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Overall Knowledge Regarding the “Freshman 15” of First Year Students

Research in Dietetics Paper for Dr. Brech

Abigail Mills and Marina Lorenzo
12-15-2017

Abstract

The “Freshman 15” is a term used by first year students at a college or university. It is the idea that students will increase in body weight by fifteen pounds during the first year. Although the concern of gaining fifteen pounds is exaggerated by media, the actual weight gained varies between each student. Weight gain at school could be affected by the number of home cooked meals before attending school, increased alcohol consumption, physical activity level, and body perception. A survey was created to pretest and posttest the participants on their basic nutrition knowledge and the concern of the “Freshman 15”. Twenty-three participants responded to this survey. Results were analyzed to determine whether or not classified freshmen are concerned about gaining weight and how the participants’ nutritional knowledge reflects the concern.

Review of Literature

The “Freshman 15” is a popular term used among first year college students across the United States. It is used to imply that freshman students will increase in body weight by fifteen pounds during the first year. The earliest mention of freshman weight gain in scientific literature appeared in the *Addictive Behaviours* journal in 1985. The next reference appeared in the popular teen magazine, *Seventeen*, in 1989.¹ Although the idea is talked about throughout college campuses, the concept of the “Freshman 15” has not appeared in a significant number of peer-reviewed articles, meaning it has not been proven to be legitimate. It is thought among scientists that it is a phenomenon popularized throughout media and social interactions that lacks research support.²

The “Freshman 15” is an ongoing topic that is questioned because of its lack of evidentiary support. While most first year students have heard of the “Freshman 15”, in one

study only 29% were extremely concerned with gaining weight.³ With a large portion of media dedicated to the “Freshman 15”, the percentage is relatively low for what is expected. Most students associate the weight gain of the “Freshman 15” to be fifteen pounds, when in reality on average it is 4.6 pounds.³ This significant difference of actual weight gained versus anticipated weight gained challenges the theory of the “Freshman 15”.

Based on the individual, weight gain can depend on the circumstances before attending college. The circumstances before attending college would include the amount of home cooked meals, physical activity level, and body perception. The transition from home cooking to food independence is the hardest part for students.² Living in dorms, there is a limited choice of food options. Most students are often on-the-go and rely on convenience foods, rather than healthy choices. Researchers found that weight gain correlated with snacking, larger meal portions, and decreased activity.⁴ The chaotic schedule of first year students leaves them facing new challenges and opportunities. However, their busy schedule also forces them to adopt these changes in dietary behavior and level of physical activity. Another aspect that could modify their behavior includes the proximity to campus dining halls and exercise facilities.⁵

Based on an interview conducted with freshman girls at a major university in the western United States, females are more typically concerned about their body image than males. Females struggle with the idea of comparing themselves to others along with the pressure to be attractive.² The concern of weight gain can alter the views, which could lead to poor body image and eating disorders. Female students view weight control and body image as more important than men do. The idea of fitting into the social norm of how a woman should look suggests that the driving force for maintaining or losing weight could be extrinsic forces.⁶ The concern of gaining fifteen pounds may perpetuate an irrational fear among college females, leading to unhealthy attitudes

and behaviors in an effort to fit the stereotype of how women should look.⁷ The transition to university life easily disrupts established dietary and physical activity patterns for many. One particular study focused on the behavior change of first year women, placing an emphasis on dietary patterns and physical activity level. The study concluded that 34% of females returned to a physical activity level during school and lost weight, while 66% decreased physical activity levels from the baseline and gained weight.⁸ This study suggests that while eating patterns play a large role in the weight gain of women, physical activity patterns also play a significant role.

With the increase in obesity in the United States over the last three decades, it can lead to other risks including type 2 diabetes, hypertension, and hypercholesterolemia. A lack of awareness to changes in weight gain means that students are unlikely to explore preventative options; this causes a problem in efforts to fight obesity.⁹ Obesity may lower self-esteem and academic performance. Regarding the theory of the “Freshman 15”, health professionals have made efforts to increase awareness on the effects of gaining weight, because it leads to chronic health conditions later down the road.¹⁰ The “Freshman 15” may not hold true for most students, but it should not be ignored. Based on the gathered research on the topic of the “Freshman 15”, we predict, if classified freshman are concerned with the “Freshman 15”, then their concern of the “Freshman 15” reflects their nutritional knowledge (Appendix A).

