Body Mass Index of College Students

Obesity is a growing concern in many countries around the world. Due to stress, lack of sleep, bad eating habits, and not enough exercise, college students in the United States are more likely to be obese than high school students or older people:. Huang et al. found that 21.6% of college students are considered overweight by calculating BMI (83). Obesity is a disease in which a person has excess body fat. Being overweight and being obese are not the same thing and cannot be used interchangeably. If a person is overweight, it means that they weigh more than the healthy weight for their height. However, this weight can be a result of many other factors than just body f such muscle, bone, or body water ("Obesity: MedlinePlus."). Obesity, on the other hand, occurs over time if a person consumes more calories than are burned. Genetic make-up also affects the likelihood that a person will get diabetes. Heavy weight caused by obesity can be a result of overeating, eating unhealthy and fatty foods, and lack of exercise. If not properly taken care of, obesity can lead to a lot more health problems. For example, excess body fat and weight can increase the risk of certain cancers, heart disease and stroke ("Obesity: MedlinePius."). Obesity is diagnosed through tests after body mass index has given an indication that the person is overweight and at risk for obesity and other serious health problems ("How Are Overweight and Obesity Diagnosed?").

To get a decent indication of amount of body fat, we can calculate body mass index (BMI). BMI is calculated by using height and weight. The formula is weight (kg)/ [height (m)] 2 or weight (lb) / [height (in)] 2 x 703 ("About BMI for Adults."). BMI is rather reliable and is frequently used to assess the amount of body

fat and screen a person to see if they fall in of the weight categories which are associated with certain health problems. Although it is a good screening tool for possible problems, BMI cannot be used as a diagnostic tool by itself. Weight, height, and gender also affect the value of a person's calculated BMI. Therefore, although there is a strong correlation between BMI and body fatness it is not necessarily the best indication of obesity ("About BMI for Adults.").

The mean for the results in this experiment is 23.30791 with a standard deviation of 4.638467. The mean for this data falls in the BMI category of "normal" (18.5-24.9) ("About BMI for Adults."). The frequency distribution histogram of Figure 1 shows that the data is slightlyright skewed and unimodal. The skewness could be caused by outliers. Without outliers such as 38.7, the histogram would be less skewed and more normally distributed. Despite the skewness of the histogram and presence of outliers, the data show that, on average, [redacted] students are within the "normal" range; however, a good amount of students are also overweight.

Overall, the results show that the data are normally distributed. The data agree with Huang et al. that according strictly to BMI calculations, the average college students are overweight. Many of these students could be muscular athletes, or they could very well just be overweight. Other tests an studies could be done to decide if BMI is correctly indicating that students are overweight. College students do not always have the best sleeping habits, the healthiest food options in the cafeteria, or the time to exercise as much as they want to. These factors, however, are all ones that students should care more because they are the leading causes of obesity

and other health problems. Taking care of one's body is the only way to be healthy and prevent such diseases. More college students should calculate their BMI every once in a while to have an idea of where they stand and to be able to get to a healthy weight for their body size.

Body Mass Index	Frequency
15-17.99	4
18-20.99	29
21-23.99	50
24-26.99	27
27-29.99	9
30-32.99	11
33-35.99	4
36-38.99	5
39-41.99	0

Table 1. Frequency distribution of body mass indices of 139 students between ages 18-23.

