AN ASSESSMENT AND COMPARISON OF BODY MASS INDEX AMONG SEDENTARY, MODERATE AND HIGHLY ACTIVE MALE STUDENTS

Manoj Kumar, Research Scholar,
Dept. of Physical Education,
Banaras Hindu University, Varanasi U.P.

Abstract

The purpose of the study was to assess and compare body mass index among Sedentary, Moderate and Highly Active male students from Banaras Hindu University Varanasi. 90 male students from Banaras Hindu University Varanasi were selected purposively. The age level of the subjects ranged from 18 to 28 years. The data was analyzed by applying Descriptive Statistics (Mean, Standard Deviation) and Analysis of Variance (ANOVA) technique to assess and Compare the body mass index among Sedentary, Moderate and Highly Active male students from Banaras Hindu University Varanasi. The level of significance was set at 0.05. There was significant difference found among Sedentary, Moderate and Highly Active male students from Banaras Hindu University Varanasi in relation to body mass index, as obtained F-ratio was 11.53, which was higher than the tabulated value of 3.11, at 0.05 level with (2, 87) degree of freedom. Significant difference was found among Sedentary, Moderate and Highly Active male students from Banaras Hindu University Varanasi in relation to body mass index. Sedentary Males students possessed greater/higher comparison to Highly Active Male students and Moderate Males students in relation to body mass index. In case of body mass index Significant difference was found between sedentary & moderate male; moderate & highly male students of BHU whereas found insignificant between sedentary & highly active male students of BHU and observed sequence of of performance was found Sedentary Males students > Highly Active Male students > Moderate Males students of BHU in relation to body mass index.

Keywords: Body mass index, Sedentary male, Moderate male and Highly Active male students

Introduction

The body mass index (BMI), or Quetelet index, is a measure for human body shape based on an individual's mass and height. Body mass index is defined as the individual's body mass divided by the square of their height.

Sedentary Male A sedentary lifestyle is a type of lifestyle with no or irregular physical activity. A person who lives a sedentary lifestyle may colloquially be known as a couch potato. It is commonly found in both the developed and developing world. Sedentary activities include sitting, reading, watching television, playing video games, and computer use for much of the day with little or no vigorous physical exercise. A sedentary lifestyle can contribute too many preventable causes of death. Screen time is the amount time a person spends watching a screen such as a television, computer monitor, or mobile device. Excessive screen time is linked to negative health consequences.

Moderate Male If you do exercise but get less than the 2 1/2 hours per week of the moderate aerobic activity that the Centers for Disease Control and Prevention recommends, you're at a moderate activity level. With aerobic exercise at a moderate intensity level, you breathe harder and deeper than at a sedentary level. You can't sing any tunes, but you can hold a conversation as you take a brisk walk, which is a good example of a moderate level exercise. After around 10 minutes of exercise, you should break into a sweat. Mowing your lawn, riding a bike on level surfaces and playing doubles tennis are examples of moderate exercises.

Highly Active Male Active living is a way of life that integrates physical activity into your everyday routines, such as walking to the store or biking to work. Active living brings together urban planners, architects, transportation engineers, public health professionals, activists and other professionals to build places that encourage active living and physical activity. One example includes efforts to build sidewalks, crosswalks, pedestrian crossing signals and other ways for children to walk safely to and from school, as seen in the Safe Routes to School program. Recreational opportunities (parks, fitness centers etc.) close to the home or workplace, walking trails and bike lanes for transportation also encourage a more active lifestyle. Active living is a combination of physical activity and recreation activities aimed at the general public to encourage a healthier lifestyle.

<u>Objectives of the Study</u>

To assess Body Mass Index of Sedentary, Moderate and Highly Active male students. And to compare Body Mass Index among Sedentary, Moderate and Highly Active male students.

Procedure and Methodology

Selection of Subjects

For the purpose of the study, 90 male students from Banaras Hindu University Varanasi were selected purposively. The age level of the subjects ranged from 18 to 28 years.

Criterion Measures

1. Height was measured in centimeter by stadiometer
2. Weight was measured in kilogram by weighing machine

Statistical Technique

To Assessment body mass index among Sedentary, Moderate and Highly Active male, Descriptive Statistics i.e. (Mean, Standard Deviation) was used. To compare body mass index among Sedentary, Moderate and Highly Active male, Analysis of Variance (ANOVA) was used and level of significance was set at 0.05.

