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Self-esteem and academic performance relationship amongst the second year undergraduate students of Universiti Kebangsaan Malaysia, Kuala Lumpur Campus

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Abstract

A cross sectional study was carried out to examine the relationship between self-esteem and students' academic performance among the second year undergraduates of Faculty of Health Sciences and Faculty of Medicine, UKM session 2010/2011. Undergraduates (n= 220, 110 males) were selected via systemic random sampling, responded on survey domains regarding their self-esteem, body area satisfaction, stress and demographic data using 3 scales – Rosenberg Self-Esteem Scale (RSES), Perceived Stress Scale (PSS) and Body Area Satisfaction Scale (BASS). The study has found that the mean score for self-esteem scales was 17.44 ± 3.44 with score ranged from 0 to 30 (RSES); the mean of CGPA was 3.022 ± 0.41 . The correlation between self esteem and academic performance were analyzed using Pearson's correlation and linear regression, results showed that students with higher self-esteem perform better in their academic ($p < 0.0005$, $r = 0.32$); self esteem score and body area satisfaction was significant ($p < 0.05$, $r = 0.016$) and self esteem and stress is inversely significant ($p < 0.05$, $r = -0.198$). In conclusion, self-esteem is one of the key factors in affecting an individual's academic performance, more significant than other contributing factors including stress and body image.

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Keywords: self-esteem; academic performance; stress; body image satisfaction

1. Introduction

Self-esteem refers to a degree to which a person values himself or herself, the summation based on conscious self-evaluative thoughts and feelings or in short, as a global emotional placement of self (Robin *et al.*, 2001; Baccus

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et al., 2003; Frost & McKelvie, 2005; Robert 2010). It can be either positive (high self-esteem) leads to greater happiness or negative (low self-esteem) and self-doubt, potentially leads to depression (Baumeister *et al.*, 2003). According to Aryana (2010), students with high academic achievement tend to feel more confident in contrast to those who lack confidence in them achieves less. There had been many studies on this self esteem and academic achievement relationship has been carried out previously but the topic remains debatable and inconclusive (Naderi 2009). Though it is identified as a crucial factor in affecting student's academic achievement has been singled out (Aryana 2010); there are other potential influential factors such as gender (Dixon & Kurpius 2008; Teoh & Nur Afiqah 2010; Pritchard 2010), body image (Tyler 2006) and stress level (Hughes, Priskell & Sales 1996; Agolla & Ongori, 2009). According to a meta-analysis done by Gentile et al. (2009), self-esteem differences between men and women in academic show no significant gender differences. The positive self-image will contribute to the person's self-esteem, which include body satisfaction and Body Mass Index (BMI). Numerous studies found that women with higher Body Mass Index (BMI) scores had a lower self-esteem and judged their own bodies more critically than those with a low body image score (Ackard et al 2003; Forrest & Stuhldreher 2007; Weaver & Byers 2006). The major causes of stress among students includes academic workload, inadequate resources, low motivation and poor academic performance, overcrowded lecture halls, and uncertainty of getting jobs after graduation from the university however Espenshade et al. (2005) reported that stress has a negative but insignificant association with cumulated grade and no relationship with college credits.

Self esteem affects the thinking process, emotions, desires, values and goals in a person (Sandra 2009), developed when the acceptance of others and their personal and group contributions are recognized and applauded, especially in a multi-culturally diverse world, it is a key ingredient that affects the level of proficiency in all fields of endeavor (Redenback 1991). The core idea of Self -Esteem Theory is that everyone feels that they has an intrinsic "value" and always try to improve that value. Self esteem can be increased by praise and be built when the rewards in the form of praise are given for real achievement. In addition, self esteem can also be developed by achieving great successes and it can be maintained by avoiding failures. Despite this, there was only a modest correlation discovered between self-esteem and academic performance mentioned in previous studies many of which concluded that academic achievement and self-esteem are positively correlated ($p < 0.01$) (Aryana 2010; Sandra 2009; Habibollah et al. 2008); though Pullmann & Allik (2008) proved the relationship between total self-esteem and academic achievement was not statistically significant, and low self-esteem does not necessarily signal a poor academic performance.