Methods

When first conducting the research project, a pretest and posttest survey were composed. The survey consisted of ten multiple choice questions, and one matching portion. Both the pretest and posttest asked the same questions, which allowed for a comparison of the results. The

survey asked questions regarding basic nutritional knowledge about the concern of the “Freshman 15”, MyPlate, food labels, eating habits, snack choices, and Recommended Dietary Allowances. After the pretest and posttest were piloted with a freshman class, the feedback was used to correct misunderstandings. Once the final survey was created (Appendix B), the proposal was written.

The submitted proposal included the project description, selection of subjects, purpose of study, research procedures, pretest and posttest surveys, conflict of interest statement, and the model informed consent. The proposal was sent to the Institutional Review Board (IRB) and approved (Appendix C). When the research survey was approved, the pretest was conducted along with the participants signing consent forms (Appendix D) in person at Ouachita Baptist University.

Participants

Seven students from the Introduction to Dietetics class and sixteen students from the Wellness class participated in the study. Participants wrote their Ouachita student ID numbers on the pretest and posttest which also allowed for the students to remain anonymous. After the pretest was given, the participants were sent three lessons over a three-week period. The first lesson covered MyPlate and portion sizes. The second lesson was over “how to read a nutrition label”. The third lesson was on the topic of “added sugar, sodium, and fats”. The students were given information using the program Prezi, each presentation included visuals, examples, and easy-to-read information. The information presented was taken from ChooseMyPlate.gov and the United States Department of Agriculture (USDA) Food and Nutrition Services website. After the last lesson was completed, the posttest was conducted in person at Ouachita Baptist University in the same classes as the pretest.

Data Analysis

The answers to each question were tallied up on an excel spreadsheet to compare whether or not the participants learned from the three lessons presented. From the spreadsheet, three graphs were created. The graphs were used as visual representation comparing the pretest and posttest answers for the questions “Are you aware of the “Freshman 15”?”, “Are you concerned with the “Freshman 15”?”, and “Match the food to the appropriate MyPlate location.”

Results

After analyzing the data and comparing the responses of the pretest and posttest surveys, the results for each answer were collected and then converted into percentages (Appendix E). During the three weeks in between the pretest and posttest, information about the topics asked was sent to the participants. The first question on the pretest regarded whether the freshman participants were aware and concerned with the “Freshman 15”, 100% were aware while only 43% were concerned with it. Those who are aware of the “Freshman 15” but not concerned came in at 57%. For the posttest answer to this question, the percentages increased to 47% for those who were both aware and concerned with the “Freshman 15” while those who were aware of the “Freshman 15” but not concerned decreased to 53% (see Figures 1 and 2 for the results of question one and two).

