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The Effect Of Restaurant Menu Labeling On Attitudes Towards Menu Labeling And Eating Behaviors Of Ncaa Athletes, Recreational Athletes, And Non-Athletes' In A University Setting

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THE EFFECT OF RESTAURANT MENU LABELING ON ATTITUDES TOWARDS MENU LABELING AND EATING BEHAVIORS OF NCAA ATHLETES, RECREATIONAL ATHLETES, AND NON-ATHLETES' IN A UNIVERSITY SETTING

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ABSTRACT

Intro College students eat the majority of their meals outside of the home, which likely means that college students are impacted by calories consumed in restaurants, including campus dining halls. The Affordable Care Act, while not fully operationalized, requires calorie content labels be included on menus and menu boards in restaurants so that consumers are aware of the calories of menu items selected. Therefore, it is important to explore college students, including athletes, attitudes and behaviors toward menu labeling in an on-campus dining facility setting. The objectives of this study were to determine NCAA athletes, recreational athletes, and non-athlete's attitudes toward nutrition labeling and food consumption behavior before and after menu labeling was implemented in a university dining facility. *Methods* A pre- and post-intervention survey of students after eating lunch at a university dining facility was conducted to obtain students' attitude towards menu labeling. The pre-intervention surveys were conducted 30 days prior (February 2017) to the menu labeling implementation and 30 days after (April 2017) the restaurant menu labels were posted. Two-hundred and sixteen respondents participated in the pre-survey and 171 respondents participated in the post survey; total participation of 95 NCAA athletes, 88 recreational athletes, and 204 non-athletes. This study utilized a 2 × 3 between subjects factorial design, and a series of two-way independent ANOVAs, as well as descriptive statistics. *Results* Based on the results of the study, college student's attitudes towards restaurant menu labeling did not change between pre and post menu labeling intervention. Additionally, it was found that NCAA athletes' attitudes towards nutrition information was significantly lower

than the other two groups. This study was similar to other studies that found Gen Y's are likely to not decrease their calorie consumption when presented with restaurant menu labeling.

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CHAPTER 1

INTRODUCTION

Consumption of meals outside of the home and increasing rates of obesity have both been, and continue to be, thoroughly researched and heavily reviewed. In response to the growth of consumption of meals outside of the home, the United States Affordable Care Act, signed into law in 2010, amended section 403(q) of the Federal Food and Drug Act with the addition of section 4205 (IV) (Patient Protection and Affordable Care Act, 2010), which affects restaurant chains with 20 or more locations. The new law that went into effect December 1, 2014 requiring that calorie content labels be included on menus and menu boards in restaurants so that consumers are aware of their calorie intake at each visit. However, the compliance date of the law has been amended numerous times, with the most recent compliance date moving from May 2017 to May 2018 (Center for Food Safety and Applied Nutrition, 2016; Commissioner, O. O., 2017).

College students' eating behaviors are particularly interesting because the majority of meals during the college years are eaten outside of the home (Deliens, 2014), which could mean that college students are greatly impacted by calories consumed in restaurants, especially in on campus dining halls. In addition, the majority of students enrolled in universities are part of the Gen Y population, who tend to have different attitudes and behaviors towards eating and the demand for calories to be provided on restaurant menus (Roseman, Joung, Choi, & Kim, 2016.

Originally, schools were excluded from the Federal Food and Drug Act amendment; however, a modification in December 2015 determined that all establishments that "offer for sale restaurant or restaurant-type food and [whose] primary business activity is the sale of food to consumers," made schools no longer exempt from posting the calorie content information on menus (Food Labeling, 2015).

