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Selected Health Determinants and Academic Performance of Undergraduate Students of University Putra Malaysia

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Abstract - Introduction: Academic performance of university student impacts their future educational attainment and health. The objective of the study was to determine the relationship between the selected health determinants and academic performance of undergraduate students of Universiti Putra Malaysia.

Materials & Methods: An analytical cross sectional study was conducted among undergraduate students in Universiti Putra Malaysia. Undergraduate students were chosen by systematic random sampling based on the list of undergraduate students. A self-administered pre-tested questionnaire was used to collect data on health related behavior and academic performance.

Results: There were 9,852 undergraduates' population for 2011 and all the entire 1314 students completed the questionnaire (672 females and 642 males). The response rate was 100%, the mean age of the respondents was 21.89 and standard deviation is 2.208 years. The sample comprised of 76.7% Malays, 9.8% Chinese and 13.5 % Indians. In terms of academic performance, measured through CGPA showed that 40.7% of the respondents gained below 3.00, 39.5% obtained 3.01 to 3.50 only 19.6% have good CGPA ranging from 3.51 to 4.00. The majority of the respondent (79.5%) agreed that having good grades is very important. Based on body mass index (BMI) 54% or (709) respondents have normal body weight and only 6.2% respondents were obese. There is no significant difference in the mean of academic performance score for males (M=3.22, SD=.371) and female students (M=3.23, SD=.62). There was significant relationship between religiosity, subjective health status, socio economic perception and academic performance ($r=.123$, $P < 0.01$). Only three predictor variables were significant in explaining academic performance namely: religiosity ($p > .001$), health status ($p < .007$) and physical activity ($p < .020$).

Conclusion: This research seeks to contribute to the evidence based on the importance of health on academic performance of the particular university students. The findings from the research support the relationship between the selected health determinants and academic performance of the university students namely religiosity, health status and physical activity.

Keynotes : academic performance, health determinants, religiosity, physical activity, undergraduate university students.

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I. INTRODUCTION

Good academic performance is an important goal for teachers and parents alike as youth face adulthood and an increasingly competitive job market that requires advance learning skills. During adolescence, intellectual, physical and emotional development is critical. Moreover, many of the behaviors initiated during adolescence may be important determinants of subsequent behaviors (1). Health related behaviors are especially important because they may affect not only development of disease or disability but also intellectual development. Substance use is a major concern due to high usage rates, documented harmful health effects, and evidence that it contributes to academic failure (2). Previous studies have shown that low academic achievers are more likely to smoke cigarettes, drink alcohol and use marijuana and other illicit drugs (2).

In addition to the adverse physiological effects of obesity which is partly attributed to physical inactivity, research studies have also demonstrated that physical inactivity adversely influences academic performance (3).

Thus, this study aims to determine the relationship between selected health determinants and academic performance of undergraduate university students, Universiti Putra Malaysia.

II. MATERIALS AND METHODS

An analytical cross sectional study was conducted among undergraduate students in Universiti Putra Malaysia. A self administered pre-tested questionnaire was used to collect data on health related behaviors and academic performance. Subjects were selected from the students' list by systemic random sampling based on inclusion and exclusion criteria. The questionnaire was validated; Cronbach's Alpha reliability test for all variables indicated good internal consistency with reading ranging from .61 - .87.

Weight and height was measured with students wearing light clothing and no foot wear. Weight was measured using a digital weighing scale (model 880,Seca Hamburg, Germany) calibrated to the nearest

0.1kg and the student were positioned at the center of the weighing scale so that their weight will be evenly distributed. Height was measured using a portable measuring unit (Seca body meter, model 208, Seca Hamburg, Germany) calibrated to the nearest 0.1cm with the students standing with their heels together and their heads positioned in horizontal plane, with their heels, buttocks, shoulder blades and heads against the back of the Seca body meter.

CGPA was obtained from the students based on the last examination; statistical package for social sciences (SPSS) version 20 was used for analysis of data with $p < 0.05$ was taken as significant. An independent-sample t-test, correlation and multiple logistic regressions analysis were conducted.

Ethical clearance was obtained from the Medical Research Ethics Committee of the Faculty of Medicine & Health Sciences, UPM. Anonymity and confidentiality issues were adhered.

III. RESULTS

There were 9,852 undergraduates' population for 2011 and the entire selected 1314 student completed the questionnaire (672 females and 642 males). Response was 100%, the mean age of the respondents

was 21.89 and standard deviation is 2.208 years. The sample comprised of 76.7% Malays, 9.8% Chinese and 13.5 % Indians. In terms of academic performance, Table 1 on CGPA showed that 40.7% of the respondents gained below 3.00 CGPA, 39.5% obtained CGPA ranging from 3.01 to 3.50 only 19.6% have good CGPA ranging from 3.51 to 4.00. The majority of the respondent (79.5%) agreed that having good grades is very important.

Table 2 shows 54% or (709) respondents have normal body weight and only 6.2% respondents were obese. An independent-sample t-test was conducted to compare the mean academic performance score for male and female undergraduate students showed no significant difference in the mean academic performance score for male ($M=3.22$, $SD=.371$) and female ($M=3.23$, $SD=.62$). Correlation analysis found significant relationship between religiosity, subjective health status, socio economic perception and academic performance ($r=.123$, $P < 0.01$).

