress level were observed to have a higher CGPA among UKM undergraduate medical students[11]. It is suggested that larger, multi-institutional and longitudinal studies to be carried out to find its effect on students' academic performance. To solve problem of poor academic performance, the students may need to identify sources, levels of stress and a coping strategy to improve the poor performance.

CONCLUSION

This study illustrates the presence of a weak negative correlation between stress level and academic performance. This study also reveals that there is no significant correlation between generic skills on academic performance among 2nd and 3rd year undergraduate students of university in Kuala Lumpur. The results also show that there is no significant difference in generic skills and stress level between programmes. This study adds to the body of knowledge concerning students' academic performance, generic skills and stress levels among undergraduate students.

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SIGNIFICANCE STATEMENT

- Generic skills are viewed as important in higher education, which is referred to range of quality of graduates and these generic competencies are important for enabling Malaysian graduate employees to transfer learning from classroom to the workplace for success in work performance
- Hence, this study is important to investigate what the students perceive are their generic skills and its relationship with their academic performance and stress level
- This study will contribute to increase the motivation of university student to take generic skills course in higher education

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