While it has been shown that calorie content labeling on menu boards has had a positive effect on the general public (Bleich & Pollack, 2010; Chu, Frongillo, Jones & Kaye, 2009; Bruemmer, Krieger, Saelens & Chan, 2012; Elbel, et. al, 2013; Hershey, Wohlegenant, Arsenault, Kosa & Muth, 2013; Roberto, Larsen, Agnew, Baik, et. al., 2010), studies investigating the effect menu labeling has on university students and athletes (Defeciani, 2015; Fortes, 2013; Gaines, 2014) are limited. Gen Y consumption patterns have been found to not be effected by restaurant menu labeling, however the attitudes and behaviors of the Gen Y population demanding restaurant menu labeling remains (Roseman, Joung, et. al, 2016). In contrast, athletes often engage in disordered eating behaviors without intentionally doing so (Gaines, 2014), often putting more emphasis on calorie intake than non-athletes (Defeciani, 2015; Fortes, 2013). The Academy of Nutrition and Dietetics state in their position paper that disordered eating can vary from a range of symptoms including partial food restriction to fully restricting calories (Ozier, 2011).

Restaurant menu labeling with calorie information has the potential to have a negative effect on an athlete's eating habits and perceptions of calories because of the athlete's willingness to go to severe lengths in order to be competitive, including restricting consumption of food they perceive to be high in calories or fat (Defeciani, 2015). Whereas, non-athletic students generally make more healthful and well rounded choices when they are provided

restaurant menu labeling (Freedman & Connors, 2010; Arsenault, et al., 2010). Therefore, this research study examines students' food and restaurant menu labeling attitudes and behaviors, and food consumption calories in three athletic categories to determine if there are differences before and after a restaurant menu labeling intervention at a university foodservice facility. This study focuses on the following research questions:

1. Do students' pre- and post-consumption of calories change as an effect of a point-of-purchase menu labeling intervention in a university foodservice setting?
2. Does pre- and post-consumption of calories differ between three athletic classifications (NCAA athletes, recreational athletes, and non-athletes) as an effect of a point-of-purchase menu labeling intervention in a university foodservice setting?
3. Is there a difference between all student attitudes regarding menu labeling pre- and post-menu labeling intervention?
4. Is there a difference between student attitudes regarding menu labeling between the three athletic classifications pre- and post-menu labeling intervention?
5. Does students' consumption of caloric beverages differ pre- and post-menu labeling intervention?
6. Does students' consumption of caloric beverages differ pre- and post-menu labeling intervention among the three athletic classifications (student athletes, recreational athletes, and non-athletes)?

CHAPTER 2

REVIEW OF LITERATURE

Obesity and Restaurant Menu Labeling

The majority of U.S. college students are between the ages of 18 and 24 (National Center for Education Statistics, 2016). During the years of 1971-1974, the rate of obesity in adults living in the United States was 14.5%. In 2014, the percentage of adolescents between the ages of 12 and 19 who are considered obese was 20.6% (Flegal KM, Carroll MD, et. al, 2002; Ogdan et al. 2006), a 6.1 point increase in 40 years. According to the Center for Disease Control and Prevention, that percentage goes up to 70.7% when considering adults over the age of 20 who are either overweight or obese (Center for Disease Control, 2016). The current data provided by the Center for Disease Control reports that 17.3% of American's between the age of 18 and 24 are considered overweight or obese (Center for Disease Control, 2017). Along with an increase in obesity among young adults, more calories are consumed when individuals eat outside of the home (Lin & Morrison, 2012; Sinclair, Cooper, et. al., 2014).

It has been found that consumers underestimate the calories in the foods they order in fast food restaurants by an average of 600 calories (Bleich & Pollack, 2010). This finding would support the need for restaurants to post calorie information on menu boards as required by the Affordable Care Act (Patient Protection and Affordable Care Act, 2010). One study concludes

that 76% of Americans surveyed reported that calorie information posted at fast food restaurants would affect their ordering decisions (Bleich & Pollack, 2010). Another study performed at the beginning of the restaurant menu labeling initiative showed a negative relationship between menu labeling and calorie content of meals ordered in restaurants, finding that when nutrition labels were provided at the point of purchase, fewer calories were ordered by the customer (Chu, et. al, 2009). Alternatively, when restaurant menu labeling was removed from the fast food restaurants, calories ordered went back up to where they were before the restaurant menu labeling was implemented (Chu, et. al, 2009; Elbel et al., 2013; Roberto, et. al, 2010; Stran, et. al., 2016).