In table 3, multiple logistic regressions were used. There were three variables predicting academic performance. The three predictor variables were religiosity ($p < .001$), health status ($p < .007$) and physical activity ($p < .020$).

Table 1 : Cumulative grade point average (CGPA) score of respondents

	Frequency	Percent	Mean	SD
Academic performance			3.23	.367
< 3.00 (low)	537	40.7		
3.01-3.50 (moderate)	519	39.5		
3.51-4.00 (high)	258	19.6		
Total	1314	100.0		

Table 2 : Scores of body mass index (BMI) of respondents

	Frequency	Percent	Mean	SD
BMI			21.64	4.708
Underweight	356	27.1		
Normal weight	709	54.0		
Overweight	168	12.8		
Obesity	81	6.2		
Total	1314	100.0		

Table 3 : Correlation between independent variables and academic performance

	Religiosity	Subjective health	Health Status	Socio-Economic	Home Environment	Academic performance
Religiosity						
Subjective Health	.287**	1				
Health Status (BMI)	.018	.046	1			
Socio-Economic	.244**	.178**	.066*	1		
Home Environment	.396**	.172**	.105**	.385**	1	
Academic Performance	.123**	.085**	.072**	.056*	.065*	1

** Correlation is significant at the 0.01 level

* Correlation is significant at the 0.05 level

Table 4 : Determinants for academic performance among undergraduate students in Universiti Putra Malaysia

Model	B	Std. Error	Beta	t	Sig.
(Constant)	2.862	.070		40.719	.000
Religiosity	.054	.017	.101	3.230	.001*
Subjective Health	.027	.015	.052	1.785	.074
Health Status	.006	.002	.076	2.715	.007*
Socio-Economic	.021	.019	.034	1.120	.263
Home Environment	.004	.020	.007	.203	.839
Smoking Habit	.067	.046	.047	1.448	.148
Alcohol Consumption	-.086	.059	-.048	-1.459	.145
Physical Activity	.049	.021	.067	2.329	.020*

Notes: R = 0.170, R² = 0.029, Adj. R² = 0.023; F = 4.778, P = 0.0001, significant p < 0.05

Table 5 : Association between alcohol consumption of respondent and their academic performance

Alcohol Consumption Classification	Academic performance (CGPA)			TOTAL
	< 3.00	3.01-3.50	3.51-4.00	
Alcohol Consumption (No)	514 41.1%	496 39.6%	241 19.3%	1251 100.0%
Alcohol Consumption (Yes)	18 31.0%	22 37.9%	18 31.0%	58 100.0%
TOTAL	532 40.6%	518 39.6%	259 19.8%	1309 100.0%

Likelihood Ratio Chi-square = 4.868 df = 2 P-value = 0.088
Cramer's V = .064, % cell with expected count less than 5 = 0.0%

IV. DISCUSSION

The study examined the factors that are important for the students' satisfaction with their academic performance, their demographic variables, health status and health behavior, and the three indicators of their academic performance. Among the students' academic performance, health status and risk behaviors are cyclically interdependent. This research links these various features together in order to capture the wider landscape of university students well being, educational and achievement.

With regards to academic performance, student exhibited medium to high satisfaction with their academic performance. This is in agreement with the other survey, which found 79.5 % of the students reported that it is very important to have a good grade at school (4). There were also no gender differences in the academic performance in support of the study hypothesis. (4) Found no gender difference in a study of one UK University and (5) reported gender differences in only one out of 12 satisfaction questions that are inquired about in the UK.

Majority of the students in this study perceived their health as good to excellent, and kept an eye on their health. Perceived health awareness was associated either with the student importance of good grade or how they rated their own academic performance. Linkage between health and well-being has been acknowledged by researchers (6) suggesting the need for quality program at university that takes into accounts that put

health as an important factor for good academic performance.

Studies have also found that poor academic performance was associated with compromising behaviors, physical, mental and emotional problems (7) but this research did not support such link where alcohol consumption was not significantly different with academic performance (Likelihood Ratio χ^2 (2, N = 1309) = 4.868, p = 0.088).

Majority of the students who do not take alcohol obtained CGPA lower than 3.00 and only a small percentage of them obtained CGPA between 3.51- 4.00. In contrast, students who consume lower amounts of alcohol obtained CGPA lower than 3.00 and slightly high percentages were students who get CGPA 3.51- 4.00., therefore the magnitude or strength of relationship between alcohol consumption, smoking and academic performance were not correlated. Nevertheless, the lacks of significant association between alcohol consumption, smoking and academic performance are conceivable. Studies have shown a positive relationship between academic performance and alcohol consumption (8), few studies have shown no correlation (9), and inverse relationship.

