

Height, Weight, Body Mass Index (BMI) and Academic Performance (AP) of University Students in Sri Lanka: With Special Reference to the University of Kelaniya.

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Abstract- This study will ease the unscientific belief that most parents and teachers have the overweight persons are sluggish, lazy and sleepy; therefore would not do well in academic programme at the university. This cross-sectional study investigated the relationship between academic achievement and body mass index (BMI) of undergraduate students at the University of Kelaniya, Sri Lanka. Researcher hypothesized that H1 -There is a relationship between BMI and Academic Performance. Actabit BMI calculator and Grade Point Average (GPA) scores were used to collect data. Researcher has collected responses from undergraduate students in faculty of social sciences and humanities. BMI was calculated from each student's height and weight recordings. Academic performance was determined by each student's cumulative university Grade Point Average. Researcher used cross-tabulation analysis, to identify the relationship between both categories. Chi-square test revealed significant differences in BMI and GPA. There is lower significant association between BMI and academic performance. Students in the normal BMI category had significantly GPA scores than students in the overweight category. Results from such studies could potentially change the way university administrators view nutrition and physical education. Therefore no basis to judge a student generally by body mass profile rather conducive learning environment and genetic endowments would continue to influence academic performance.

Index Terms- BMI, GPA, Academic Performance, Overweight.

I. INTRODUCTION

Modern world is rapidly developing at present. It seems a huge difference in economic, social, political, cultural aspects. People are adapted to various life styles with this huge change of the world. So many people seem to take their health for granted globally, many are afflicted with array of diseases and disorders arising from multifaceted causes. Modern man doesn't care about his health because of the busy life pattern. Various Organizations among the world have paid their attention to find out this matter. With this change of the word, overweight, underweight, and obesity have emerged as burning problems in the world. Obesity has become a serious

body mass profile problem today (WHO 2004). Obesity means having too much body fats and adipocytes. It is not exactly the same as being overweight. Scientists have become interested in measuring body fats percentages directly or by estimation using facilities and methods to evaluate body mass, especially on the sedentary individuals. One of these methods is the use of Body Mass Index (BMI). BMI is simply a numeric measure of a person's body "thinness" or "thickness", allowing health professionals to discuss underweight and overweight problems more objectively with their patients (sited by Flegal, Graubard, William & Gail, 2005) (U & Nkangude, 2014). Hendry and Gillies (1977) found obese students to be both socially and educationally disadvantaged. It has been reported that obese children and adolescents are also more likely to do less well academically, have poor job prospects and be socially isolated (Levine, 1987). The obesity has also proven to lead to mental and emotional problems, such as anxiety and depression (MD, 2006). The social (anti-fat bias) (Hendry and Gillies 1977) and psychological (Low self - Concept) consequences may lead to poor academic performance among obese adolescents.

They are studies on children that report no negative association between obesity and academic achievement (Freeman, 1990). There is some uncertainty regarding the effect of obesity on academic performance. The findings from earlier studies thus indicate that it is reasonable to expect that obesity impacts student's academic performance negatively, especially for adolescents. However, the results from previous studies are based on small sized samples and focused more on children and therefore, the inferences drawn by these studies may not be applicable to adolescents. Thus there is a need to conduct empirical studies to further examine the issue of obese and academic performance, as obesity among adolescents has become too visible to be ignored. Students, who are adapted to this competitive educational pattern from childhood, work hard with a great devotion and dedication to achieve higher education in universities. So many children were there childhood because of chasing after this dream and it is a tragedy in Sri Lanka now. We focus on undergraduates because it is easy to have an objective assessment of academic performance through the cumulative grade point system. Moreover, students at this age are less concern about their weight and may not likely take drastic decisions affecting their

weight. The use of BMI on the students was relevant as they have all the characteristics needed for its use which included homogeneity in environment, Food, Racial disposition and daily physical engagement. It is possible to think that weight may be endogenous to academic attainment.

II. RESEARCH METHODOLOGY

The type of research is to find answers to problems that are taken and in harmony with the purpose of this study, the types of research that are considered convenient survey research that will be used in this study is quantitative method that the survey studies or exploratory research for the purpose of exploration and clarification of a BMI and academic performance. There was to explain a number of variables relating to the problem and until examined with questioning building relationship between variables that exist. Therefore in a deductive approach was done hypothesis testing to establish and develop the study.

Sampling.