On the contrary, there are restaurant menu labeling studies that report no significant effect on consumption patterns when provided restaurant menu labeling (Ellison, et. al., 2013; Roseman, et. al., 2016). While the consumer desired to view the restaurant menu labeling, their food choices were not effected. Additionally, one study that also reported no significant decrease in calorie consumption also reported an increase in customer awareness of the calorie content of food post restaurant menu labeling intervention (Krieger, et al., 2013).

Eating Behaviors in the Gen Y Population

It is important to understand the effects that menu labeling has on different populations from a generational aspect. The Gen Y population has the ability to demand changes they want to see because at 77 million people, they are the largest generation living in our world today (DeVaney, 2015). In respect to the restaurant industry, Roseman and colleagues report that Gen Y students desire to see restaurant menu labelling in restaurants in order to make healthier food choices while eating out (Roseman, et. al., 2016). However, it has been noted throughout various studies that even though the Gen Y population wants to see restaurant menu labeling and has

intentions of choosing healthier options because of the menu labeling, actual caloric consumption sometimes does not necessarily decrease (Ellison, et. al., 2013; Roseman, et. al., 2016). Ellison et. al. suggested that symbolic menu labeling, rather than using actual words and numbers to portray the nutrition facts on menus, may lead to a greater decrease in calories consumed in the Gen Y population.

Restaurant Menu Labeling on College Campuses

While some studies still report no significant changes in calorie consumption as a result of restaurant menu labeling (Ellison, et. al., 2013; Krieger, et al., 2013) restaurant menu labeling is often proving itself to be in direct correlation with a decrease of calories ordered at restaurants (Chu, et. al, 2009; Elbel et al., 2013; Roberto, Larsen, et. al., 2010; Stran, et. al. 2016), restaurant menu labeling is being seen more in schools and on college campuses. In a study conducted by Christoph, Ellison and Meador (2016), college aged students tend to decrease their fruit and vegetable consumption and increase calorie dense food consumption such as fast food and soft drinks (2016) when they begin attending a university. Factors that often cause students to resort to calorie dense foods as opposed to nutrient dense foods is shortage of time due to demanding schedules, convenience, cost, taste and their physical and social environment (Davy, Benes, et. al., 2006). In fact, most college students do not meet any of their nutrition needs for each food group other than fat (Driskell, et. al, 2006).

The presence of nutrition labels on food often leads college students to buy more healthful foods (Freedman & Connors, 2010; Arsenault, Singleton, et al., 2010). In a study on the effect of purchasing trends from restaurant menu labeling in a campus convenience store, findings indicated that foods that were marked with nutrition labels were more likely to be sold, and foods that were considered healthy were bought more often (Freedman & Connors, 2010).

Focus groups that were held on a college campus to address college students' perceptions of restaurant menu labeling revealed that college students were willing to utilize restaurant menu labels and believed that nutrition content other than calories provided on the labels could be beneficial to long term health (Fernandes, Oliveira, et. al., 2015). A consistent idea is that as long as the nutrition labels are easy to read and comprehend, they tend to have a positive effect on college student's eating choices (Bleich et. al., 2010; Fernandes, et. al., 2015; Freedman & Connors, 2010; Funderburk, 2014). However, no effect has been shown on consumption patterns, despite the efforts of restaurant menu labeling (Ellison, et. al., 2013)