Less than half of the respondents are physically active while the rest admitted that they have not done any physical activity for at least 10 minutes continuously. This research found that most of the students are not meeting daily physical activity recommendations (10) demonstrating that the students are becoming sedentary during a significant portion of the time they spend in

school (11). Inactivity during university years may place the student at an increased risk for being overweight which could lead to obesity and place the student at risk for developing all of the chronic diseases associated with this condition (12). Researchers have shown that physical activity behavioral patterns are established in students during early in life (13). The time to proactively influence an active lifestyle in students is during early education, if the students start life with sedentary behavior they are likely to continue this pattern and to experience many adverse health consequences (12). In addition to the physiological effects of inactivity, studies have shown that physical activity plays an important role in the cognitive development of the student (3). Therefore physical activity becomes is an essential part of students' life early in age (14). According to the Malaysian National Health and Morbidity Survey III (15), Malaysians do not perform exercise, as nearly 70.0% of the adult did not exercise at all while only 11.6% of Malaysians were engaged in regular physical activities, such as jogging, team sports, brisk walking, and racket sports.

The results of the correlation analysis between the dependent variable and independent variable found significant relationship between religiosity and academic performance ($r = .123$, $p < 0.01$) indicating that with an increase in religious activity would increase academic performance. (16) Found that students who participate in religious activities were related to heightened educational expectation, and student who reported that they were more deeply religious obtained higher score in standardized test. Part of the result of this study indicates that university student's religiosity is an important contributing factor in good academic achievement. Counselor educators know, preach and practice the concept of advocacy for their students. A large part of the advocacy ultimately is to help students on a personal level recognize their assets, sources of support, and resources, both internal and external. When appropriate, including student and family religiosity as part of this discussion may be an important supportive factor in fostering good academic performance.

Secondly, results also showed a significant relationship between health status and academic performance where ($r = .085$, $p < 0.01$). (17) explored the relationship between health status and academic achievement in Icelandic school; they found body mass index (BMI) was strongly associated with academic achievement, followed by diet and physical activity. (16) Found that good health is essential for effective learning. Thirdly, the result found a significant relationship between socio economic status and academic performance where ($r = .065$, $p < 0.05$). In addition, an international study has shown that socio economic composition is a strong predictor of student academic achievement (18).

Another significant relationship was found between home environment and academic performance of

the respondents ($r = .065$, $P < 0.05$). (19) Showed that the quality of parents and home background of a student is able to predict the quality and regularity of the satisfaction and provision of the students' functional survival and academic needs. This connection between home and school is associated with the proximal processes that influence adolescent development. Home environment serves as a learning context (20) and parental academic philosophies often guide the choices they make at home for their adolescent children including (providing achievement related materials and supports). Parents play an important role in the development of adolescent school attitudes by influencing how they will view the importance of good academic achievements (21).

Based on the multiple linear regressions only three predictor variables were significance in explaining academic performance. This suggested that the three-predictor multiple linear regression model was supported by the research data. The three predictor variables were religiosity, health status and physical activity.

V. CONCLUSION

This research seeks to contribute to the evidence based on the importance of health on academic performance of the particular university students. The findings from the research support the relationship between the selected health determinants and academic performance of the university students namely religiosity, health status and physical activity.

VI. RECOMMENDATION

Healthy lifestyle is essential for students to achieve their full academic potential, mental growth, lifelong needs health and well-being. When students are not healthy they are unable to reach their full potential. University needs to strengthen the promotion of a healthy lifestyle that includes proper nutrition and exercise. The university can promote help healthy eating habits by emitting a consistent health messages and ensuring that healthy food choices are offered at school food courts. University authorities need to provide opportunities for students to receive education on good nutrition, importance of exercise and good health in school environment. University should also establish a committee that includes students to promote a healthy school atmosphere by focusing on students living a healthy lifestyle. University needs to make the commitment to offer quality food that provides the energy and nutrients students need to achieve their maximal potential. By offering a variety of healthy food in the school food courts, students will learn to enjoy many different foods and develop healthy eating habits. University authorities can show they are committed by ensuring that food staff is properly trained, the menu meets or exceed the nutrition standards set forth by dietary guidelines.

Students should be asked for their input before planning meals so that a variety of food can be offered that is not only nutritious but appealing to the students.

Due to the considerable amount of year's student spend at university, more attention needs to be paid on how they live their lives, food options that are available if they want healthy eating to become a normal lifelong behavior. University cannot ignore the important of supporting living a healthy lifestyle since 35 % of the students daily calories are consumed at school (22). More research needs to be done to show a correlation between diet, health and academic performance. Religiosity and spirituality are issues of increased interest to the counseling profession and have not been sufficiently studied. To better understand and support a student's academic development, it maybe be important to explore the role of religiosity on degree attainment. The results support a focus on health program that consider factors influencing academic performance of university students. Health promotion activities may have the ability to influence relevant predictors of educational achievement on university students and to public health, it also contribute to the core business of higher education learning.

A limitation of this study could be that the result was relied on a self reported data. The data analysis was based on a self administered questionnaire which was collected from the respondent. Hence, the reliability of the self reported data could be questioned because biases might occur due to underreporting and under estimating.

The result of this study might not represent all the population of undergraduate students in Universiti Putra Malaysia due to the fact that those in year one was excluded based on exclusion criteria of the study, thus may limit the generalization of findings to the large population.

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