

Observing Obesity in College Students

1
2 Over the last few decades, obesity has become a major problem throughout the
3 United States. Obesity can be defined as having an excess of body fat that may be caused by
4 different genetic or environmental factors (“Obesity Action Coalition”). A major reason why
5 obesity is such a huge problem is because of the associated health risks. Overweight
6 individuals are highly susceptible to chronic diseases including coronary heart disease,
7 diabetes, gallbladder disease, some forms of cancer, and many others (Lowry et al. 18).
8 These health complications place overweight individuals at a higher risk of early mortality.
9 Obesity caused by poor dietary patterns and lack of exercise in adolescence has been
10 directly correlated to the development of serious health problems later in life (Franko et al.
11 369).

12 In the last 15 years, there has been a significant increase in the number of
13 overweight individuals across all age groups (Lowry et al. 18). Studies have found that the
14 greatest increase in obesity take place between the ages of 18 and 29 years old, which is
15 also the age range of the majority of enrolled full-time college students (Racette et al. 39).
16 In addition, there is a significant decrease in the amount of physical activity expended by
17 high school and college students, which may also contribute to the high rates of obesity
18 associated with this age group (Franko et al. 369). Individual studies have found that the
19 amount of weight gain during the transition between high school and freshman year of
20 college ranges from 3.5 to 7.5 pounds. Although this superficially may not seem like a large
21 amount, even slight increases in weight can put an individual in the overweight category
22 based on their Body Mass Index (Gow et al. 33).

1 One of the most common ways to measure obesity is through Body Mass Index
2 (BMI). Body mass index is a measurement of relative amount of body fat of an individual by
3 accounting for age, height and weight. Individuals with a BMI over 30 are considered to be
4 overweight (“Obesity Action Coalition”). With an increase in the amount of overweight
5 individuals, especially in young adults it is becoming progressively more important to
6 educate adolescence on the apparent risks associated with obesity and also effective
7 methods to prevent obesity.

8 Although BMI is the most standard way of classifying weight categories, there is
9 controversy over the legitimacy of the BMI classification system. Studies have been
10 conducted in an attempt to determine the accuracy of this measure and have found that
11 BMI does not discriminate between that of lean weight, such as muscle, and that of actual
12 fat tissue (Romero-Corral et al. 959). The most common inaccuracies in BMI measures
13 have been found among men and the elderly (Romero-Corral et al. 963). Another issue with
14 BMI is that it does not discriminate between men and women. Therefore, a man and a
15 woman of the same age, height and weight will have the same BMI. This measurement
16 would most likely be inaccurate due to the fact that females tend to have a higher
17 percentage of body fat than males of the same age, height and weight (Rothman 56).
18 Although there are some errors associated with the BMI measurement, it is still an effective
19 and widely used estimation of the body fat content of individuals.

20 A study observing the obesity in college students was conducted at [REDACTED]
21 [REDACTED]. In this study, 139 undergraduate students participated in a voluntary
22 survey. The participants consisted of students ranging from 18 to 24 years old. The survey
23 was completed electronically and requested participants to provide their age, height, and

1 weight. This data was used to calculate the BMI by taking weight divided by the height
2 squared (kg/m^2). The data for all 139 participants can be found in Figure 1.

3 The results of this study show the average body mass index (BMI) of college
4 students to be 24.31 with a standard deviation of 4.64. A BMI that is representative of a
5 normal weight is 18.5 and 24.9. Therefore, the average BMI for college students is within
6 the normal weight range. Over 60% of all participants were within this range. Of the
7 remaining participants, 0.04% were considered to be underweight, 18.7% were considered
8 to be overweight and 14.4% were considered to be obese. The distribution of BMI scores of
9 the 139 participants is slightly skewed to the right. This skewed distribution may have
10 been due to outliers that were present in the data. Thompson's Tau technique was used to
11 analyze the data to identify any potential outliers. Through the technique, eight potential
12 outliers were found, all of which fell within the obese BMI range (≥ 30).

13 Limitations of the data gathering of the present study include the sampling method
14 of voluntary response. This sampling method is considered biased because the participants
15 are not randomly selected and the response is voluntary. Therefore, a particular group of
16 participants may be more inclined to respond to the survey than an opposing group. For
17 example, participants that are comfortable with their weight may be more willing to
18 participant in the study as opposed to students that are unhappy or embarrassed of their
19 weight. This may skew the data to be misrepresentative of the actual population. Another
20 problem with the data collection is that it was conducted at a single institution, and
21 therefore, may not be representative of the entire student population.

22 Overall 33%, or one third, of the students participating in this study are considered
23 overweight or obese. Although this is not the majority, it is a significant proportion of the

1 student population. The National College Health Assessment found similar results, with
2 approximately 29.9% of college students being overweight or obese (Racette et al. 39). This
3 assessment also determined that many college students are not meeting the appropriate
4 physical activity and dietary recommendations of health professionals (Racette et al. 39).
5 With statistics such these, it is important to recognize the inherent health risks associated
6 with weight gain during the transition between high school and college.