Eating Behaviors of Athletes vs. Non-Athletes

Eating behaviors in athletes can at times be vastly different than the eating behaviors of non-athletes. Specifically, college aged students who are not athletic tend to eat foods higher in calories and fat, while athletes tend to be more aware of consuming lean proteins, fruits and vegetables in order to maintain high performance in their sport (Christoph, et. al, 2016; Driskell, et. al., 2006; Mohalijah, Boo, et. al, 2015). Burkhart and Pelly (2013) explain that while both sensory factors and nutrient content are important factors in food decisions for athletes, they tend to make more decisions based on the nutrition content of the food. On the contrary, non-athletic students makes food decisions based on how the food tastes and what their peers are consuming, and are often unaware of the nutrient and calorie content of the food that they are consuming (Zigmont & Bulmer, 2015). A study that examined female college athlete eating patterns concluded that as a population, female college athletes do not meet their energy requirement and tend to under eat (Shriver, 2013). Since college athletes and non-athletes are within the same age range, some of their eating patterns may be similar to each other despite their athletic

classification. Young adults' eating patterns, whether they binge eat or restrict food, tend to be correlated with their emotions (Lydecker, Palmberg, et. al, 2015).

Menu Labeling in Athletic Facilities

Research on menu labeling in an athletic dining facility is relatively new and minimally investigated. According to Burkhart and Pelly (2013), nutritional content of food is more important to an athlete than the taste of the food, explaining that choices made in the dining hall are not only affected by food availability but also by the support provided to students before entering the dining hall, such as coaches, parents, dietitians, and trainers. These findings indicate that education plays an important role in successful food labeling in athletic facilities, and would be used by athletes because they are more likely to make food choices based on how the food has the perception to affect their performance (Burkhart & Pelly, 2013). On the contrary, Folasire, Akomolafe and Sanusi (2015) report that most athletes do not use nutrition education and knowledge that they have been given when making dietary choices, but instead tend to not reach their recommended macronutrient intake because of diet restriction and pressure to perform at the highest level.

The literature would suggest that athletes, as a group, may respond to restaurant menu labels dissimilar than non-athletes because of differences in eating habits and fueling motivations, as well as support from coaches and athletic staff (Burkhart & Pelly, 2013). Based on studies that show significant decreases in calories as an effect of restaurant menu labeling, alongside studies that show no significant decrease in calories, this study is focused on examining a specific and unique population, college student athletes versus non athletes, in order to analyze attitudes toward menu labeling. This study will also aim to analyze calorie consumption pre and post in a university restaurant menu labeling intervention.

CHAPTER 3

METHODS

For this study, a survey of university students at the University of Mississippi was conducted before and after dining hall implementation of menu labeling to examine students' attitudes and behaviors towards menu labeling, along with caloric intake based on self-reported food and beverage consumption. The study was approved as Exempt under 45 CFR 46.101(b)(#2) by the University of Mississippi Institutional Review Board.

Research Participants and Setting

Participants in this study were college students at the University of Mississippi dining at The Grill at 1810, which is one of several dining halls at the University managed by Aramark. It is housed in one of the main athletic facilities on campus, and is therefore patronized by a large number of student athletes, in addition to general students, faculty, and members of the Oxford, Mississippi community. The menus served in The Grill at 1810 are developed by Aramark then edited and approved by a sports Registered Dietitian, which makes this setting particularly unique. In order to determine if the customer was eligible to participate in the study, the screener question, "Are you currently enrolled as a student at the University of Mississippi and are you at least eighteen years old," was asked by survey administrators.

Data Collection Procedures

A pre- and post-intervention survey was administered to all students dining at The Grill at 1810. The pre-survey was conducted 30 days prior to posting menu labeling (Tuesday, January 31 and Friday, February 3, 2017) and 30 days after posting menu labeling (Tuesday, April 25 and Friday, April 28, 2017). The Grill at 1810 uses a four-week cycle menu, so the same day of the cycle was used during pre- and post-surveying so that the compared self-reported food consumption was from the same menus. Students' self-reported food and beverage recall was converted into calories based on calorie content of the food consumed. Survey days were Tuesday and Friday in order to reach as many students as possible during highest participation days.