Results of the Study

Findings of the Study

The findings pertaining to descriptive statistics and Analysis of Variance (ANOVA) for the body mass index from 90 male students (30 Sedentary, 30 Moderate and 30 Highly Active) of BHU have been presented in table No.1 to 3.

TABLE-1
DESCRIPTIVE STATISTICS OF SEDENTARY, MODERATE AND HIGHLY ACTIVE MALE STUDENTS OF BANARAS HINDU UNIVERSITY IN RELATION TO BODY MASS INDEX

Sedentary Male Students		Moderate Male Students		Highly Active Male Students	
Mean	21.87	Mean	19.30	Mean	21.80
Standard Deviation	2.05	Standard Deviation	2.06	Standard Deviation	2.88
Standard Error	0.38	Standard Error	0.38	Standard Error	0.53
Minimum	17.00	Minimum	15.59	Minimum	16.85
Maximum	26.17	Maximum	23.93	Maximum	29.54

It is evident from table - 1 that mean and standard deviation scores of Sedentary, Moderate and Highly Active male students of BHU in relation to body mass index have been found 21.86, 19.30 & 21.80, and 2.05, 2.06& 2.88respectively whereas Standard Error of scores was found 0.38, 0.36 & 0.51respectively

TABLE-2
ANALYSIS OF VARIANCE OF PROFESSIONAL MALE STUDENT FROM BANARAS HINDU UNIVERSITY IN RELATION TO BODY MASS INDEX.

Source of Variation	Sum of Squares	df	Mean Square	F-Value
Between Groups	128.59	2	64.30	11.53*
Within Groups	485.31	87	5.58	

* Significant at 0.05 level of significance F 0.05 (2, 87) = 3.11

Table- 2 revealed that there was significant difference among Sedentary, Moderate and Highly Active male students of BHU in relation to body mass index, as obtained F-ratio was 11.53, which was higher than the tabulated value of 3.11, at 0.05 level with (2, 87) degree of freedom. Since the one way analysis of variance was found significant in relation to body mass index, the LSD test was applied to find out the differences of the paired means among Sedentary, Moderate and Highly Active male students of BHU.

TABLE-3
POST HOC TEST (LSD) FOR THE PAIRED MEANS AMONG SEDENTARY, MODERATE AND HIGHLY ACTIVE MALE STUDENTS OF BHU IN RELATION TO BODY MASS INDEX.

Sedentary male students	Moderate male students	Highly Active male students	Mean Difference	Critical Difference
21.87	19.30		2.57*	
21.86		21.80	0.07	1.21
	19.30	21.80	2.50*	

Table- 3 revealed that there was significant difference between Sedentary and Moderate; Moderate and high active male students of BHU in relation to body mass index, as Critical Difference was 1.21, which was lower than the Mean Difference value and there was insignificant difference between moderate and Highly Active male students of BHU in relation to body mass index, as Critical Difference was 1.21, which was higher than the Mean Difference value.

The graphical representation of means among Sedentary, Moderate and Highly Active male students of BHU in relation to body mass index has been presented in figure No.1
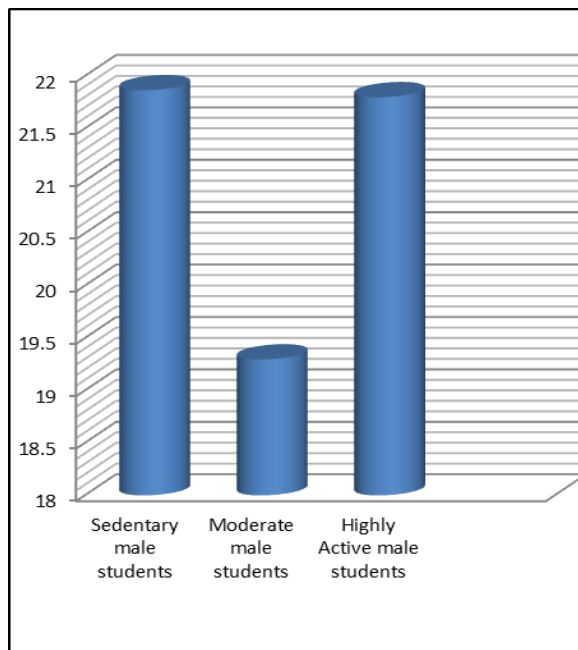

Figure 1: Means values of Sedentary, Moderate and Highly Active male students of BHU in relation to body mass index.