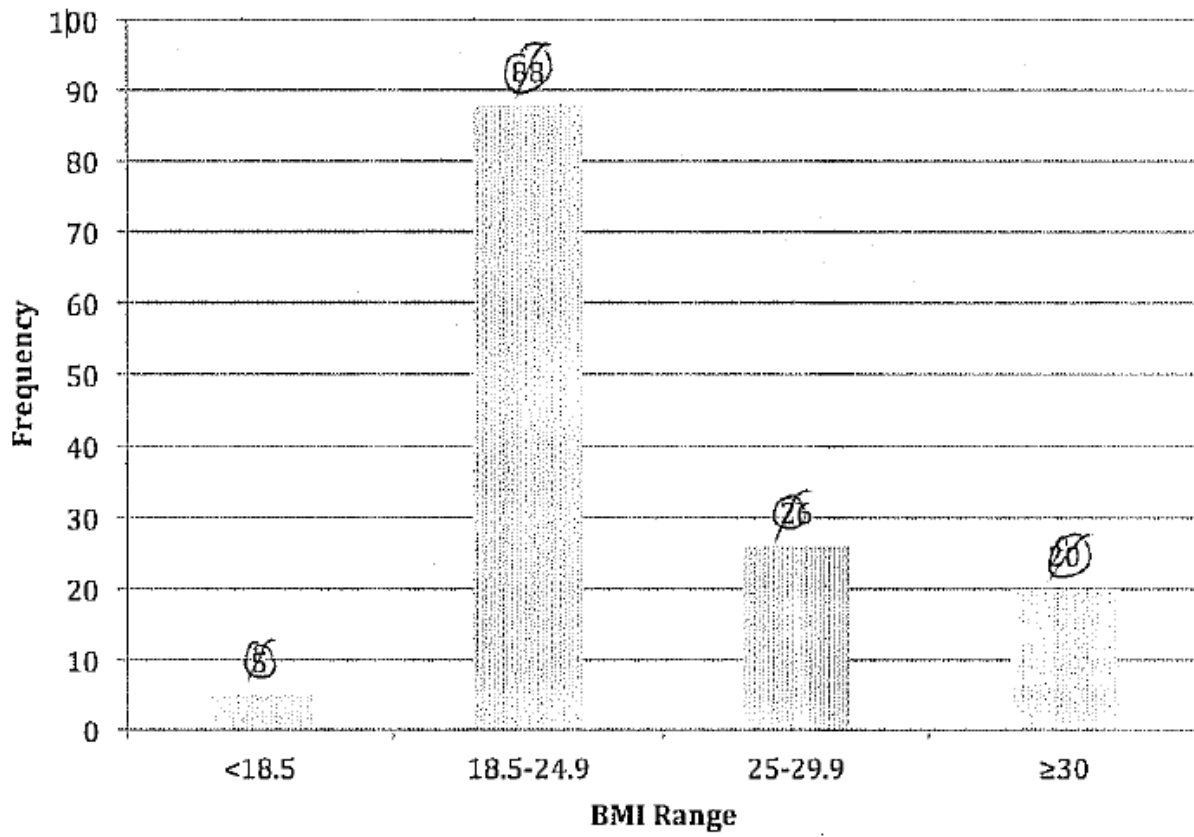
7 There are many efforts that can be employed to avoid rapid weight gain associated
8 with transition between high school and college. Educating the individuals at risk is a
9 crucial step in diminishing the risk of weight gain and promoting the mental and physical
10 health of young adults. At an individual level, continuously monitoring food group and
11 caloric intake and also monitoring levels of physical activity are essential to reducing the
12 risk of becoming overweight/obese. Colleges and high schools should implement an
13 effective program that strives toward educating students on physical activity and nutrition
14 to better prepare them for the challenges they will face during this transition.

Works Cited

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Figure 1. Frequency of BMI scores of 139 participants at Washington & Jefferson College. BMI classifications include: underweight (<18.5), normal weight (18.5-24.9), overweight (25-29.9), and obese (≥30). *spellout*

Work Sample Evaluation

Subject Area: Introduction to Statistics

Task Title: Investigating Body Mass Index

Student Work Sample Title: Observing Obesity in 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: <i>Locating resources in order to develop a thesis or hypothesis</i>	5; 6	1-23; 1-7	The report includes a collection of relevant, authoritative information sources that support the topic under investigation.
	2-3	20-23; 1-2	While the report maintains a clear focus throughout, but the author does not clearly state a hypothesis to be tested.
Research Plan: <i>Planning, conducting, and describing an experiment or study</i>	2-3	20-23; 1-2	The work sample describes a basic survey procedure, but does not include information on how the survey was disseminated (other than stating it was completed electronically) or how students were selected to participate in the study.
	3	13-21	The author addresses limitations of a voluntary survey and possible issues that could affect replicability of the study.
Results and Interpretation: <i>Describing and interpreting results in relation to the hypothesis</i>	4		The report demonstrates thoughtful analysis of information and integration of evidence from reading materials and study.
Communication: <i>Using subject appropriate language and considering audience</i>	All		Author clearly communicates ideas using discipline-specific language and providing definitions where appropriate.
	All		The author consistency writes in 3 rd person, appropriate for this type of report, which establishes an understanding of audience.
Organization: <i>Structuring main ideas and incorporating supporting information</i>	All		The work product includes a discipline-appropriate structure with well-developed main ideas, strong supporting information, and graphics suitable for a statistics report.
	All		Author includes smooth and logical transitions between paragraphs and ideas throughout the report.
Accuracy: <i>Attending to detail, grammar, spelling, conventions, citations, and formatting</i>	All		The author demonstrates attention to detail with almost no errors in spelling, punctuation, and grammar. Overall, citations are completed correctly and consistently.