The survey was administered by graduate students attending the University of Mississippi, who had been previously completed CITI training. Surveyors observed potential students and approached them to participate in the survey after completing their meal and prior to returning their tray to the dish room area. Potential students were initially asked the screener question. Once the potential participant verified they were a student at the University of Mississippi and agreed to participate in the survey, they were given a survey and instructed on how to properly complete it.

Measures

A survey instrument was used in order to gather information about participating students' attitudes and behaviors on menu labeling, demographics and self-reported food consumption. Questions contained in the pre- and post-intervention surveys were divided into five subsections.

Attitudes Toward Restaurant Menu Labeling and Menu Labeling Behaviors

Questions used in a prior study were asked regarding students' attitudes toward restaurant menu labeling and menu labeling behaviors (Martinez, Roberto, Kim, Schwartz, & Brownell,

2012). Some questions were modified to include the University of Mississippi location. The questions utilized a 5-point Likert scale.

1. I believe nutrition information affects food choices at least sometimes. (Attitude)
2. I have looked at nutrition information on University of Mississippi The Grill at 1810 website. (Behavior)
3. I think it is a good idea to make nutrition information available for each meal in the dining hall. (Attitude)
4. I would feel embarrassed holding up the The Grill at 1810 line to read a nutrition label. (Attitude)
5. I would make healthier selections when nutrition information is provided on the menu. (Attitude)

The following question was only provided on the pre-survey:

6. I believe nutrition labels in The Grill at 1810 will influence me to choose lower calorie and/or healthier options. (Attitude)

The following question was only provided on the post-survey:

7. I believe nutrition labels in The Grill at 1810 influenced me to choose lower calorie and/or healthier options. (Attitude)

Self-reported Food Consumption at The Grill at 1810:

Following standard operational practices, the "hot bar" options offered at The Grill at 1810 were served by an employee, which ensured consistency in the size of portions. For the purpose of this study, because calorie menu labeling was only posted on "hot bar" options, and not on the self service salad bar, only consumption of "hot bar" items and beverage choices were analyzed. After indicating on the survey which foods they ate while visiting The Grill at 1810,

the participants were asked to identify how much of the portion they ate. Written instructions were provided to each participant directing them to circle each hot food item they consumed, then indicating which option most closely depicted how much of the food they ate (none,1/4, 1/2, 3/4, full serving). Self-reported caloric beverages included non-diet soft drinks, sweet tea, lemonade, milk and sports drinks, while water, unsweet tea and diet soft drinks consumed by participants were recorded as non caloric soft drinks. Table 1 depicts how the participants reported what they ate on their visit to The Grill at 1810.

Table One: *Example of Self Reported Food Consumption Survey*

Yogurt Bar					
Yogurt	None	¼	1/2	¾	Full portion
Cottage cheese	None	¼	1/2	¾	Full portion
Hot Food					
Roasted Pork Adobo	None	¼	1/2	¾	Full portion
California Blend Veggies	None	¼	1/2	¾	Full portion
Cheesy Corn Casserole	None	¼	1/2	¾	Full portion
International					
Beef Stroganoff	None	¼	1/2	¾	Full portion
Egg Noodles	None	¼	1/2	¾	Full portion
Roasted Sweet Potatoes	None	¼	1/2	¾	Full portion
Steamed Green Peas	None	¼	1/2	¾	Full portion
Pizza: circle type of pizza and indicate slices eaten					
Hawaiian Pizza	½	1	1 1/2	2	2 1/2
Cheese	½	1	1 1/2	2	2 1/2
Pepperoni	½	1	1 1/2	2	2 1/2
Soup					
Chicken Noodle	None	¼	1/2	¾	Full portion
Smoothie					
Strawberry-Banana					
Dessert					
Chocolate Chip Cookie	None	1/4	1/2	¾	Full portion
Bread					
Garlic Herb Breadstick	None	1/4	1/2	¾	Full portion
Drinks					
How many glasses did you have?	½	1	1 1/2	2	2 1/2
What kind of drink did you have? Did you eat anything else not listed above? If so, please list and indicate the amount you ate.					