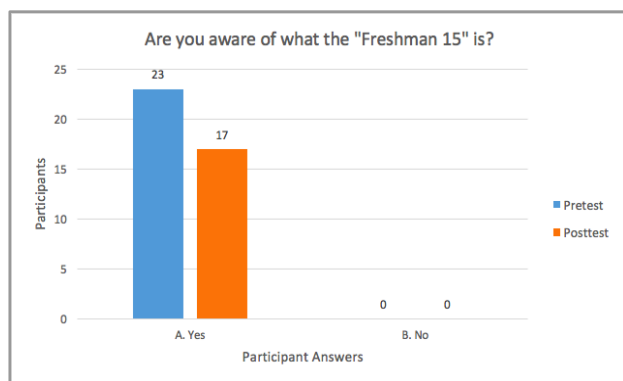


Figure 1

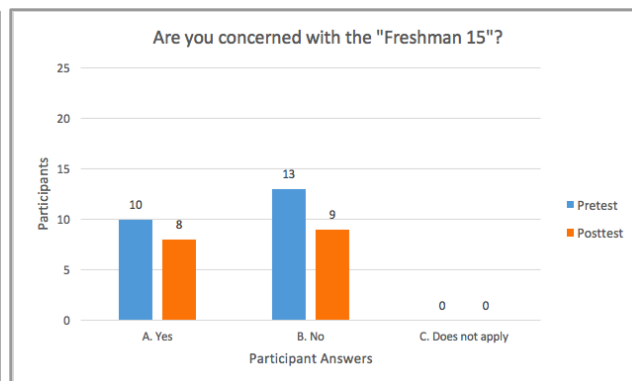


Figure 2

The third question of the pretest and posttest survey asked how the participants rated their general health, both physically and mentally, based on their eating habits. The question had the options of “poor”, “fair”, “average”, “good”, and “excellent” as answers. In both the pretest and posttest 0% of participants ranked their health as “poor”. In the pretest, 9% of participants rated themselves “fair”, while in the posttest it increased to 12%. For the rating of “average”, 60% of participants classified themselves as “average” in the pretest; however in the posttest, it decreased to 47%. 30% of participants rated themselves “good” in the pretest, and in the posttest it increased to 35%. The pretest had 0% of participants that thought their overall health was excellent, in the posttest one participant rated themselves as “excellent”.

The fourth question on the pretest and posttest, “Match the food to the appropriate MyPlate location.”, was graded based on the percentage of correct locations labeled by the participants: 100%, 80%, 60%, 40%, 20%, and 0%. In the pretest, 17% of participants scored a 100%, this increased to 29% in the posttest. On both the pretest and posttest survey no participants scored an 80%. For the 60% score, 26% of participants scored a 60% in the pretest

and decreased to 18% in the posttest survey. In the 40% score, 30% of participants scored 40% in the pretest survey and decreased to 12% of participants scoring 40%. In the 20% score, 26% of participants scored a 20% in the pretest and increased to 35% in the posttest. For the 0% score, no participants scored 0% in the pretest, however, in the posttest this increased to 6% of participants scoring 0% (see Figure 3 for results to question four).

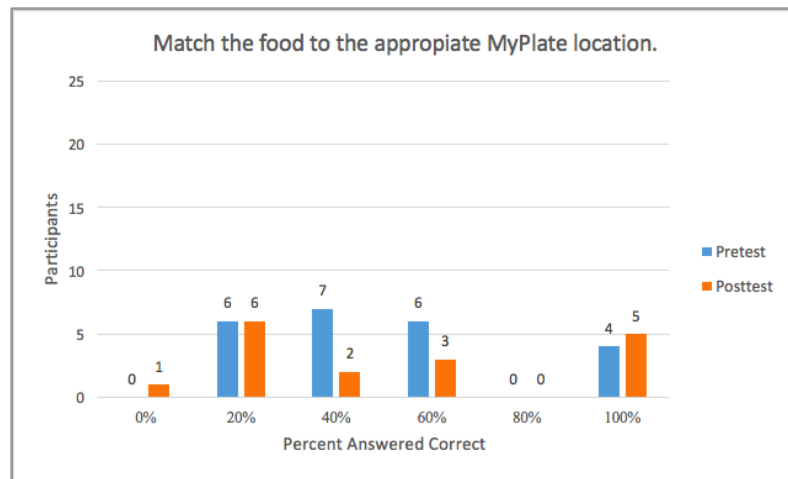


Figure 3

The fifth question asked the participants, “Which of the following is required on the food label?”. The options to choose from were: “total carbohydrate”, “sugar”, “iron”, “all of the above”, and “I don’t know”. 17% of participants said that only total carbohydrates are required on the food label on the pretest, this increased to 18% in the posttest. 17% of participants said that only sugar is required on the food label on the pretest and decreased to 6% on the posttest. 0% of participants said that only iron is required on the food label for both the pretest and posttest. 57% of participants said that all of the options above were required on the food label, this increased to 70% on the posttest. 9% of participants answered “I don’t know” on the pretest,

which decreased to 6% on the posttest. The majority of the participants chose the right answer, “all of the above”, with 57% on the pretest (which increased to 70% on the posttest).

The sixth question asked the participants, “Do you eat more when you are feeling stressed?”. The answer options included: “never”, “sometimes”, “often”, or “always”. For the answer “never”, 9% of participants chose this in the pretest, then in the posttest it decreased to 6%. 74% of participants chose the option “sometimes” in the pretest, and then in the posttest it increased to 76%. For the answer “often”, 13% of participants chose this answer in the pretest, in the posttest it increased to 18%. 4% of participants chose the answer “always” in the pretest, in the posttest it decreased to 0%. The majority of the responses in the pretest and posttest stated that most participants sometimes eat more when they are feeling stressed.