According to Teoh and Afiqah (2010), the gender was not significantly associated with self esteem amongst young Malaysian adults on the contrary to reports showing females students self esteem declines more rapidly than the males (Heaven and Ciarrochi 2008) and greatest significance is seen during late adolescent (Kling et al. 1999). In another study that has been conducted on Iranian undergraduates in Malaysian universities using Persian version of Rosenberg Self Esteem Scale (RSES), shows that there was significant gender difference in self esteem and that the level of self esteem in females were higher than males (Naderi et al. 2009).

This study specifically aimed to unveil the relationship between self-esteem and academic performance among UKM undergraduates. It will reveal the identification of factors affecting students' self-esteem, for instance; demographic data (gender, faculty and parents' highest educational level), stress and body image (body satisfaction and Body Mass Index, BMI). The study also identifies other contributing factors affecting students' academic performance such as stress and age. In the wider perspective, the result of this study will be use as inputs for the departments and the Faculty of Allied Health Sciences to better manage their own programs in order to enhance the students' academic performance. Thus, this study was aimed to explore the level of self esteem amongst the UKM Kuala Lumpur Branch second year undergraduate students and to determine the corollary factors on academic performance stemmed on the variables related to the formation of self esteem of the students.

2. Methodology

This study employed a cross sectional non-intervention study using a set of questionnaire, set out as part of a Biostatistical course, NB3363 at Faculty of Health Sciences. The study population consisted of all second year undergraduates of Faculty of Health Sciences (FSK) and Faculty of Medicine (FPER), Universiti Kebangsaan Malaysia (UKM) 2010/2011 session.

A complete namelists of the second year undergraduates from all the faculties based in Kuala Lumpur campus were obtained and divided into two strata according to the gender (stratified sampling) before an equal number of male and female students (n=110) were chosen by using systematic random sampling with an exclusion criteria, namely, the second year undergraduates from Forensic Science Program, FSK, UKM on the same session . By using KrejCie and Morgan (1970) with the assumption of a 10% drop-out rate, the sample size required was 245 subjects. A pilot study was carried out to test the strength, validity and realibility of the questionnaire on random second year Faculty of Pharmacy undergraduates of since they are excluded but have similar characteristics as our subjects. This questionnaire consists of 4 parts, namely Personal Information (Part A, includes name, gender, faculty, parents' education level, weight, height and Cumulative Grade point Average (CGPA), BMI is calculated from weight and height data), Self Esteem (Part B, Rosenberg Self-Esteem Scale (RSES)), Stress (Part C, Perceived Stress Scale, (PSS)) and Body Area Satisfaction (Part D, Body Area Satisfaction Score (BASS) by Cash, 2000). All chosen subjects signed written consent forms.

3. Results

There are a few statistical tests that are carried out in this study such as Independent T–test used to compare self-esteem score, stress score, body satisfaction score, and Body Mass Index (BMI) against demographic factors which are faculty and gender. Moreover, one way independent ANOVA test was used to compare self-esteem score, stress score, body satisfaction score and self-esteem score against parents' highest education level. The Pearson Correlation and Spearman's correlation was used to correlate all the relationship between self esteem and all the confounding factors (CGPA, stress score, body satisfaction score and Body Mass Index (BMI). Last but not least, the multiple regression tests were used to determine the effect of self-esteem and stress on CGPA. The demographic data were summarized in Table 1.

Table 1. Demographic data of the second year undergraduates of Universiti Kebangsaan Malaysia Kuala Lumpur Campus (n=220) that are involved in this study.

Variable	No of Respondent (n)	Percentage (%)
Gender		
Male	110	50
Female	110	50
Faculty		
Faculty of Health Science	120	54.5
Faculty of Medicine	100	45.5
Parents' Education Level		
Never	6	2.7
Primary school	36	16.4
Secondary school	103	46.8
Tertiary education	75	34.1

Table 2. Mean and standard deviation of the scales used among the second year undergraduates of Universiti Kebangsaan Malaysia Kuala Lumpur Campus (n=220) that are involved in this study.