Demographics:

Athletic Classification. Participants were asked to self-identify which of three categories best described their athletic classification. The three categories and definitions provided on the survey included:

1. NCAA athlete, defined as a person who currently plays a sport regulated by the NCAA (Current Student-Athletes, 2016).
2. Recreational athlete, defined as someone trained to win in competition, for example a person who plays a club sport or a marathon runner (Mohalijah, et. al., 2015).
3. Non-athlete, defined as anyone who does not fit either of the above categories, and includes people who regularly exercise.

In addition, the survey included questions on the participant's age, student academic classification, sex, race/ethnicity, and self-reported height and weight. Also, survey participants were asked how often they ate at the Grill 1810 and how they paid for their meal.

Weight Management Status. Participants were asked to choose from one of the three following statements regarding their desire to gain, lose or maintain weight, which was adapted from Olstad's study (2015):

1. I am currently limiting my calorie intake and/or trying to lose weight.
2. I am currently increasing my calorie intake and/or trying to gain weight.
3. I am neither limiting nor increasing my calorie intake, and am trying to maintain my weight.

Analysis

Once pre- and post-intervention surveys were administered and collected, data was entered into Excel and exported to Statistical Package for Social Sciences (SPSS) version 24.

Students' self-reported food recall was converted into calories based on calorie content of the food consumed. Calorie content for self-reported food consumption was calculated using the calories posted for each menu item on the Grill 1810's website. The advanced nutrition analyses and comprehensive nutrition information on each menu item was provided to the Grill at 1810 by Aramark. Self-reported pre- and post-calorie consumption was compared using a factorial ANOVA in order to assess change in food consumption patterns as a result of the menu's calorie labeling.

The 5-point Likert scale five attitudinal questions and one behavioral question, along with demographics, were entered into SPSS. In addition, total calories for each "hot bar" food and beverage item were entered into an excel spreadsheet, and then exported to SPSS. Students' self-reported food and beverage consumption were also entered into SPSS.

Self-reported height and weight was converted into body mass index and recorded in SPSS. Thirty-two surveys that appeared to have streamlined answers or were incomplete were deleted from the data set. Data were recorded by the primary researcher, and audited by two different Master's level graduate students for accuracy. Table 2 provides the study's research questions, along with the statistical test used to analyze the question.

Table 2

Study's Research Questions and Corresponding Statistical Tests

Hypotheses	**Statistical Test**
Student's pre- and post-consumption of calories will change as an effect of a point-of-purchase menu labeling intervention in a university foodservice setting. & Student's pre- and post-consumption of calories will differ between three athletic classifications as an effect of a point-of-purchase menu labeling intervention in a university foodservice setting.	Two-way ANOVA
Is there a difference between student attitudes regarding menu labeling pre- and post-menu labeling intervention?	Two-way ANOVA
There will be a difference between student attitudes regarding menu labeling between the three athletic classifications pre- and post-menu labeling intervention?	Two-way ANOVA
Student's consumption of caloric beverages will differ pre- and post-menu labeling intervention among all students?	Chi-square
Student's consumption of caloric beverages will differ pre- and post-menu labeling intervention among the three athletic classifications?	Chi Square