Discussion of Findings

The findings of the study revealed that significant difference was found among Sedentary, Moderate and Highly Active Males students of BHU. Further, graphical picture represents that Moderate Males students have less mean value in comparison to Sedentary and Highly Active Males students in relation to body mass index.

The findings may be attributed to the fact that Moderate Males students was under weight and Sedentary and Highly Active Males students was normal comparison to body mass index chart so that the observed sequence of performance was found Sedentary Males students > Highly Active Male students > Sedentary Males students > Moderate Males students in relation to body mass index. The findings of the study are in strong consonance with the findings of Greene GW, & Schembre SM (2011), Charles J. Fountaine, Gary A. Liguori, Arupendra Mozumdar, John M. Schuna Jr. (2011), Guest J, & Bilgin A, (2010), Scott T. Leatherdale, Suzy Wong (2009), Darcy L. Johannsen, & James P. DeLany (2008), Feifei Wang, & Tim McDonald (2005), Janet Buckworth, Claudio Nigg (2004) and Jacques Rigoaf (2001).

Conclusions

On the basis of the findings of the study, the following conclusions are drawn:

1. Significant difference was found among sedentary, moderate and highly active male students of BHU in relation to body mass index

2. Sedentary Males students possessed greater/higher body mass index in comparison to Highly Active Male students and Moderate Males students in relation to body mass index.

3. In case of body mass index Significant difference was found between sedentary & moderate male; moderate & highly active male students of BHU whereas found insignificant between sedentary & highly active male students of BHU and observed sequence of of performance was found Sedentary Males students > Highly Active Male students > Moderate Males students of BHU in relation to body mass index.

References

Christie, Catherine, and Mitchell, Susan, eds. (2000). Handbook of Medical Nutrition Therapy: The Florida Diet Manual. Lighthouse Point, FL: Florida Dietetic Association.

Grant, Anne, and DeHoog, Susan. (1999). Nutrition Assessment and Support, 5th edition. Seattle, WA: Grant and DeHoog.

Reddy, T. O., Singh, V., Srivastava, A. (2010). "Nutritional Assessment and Its Comparison between Obese and Non-Obese Female Students of Banaras Hindu University", ISBN 978-81-923944-2-8

Williams, Sue Rodwell. (1997). Nutrition and Diet Therapy, 8th edition. St. Louis, MO: Mosby.

Winkler, Marion., Feitelson., and Lysen, Lucinda. (1993). Suggested Guidelines for Nutrition and Metabolic Management of Adult Patients Receiving Nutrition Support. Chicago, IL: American Dietetic Association.

Charles, J. Fountaine., Gary, A. Liguori., Arupendra, Mozumdar., John, M. Schuna Jr.(2011). "Physical Activity and Screen Time Sedentary Behaviors in College Students", International Journal of Exercise Science Int J Exerc Sci 4(2) : 102-112.

Feifei Wang, Tim McDonald, Bonnie Reffitt, and Dee W. Edington, (2005). BMI, Physical Activity, and Health Care Utilization/Costs among Medicare Retirees. Obes Res.13:1450-1457.

Guest, J., Bilgin, A., Pearce, R., Baines, S., Zeuschner, C., Rossignol-Grant, C.L., Morris, M.J., Grant, R. (2010) Evidence for Under-Nutrition in Adolescent Females Using Routine Dieting Practices. Australasian Research Institute, Sydney Adventist Hospital, Wahroonga, NSW, 2076 Australia. rossg@sah.org.au Asia Pac J Clin Nutr.4: 526-33.

Janet Buckworth., Claudio Nigg (2004). "Physical Activity, Exercise, and Sedentary Behavior in College Students", Journal of American College Health, Vol. 53, No. 1

Scott T. Leatherdale, Suzy Wong (2009). "Association Between Sedentary Behavior, Physical Activity, and Obesity, Inactivity Among Active Kids Preventing Chronic Disease Public Health Research, Practice and Policy Prev Chronic Dis. 2009 January; 6(1): A26. Published online 2008 December 15. PMCID: PMC2644601.

http://www.diet.com/g/nutritional-assessment

http://www.sciencedirect.com/science/article/pii/0091743573900273

http://www.pedsforparents.com/articles/4155.shtml

http://www.drmirkin.com/nutrition/8689.html

http://health.nytimes.com/health/guides/nutrition/diet-calories/overview.html

* * *