Variable	Mean	Sd.
CGPA	3.02	± 0.41
Rosenberg Self-Esteem Scale	17.44	±3.44
Perceived Stress Scale	19.8	±4.09
Body Area Satisfaction Scale	29.15	±7.48
Body Mass Index (BMI)	20.77	±2.96

Based from the responses from the questionnaires, the mean with the standard deviation of the scales and CGPA were gathered from the questionnaire (Table 2), the data were then analyzed using *Welch's t* test was used to compare self-esteem, CGPA, body area satisfaction and BMI score toward demographic data (gender) due to the unequal variance that we found out from Levene's test (Table 3).

Table 3. Correlation for self esteem and confounding factors

Variable	Mean	Sd.	t	p
Self-esteem on Gender				
Male	17.58	±3.892	0.626	0.011
Female	17.29	±2.941		
CGPA on Gender				
Male	2.94	±0.433	-3.000	0.003
Female	3.10	±0.370		
Body Area Satisfaction on Gender				
Male	30.48	±8.387	2.678	0.008
Female	27.82	±6.203		
BMI score on Gender				
Male	21.40	±3.057	3.186	0.002
Female	20.15	±2.758		

*p<0.05, significant correlation

One way independent ANOVA test was used to compare self-esteem score, stress score, body satisfaction score and self-esteem score against parents' highest education level (Table 4, F=3.333, p=0.020). The student's stress level is affected by the parent's highest education level; significant difference (p<0.021) between parents never been to school and parents that and whose parents went to secondary school. Post hoc analyses with Turkey's HSD revealed that there is significant difference between parents never go to school and parents that go to primary school and also parents never go to school and parents go to secondary school.

Table 4. Post Hoc Test – Tukey test Correlation of self esteem and parents' education background

Parents' Highest Education Level		Mean Difference	Std. Error	Sig.
Never attended school	Primary School	5.083	1.775	.024
	Secondary school	4.916	1.691	.021
	Tertiary education	4.120	1.708	.078

The Pearson and Spearman's correlations were used to correlate all the relationships between self esteem and other confounding factors (CGPA, stress score, body satisfaction score and BMI). The correlation between self esteem score and body area satisfaction score is classified as weak positive ($r=0.163$, $p<0.2$; Table 5); weak negative correlation between self esteem and stress ($r=-0.198$ $p<0.005$). Spearman's rho correlation was used to find the correlation between self esteem score and Body Mass Index (BMI) because the data for BMI is an ordinal data. Spearman's rho indicated there is a weak positive relationship between self esteem score and ranked Body Mass Index (BMI), $r=0.051$ but the correlation is not significant.

Table 5. Correlation for self esteem and confounding factors

	Correlation coefficient, r	p
Self esteem and body area satisfaction	.163	.016
Self esteem and stress	-.198	.003
Self esteem and Body Mass Index (BMI)	.051	.453

* $p<0.05$, significant correlation

Table 6. Multiple linear regressions

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	1.784	.201		3.649	<.0005
Stress	.023	.006	.232	5.902	<.0005
Self esteem	.045	.008	.375	8.864	<.0005

Multiple linear regression was performed to estimate CGPA (Table 6) score that can be accounted by stress and self-esteem. Mahalanobis distance and Cook's distance were used to identify the presence of outliers. The Mahalanobis distance did not exceed the critical χ^2 for $df = 2$ (at $\alpha=0.001$) of 13.82 for any cases in the data file (maximum Mahalanobis distance for this study is 10.385). The maximum Cook's distance is 0.033; indicating absence of outliers. Third, the tolerances for both stress and self-esteem is high, which is 0.961 ($TOL>0.2$), hence both stress and self-esteem are not collinear. In combination, stress and self-esteem accounts for a significant 16% of the variability towards CGPA score, $R^2 = 0.16$, adjusted $R^2 = 0.152$ which shows a large effect. The equation for the model is: CGPA score = 1.784 + 0.023 (stress) + 0.045 (self esteem).