CHAPTER 4

RESULTS

Demographics of survey respondents are provided in Table 3. In the pre-intervention, a total of 216 students answered the survey, while a total of 171 students answered the post-intervention survey. There were a total of 95 (24.5%) respondents who identified themselves as NCAA athletes, 88 (22.7%) who identified themselves as recreational athletes, and 204 (52.7%) who identified themselves as a non-athlete in the pre- and post-surveys. Fifty-nine percent of respondents were male and 41% were female in the pre-intervention survey while the post-intervention survey contained 49% male participants and 51% female participants. Notably, 41.2% and 40.4% of respondents were classified as freshman in the pre- and post-intervention surveys respectively, representing a large part of the study population. The age group 18-19 years of age was the largest age group represented in the pre- and post-survey at 50.9% and 48.8%, respectively. Throughout the study, a significant portion of survey respondents classified themselves at white at 73.9% total. There was also a majority of respondents who were either normal weight or overweight, which was calculated using the self reported height and weight and comparing the body mass index to the CDC BMI guidelines.

Table 3 *Demographic Information of Survey Respondents*

Characteristics	Category	Total		Pre-Survey		Post-Survey	
		N	*%*	*N*	%	*N*	%
Gender	Male	212	54.8	128	59.3	84	49.1
	Female	175	45.2	88	40.7	87	50.9
Age	18-19 years	194	50.0	110	50.9	84	48.8
	20-22 years	160	41.2	91	42.1	69	40.1
	23-24 years	16	4.1	6	2.8	10	5.8
	25 years and older	18	4.6	9	4.2	8	5.2
Race/Ethnicity	White	286	73.9	157	72.7	130	75.6
	African American	46	11.9	26	12.0	20	11.6
	Asian	41	10.6	24	11.1	17	9.9
	Other	14	3.6	9	4.2	4	2.9
School Classification	Freshmen	158	40.7	89	41.2	69	40.4
	Sophomore	76	19.6	42	19.4	34	19.9
	Junior	94	24.2	52	24.1	42	24.6
	Senior	41	10.6	23	10.6	18	10.4
	Master's or Doctoral Graduate Student	18	4.8	10	4.6	8	4.7
Athletic Group	NCAA Athlete	95	24.5	64	29.6	31	18.1
	Recreational Athlete	88	22.7	46	21.3	42	24.6
	Non-athlete	204	52.7	106	49.1	98	57.3
BMI**	Underweight	14	3.6	6	2.7	8	4.6
	Normal Weight	136	35.1	85	39.4	51	29.8
	Overweight	128	33.1	60	27.8	68	39.8
	Obese	59	15.2	24	11.1	35	20.5
	Missing Data*	50	12.9	41	19.0	9	5.2

**Missing Data includes participants who did not provide height and weight on their survey.*

***BMI Classification:*

Underweight =≤18.49
Normal Weight =18.5-24.9
Overweight =25.0-29.9
Obese =30+

Demographics of the three self reported athletic classifications (NCAA athlete, recreational athlete, and non-athlete) are provided in Table 4. 74.7% of NCAA athlete respondents and 76.1% of recreational athlete respondents were male. In contrast, only 36.3% of non-athlete respondents were male. The youngest age category (18-19 years) is the highest percentage category for both NCAA athletes and non-athletes, but not recreational athletes. Recreational athletes have the highest percentage of responses from the age group 20-22 years.

Table 4
Demographic Information of Three Athletic Classifications

		NCAA Athlete	Recreational Athlete	Non-Athlete
Gender	Male	71 (74.7%)	67 (76.1%)	74 (36.3%)
	Female	24 (25.3%)	21 (23.9%)	129 (63.2%)
Age	18-19 years	55 (57.9%)	38 (43.2%)	101 (49.5%)
	20-22 years	38 (40.0%)	41 (46.6%)	80 (39.2%)
	23 years and older	2 (2.2%)	9 (10.2%)	23 (11.3%)

The research question, "Do student's pre- and post- consumption of calories change as an effect of a point-of-purchase menu labeling intervention in a university foodservice setting," was analyzed utilizing a factorial ANOVA of pre- and post-survey respondents' consumption. The main effect of nutrition information was not significant, $F(1,379)=0.29$, $p=0.346$.