Primary data were gathered. Primary data were collected through a survey conducted in Faculty of Social sciences and Humanities, university of Kelaniya from Sri Lanka university field. All respondents in the sample will as bring full time university students. Data were collected from 449 undergraduate students in above faculty. The data sample will selected by systematic random method. Height (cm) and Weight (Kg) of each selected subject were measured using standard method as given by Jelliffe 1966 and BMI (Body Mass Index) was calculated for each one. Primary data is data obtained directly at the time we did the research, data sources obtained directly from the people or informants were intentionally selected to obtain data or relevant information with research problems. As for the primary data in the study are Data Collection Techniques Data collection techniques used in this study were Questionnaires.

Design and Procedure

This study is an experimental design. Participants were from a purposive sample of 449 students, ages 20 – 24, with 251 females and 198 males. All of them are university students from the Sri Lanka country with same hostel and dietary conditions. The A-very weighing scale was used for the measurement of the body weight of each subject, while standard meters was also used to measure the height of each subject. . The grade point average (GPA) for each students was collected from the academic branch report, official publications and web sites in university of Kelaniya .The template converts every examination score entered into GPA, based on which final classification of degree are based... The reliability coefficient of the instrument is .743 respectively. The data collected were arranged in line with WHO (2016)

body mass classification chart, while the students' academic performance as represented by GPA were ranked as follows.

Grade Point Average (GPA)

3.70 - 4.00 -	First class Honour
3.30 - 3.70-	Second class Honour -Upper
3.00 - 3.30-	Second class Honour-Lower
2.00 –3.00-	Pass

Body Mass Index

Below 18.5-	Underweight
18.5 – 25.00 -	Normal weight
25.00 - 30.00-	Over weight
30 Above-	Obese

The data was analyzed with descriptive statistics, chi square, and Cramer's V test analysis at .05 alpha levels.

III. RESULTS AND DISCUSSIONS

This study aimed To Explore the relationship between BMI and student Academic performance in the higher Educational sector, to understand BMI Levels in the Students and to understand Academic Performance in the University Students. There is no known comparative study from other Faculties in our University. The analysis of the data showed that BMI level and GPA of the Sample. 75 students were underweight(16.7%), 348 has normal weight(77.5%), 26 overweight(5.8%).On academic performance,69 students were in 1st class (15.4%) 254 in 2nd class upper(56.6%), 107 in 2nd class lower(23.8%), and 19 had pass(4.2%).The result also showed that there are significant difference in the BMI and AP of the students as the calculated chi square value of 29.06 was significant as $P.00 < .05$ at 6 degree of freedom. Also, the result revealed that there are significant difference in the students as the calculated Cramer's V value of .180 was significant as $P.00 < .05$ at 6 degree of freedom.

The findings of this Study that focused on Body weight and academic performance also report conflicting findings. While it conflicts with Sabia(2007) findings that weight lowers test scores, though only for girls, it supports Fletcher & Lehrer, (2008) and Kaestner& Grossman, (2009).who found no significant differences or effects of BMI on academic performance or productivity of workers.

IV. CONCLUSION

Therefore, we conclude that BMI is not related to academic performance, so there was a positive relationship between BMI and Academic performances of the university student's. It is there were more normal weight students in the university. And 2nd upper was the highest Academic Performance. Academic Performance were also indicated a nominal BMI range. Also that the study be continued longitudinally for subsequent sessions to compare trends in future in other parts of the world Based on the findings, most of university Students are in normal range but considerable quantities in underweight underscoring the need to intensify interventions focused on reducing and preventing obesity among university population

Table 1: Chi-Square Test

Chi-Square Tests			
	Value	df	Asymp. Sig. (2-sided)
Pearson Chi-Square	29.068 ^a	6	.000
Likelihood Ratio	36.536	6	.000
Linear-by-Linear Association	.167	1	.683
N of Valid Cases	449		

a. 3 cells (25.0%) have expected count less than 5. The minimum expected count is 1.10.

Symmetric Measures

	Value	Approx. Sig.
Nominal by Nominal Phi	.254	.000
Cramer's V	.180	.000
N of Valid Cases	449	

The study was for the conducted on 449 regular students of the Faculty of Social sciences and Humanities, university of Kelaniya. There are no comparative studies in the past years or in other Faculties to compare and contrast body mass profile findings obtained. BMI did not determine body fat %, but it places individuals in the BMI chart as to the degree of fatness, over fatness, thinness and extreme thinness. But Hensley, Erort and Stillwater (1982) found that girls had more BMI as from 12 years as they get into the pubertal stage before the boys and later found that by 14 to 16 years the boys' BMI became closer to the girls' BMI. Since this study did compare age by sex interaction, it could neither support nor contrast the findings of these authors these except that in males and females in this study had no significant BMI difference and they were not of the same age group.

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