4. Discussion

The results from this study indicated that there is a significant moderate positive correlation between self esteem and CGPA the second year undergraduates of Faculty of Health Science and Faculty of Medicine, UKM session 2010/2011. This finding concurs to previous report (Aryana, 2010; Habibollah et al. 2008, Pullmann & Allikk (2008). The weak positive correlation is supported by published study which have shown that the association

between these two variables was modest possibly cause by, cognitively better developed and academically successful students have a more critical outlook on themselves, and the students with more modest academic abilities compensate their academic lack by uplifting their general self-esteem (Pullmann & Allik, 2008).

No significant difference in between gender and self-esteem were observed in our results. This concurs to previous researches that also showed no significant difference between gender and self esteem (Dixon & Kurpius 2008; Teoh & Nur Afiqah 2010; Aryana 2010). Thus, the lack of self esteem differences between genders was believed associated with other factors such as environment, social, cognitive and biological. Parents' highest education levels do not play a role in self esteem of the students either.

The output of this data shows that, there is a difference in measure between genders on CPGA with female students academic achievements are higher as compared to the males. Body dissatisfaction usually used to describe an individual's body image. It is an intense, negative distortion of one's body image and it has found to be much greater in females than in males (Hargreaves & Tiggemann 2004). Males with low body image often perceive themselves as too thin, whereas females with low body image perceive themselves as 'too heavy'. Lack of muscularity is the main cause of body dissatisfaction in men, in females, lower body image influenced by a variety of factors, such as body mass, social comparisons, and appearance conversations with friends (Carlson 2004). Besides, result shows that there is a significant different between male and female's BMI score. It may due to male students prefer to be broader and more muscular built whereas female students prefer to have slimmer body and lower body weight (Brodie et al (1991); Furnham et al. 2002).

Next, this study also revealed that stress can be influenced by parents' highest education level possibly due parents with a higher education level can relate academically to their children and help them to cope with stress and students whose parents never been to school have higher stress level as compared to students whose parents have been to school to fit in the social obligations and pressured to outperform their parents academically. Our results also showed very weak significant positive correlation between body area satisfaction and self esteem. Based on the background studies, we found that there are few studies also showed that there is a positive correlation between body satisfaction and self esteem. (Tyler 2006, Mellor et al 2010). Thus, higher self esteem was associated with body satisfaction (Mellor et al, 2010). If the individual is strongly dissatisfied with him or her body, it will lower the body image and eventually lowering self esteem (Lowery et al. 2005). Based on these results, the correlation between self esteem score and stress score was classified as very weak negatively correlated. which signify that self esteem is not highly dependent on stress but also on other factors that can affect self esteem.

The relation between stress score and CGPA, revealed a very weak positive relationship between these two factors. According other studies carried out by other local college students (Womble, 2001 and Anna et al., 2005); correlation between academic performance and stress is insignificant. In contrast we report significant correlation between these two factors; most probably because we used larger sample size compared to other studies. This weak positive correlation between stress score and CGPA of the students could possibly contributed by the requirement of these two faculties in which students have to attain minimum CGPA of 3.00 to be able to register more than 20 credit hours per semester, in order complete their degree.

Lastly, we report very weak negative correlation between self esteem and stress. In line with the result obtained, depression state, anxiety state, body image and academic performance are cited as factors that have stronger relationship with self-esteem whereas perception of high demands, sleep disturbances, and poor social support played a crucial role in the prediction of stress symptoms (Aryana 2010; Tyler 2006). In general, this study revealed that self esteem greatly affects academic performance in comparison to stress. The findings from this study contribute to the Faculties to better manage programs to enhance students' self-esteem, by elevating one's self esteem; it indirectly helps to improve one's academic performance.

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