The seventh question asked the participants “Which of the following is a better choice to snack on when feeling stressed?”. The options were: “trail mix”, “baby carrots”, and “Cheez-It baked snack crackers”. For the answer “trail mix”, 21% of participants chose this answer in the pretest and increased to 29% in the posttest. 70% of participants chose “baby carrots” in the pretest compared to the posttest where it was 71%. For the answer “Cheez-It baked snack crackers”, 9% of participants chose this answer, in the posttest it decreased to 0%. The majority of the responses in the pretest and posttest chose the correct answer of “baby carrots” as a healthy snack when feeling stressed.

The eighth question asked the participants, “Which of the following food contains the most fat?”. The options were: “graham crackers”, “brownies”, “pudding”, “angel food cake”, and “I don’t know”. 0% of participants chose “graham crackers” on both the pretest and posttest. 39% of participants chose “brownies” in the pretest, in the posttest this increased to 53%. 26% of participants chose “pudding” in the pretest and decreased to 18% in the posttest. 26% of

participants chose “angel food cake” in the pretest, in the posttest this increased to 35%. 9% of participants in the pretest chose “I don’t know”, this decreased to 0% in the posttest. The correct answer for the question is “brownies”. The posttest results had over half of the participants answer correctly.

The ninth question asked the participants, “Which of the following is a daily serving of vegetables?”. The answer options were: “6-11 cups”, “2-3 cups”, “3-5 cups”, “1-2 cups”, and “I don’t know”. 4% of participants chose “6-11 cups” on the pretest and increased to 6% in the posttest. 17% of participants chose “2-3 cups” in the pretest and increased to 35% in the posttest. 49% of participants chose “3-5 cups” in the pretest and increased to 53% in the posttest. 17% of participants chose “1-2 cups”, this decreased to 6% in the posttest. 13% of participants chose “I don’t know” compared to the 0% that chose “I don’t know” in the posttest. The correct answer for this question is 3-5 cups of vegetables per day. In the posttest, over 50% of participants answered correctly.

The tenth question asked the participants, “Which of the following beverages has the highest amount of sugar?”. The options were: “Canada Dry Ginger Ale”, “Coca-Cola”, “Sweet Tea”, and “Starbucks Iced Caffe Mocha”. 0% of participants chose the option of “Canada Dry Ginger Ale” in the pretest and posttest. 35% of participants chose “Coca-Cola” in the pretest and increased to 47% in the posttest. 57% of participants chose “Sweet Tea” in the pretest and this decreased to 24% in the posttest. In the pretest, 13% of participants chose “Starbucks Iced Caffe Mocha”, this increased to 29% in the posttest. The correct answer for this question for the highest amount of sugar is “Coca-Cola”. In the posttest, 47% of participants answered correctly.

Discussion

The project involved visiting two classes and emailing the participants three lessons over a three-week period. The amount of participants changed due to an Education field trip for the Education majors. This decreased our number of participants from twenty-three in the pretest to seventeen in the posttest. Since there was a decrease in the number of our participants, some of the results are probably skewed. The lessons that were sent out were sent through email. There were pros and cons to this tactic of presenting the information to the participants. The pros were not having to set up a meeting time when every participant could meet to learn the material. The emails were also a way for the participants to learn the material on their own time. The con of sending emails to the participants was the participants not checking their emails. There was an average of six out of twenty-three participants who viewed the email lessons. This resulted in the participants not learning the information in order to compare the results from their pretest and posttest answers. Based on the answers from the pretest and posttest, some participants may have already known this information if they have a related major, such as Nutrition and Dietetics. Majors who were not familiar with the information had to take more time out to learn the information that was presented in the emails.

If the project were to be repeated, the changes that would be made include: having a larger sample size to have more variation in answers, a wider variety of majors across campus, meeting in person to do the nutrition lessons, and having all participants answer for the pretest and posttest to have more accurate results.

Conclusion

The findings from this research study may not fully support that all classified freshman are concerned with the “Freshman 15” based on their nutritional knowledge. For both the pretest and posttest, a majority of students answered that they are not concerned about the “Freshman

15". Overall, the majority of the nutrition based questions were answered correctly for the pretest and posttest. The participants have a basic knowledge of nutrition and are aware of the "Freshman 15", but are not concerned.

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