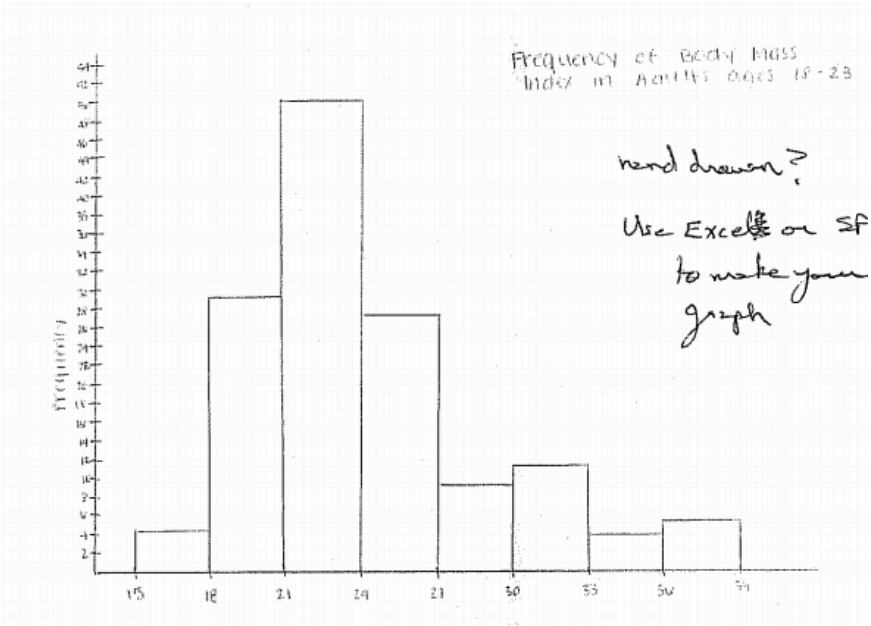

Figure 1. Frequency distribution histogram Table 1 data. Slight right skewed, unimodal.

Works Cited

"About BMI for Adults." Centers for Disease Control and Prevention. Centers for Disease Control and Prevention, 13 Sept. 2011. Web. 12 May 2014. <http://www.cdc.gov/healthyweightlassessing/bmiladult_bmilindex.html>.

"How Are Overweight and Obesity Diagnosed'?/'OJHLBI, NIH. NHLBI, 3 July 2012. Web. 13 May 2014. <http://www.nhlbi.nih.gov/health/health-topics/topics/obe/diagnosis.html>.

Huang, J rry_H.·· et al. "Assessing Overweight Obesity, Diet, And, Physical Activity in College Students." *Journal of American College Health* 52.2 (2003): 83-86.

"Obesity: MedlinePius." U.S National Library of Medicine. U.S. National Library of Medicine, 1 Jan. 2014. Web. 13 May 2014 <http://www.nlm.nih.gov/medlineplus/obesity.html>.

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Work Sample Evaluation

Subject Area: Introduction Statistics
Task Title: Investigating Body Mass Index
Student Work Sample Title: Body Mass Index of College Students

The document was scored using the *CCR Task Bank Rubric for Scientific Research Plans and Reports.* The final scores are indicated in the following chart.

Scoring Criteria	Insufficient Evidence	Developing	Progressing	Accomplished	Exceeds
Hypothesis Development		**X**			
Research Plan	**X**				
Results and Interpretation		**X**			
Communication			**X**		
Organization		**X**			
Accuracy			**X**		

Annotations: The following evidence from the work sample and the reviewer's comments support the scores above. Page and line numbers refer to the original work sample.

Scoring Criteria	Page #	Line #	Commentary about the work sample
Hypothesis Development: *Locating resources in order to develop a thesis or hypothesis*	4	2-12	The report includes a several relevant, authoritative information sources including reputable health journals.
	1-3		While the report establishes a general focus, it does not clearly identify a hypothesis or research question to be explored.
Research Plan: *Planning, conducting, and describing an experiment or study*			There is insufficient information to determine the data collection procedure used, as there is no mention of the methodology.
Results and Interpretation: *Describing and interpreting results in relation to the hypothesis*	1-3		The student provides some analysis and integration of evidence from the reading materials to support the general topic.
	2	7-16	The work sample includes a basic evaluation statistical methodology. Author does not reference evidence that the data are normally distributed.
Communication: *Using subject appropriate language and considering audience*	1-3		The author uses subject-specific vocabulary and language with few errors.
	1	20, 23	Author uses language that is too causal given the audience of a statistical report. "To get a decent indication…" and "BMI is rather reliable…"
	2	14	Author uses language that is too causal given the audience of a statistical report. "…a good amount of students…"
Organization: *Structuring main ideas and incorporating supporting information*	1-3		The student uses a discipline-appropriate structure with main ideas supporting information that is suitable for a statistical report.
	2	6-7	The transition from describing background research on obesity to describing experiment performed is poorly executed with no clear introduction to the experiment mentioned.
	3	5-8	The paper includes a hand-drawn histogram, whereas the task specifies that students should use "statistical technology" to create the histogram. Using Excel or SPSS would be appropriate.
	3		Table 1 and Figure 1 both display the same set of data, which seems unnecessary.
Accuracy: *Attending to detail, grammar, spelling, conventions, citations, and formatting*	1-3		The author demonstrates attention to detail, but with several errors in spelling, punctuation, grammar, and citations throughout the paper.
	1	5	Unnecessary colon appears at the end of the sentence.
	2	1	Missing word between "in" and "of" (to see if they fall in [one] of the weigh categories.
	2	10	Data should be referred to in the plural - "the data are" instead of "the data is."