The research question, "Does pre- and post-consumption of calories differ between three athletic classifications as an effect of point-of-purchase menu labeling intervention in a university foodservice setting," was subjected to a factorial ANOVA. The factorial ANOVA had two levels of nutrition information (pre- and post-menu labeling) and the three athletic groups (NCAA athlete, recreational athlete, and non-athlete). The difference among athletic groups was not significant, $F(2,379)=0.48$, $p= 0.106$. The pre and post intervention calorie average for the three athletic classification and all participants can be seen in Table 5.

Table 5
Calorie Averages Pre- and Post- Menu Labeling Intervention

	Pre Intervention Calorie Average	Post Intervention Calorie Average
All Students	656.90	571.67
NCAA Athletes	764.61	591.21
Recreational Athletes	630.65	661.64
Non Athletes	603.27	526.94

The research question, "Is there a difference between student attitudes regarding menu labeling pre- and post-menu labeling intervention," was analyzed based on the survey question "I believe nutrition labels in The Grill at 1810 will influence me to choose lower calorie and/or healthier options." There was no significant difference when examining all respondents' attitudes towards nutrition information pre- versus post-intervention, $F(1, 379) = 0.32$, $p = 0.57$.

The research question, "Is there a difference between student attitudes regarding menu labeling between the three self reported athletic classifications pre- and post-menu labeling intervention," was analyzed based on the survey question "I believe nutrition labels in The Grill at 1810 will influence me to choose lower calorie and or/ healthier options." Respondent's attitudes towards nutrition information based on self reported athletic classification yielded an F ratio of $F(2, 379) = 3.83$, $p < 0.05$, indicating that there was significant differences among the three self reported athletic classifications. Specifically, *Bonferroni post hoc* test revealed that the mean scores of NCAA athletes' attitudes towards nutrition information was significantly lower than the other two groups. The interaction effect between the athletic classification groups, however, was not significant, $F(2, 379) = 0.49$, $p = 0.61$.

Table 6
Comparison of Attitudes toward viewing Nutrition Information by Athletic Type

	Pre-Survey		Post-Survey	
	M	*SD*	*M*	*SD*
NCAA Athlete	4.20	0.72	4.13	0.99
Recreational Athlete	4.50	0.59	4.38	0.66
Non-Athlete	4.38	0.68	4.43	0.80

Note: Dependent variable was measured on a 5 point Likert scale.

Respondent's behavior of viewing The Grill at 1810 nutrition information was analyzed utilizing the one behavioral question on the survey, "I have looked at nutrition information on the University of Mississippi The Grill at 1810 website." The two-way factorial ANOVA examined two levels of pre- and post-menu labeling behavior and three levels of athletes (NCAA athlete, recreational athlete, and non-athlete) (*see* Table 6). Using *Bonferroni post hoc* test comparing the mean scores of the athletic classifications, NCAA athletes were significantly less likely to view The Grill at 1810 nutrition information in both pre- and post-intervention than the other athletic groups, yielding an F ratio of $F(2, 381) = 3.38$, $p < .05$. While there was an overall positive significant difference among all the athletic groups viewing behavior from pre- to post-intervention, the interaction effect between the athletic classification groups was not significant, $F(2, 381) = 0.54$, $p = .58$.

Table 7
Comparison of Viewing Nutrition Information by Athletic Classification

	Pre-Survey		Post-Survey	
	M	*SD*	*M*	*SD*
NCAA Athlete	2.17	1.29	2.51	1.43
Recreational Athlete	2.74	1.42	2.90	1.46
Non-Athlete	2.50	1.35	3.02	1.32

Note: Dependent variable was measured on a 5-point Likert scale.

Respondent's self-reported frequency of caloric beverage consumption was subjected to descriptive statistics as well as chi square. Caloric beverages were consumed by 48.6% of respondent's pre- menu labeling intervention, while 50.6% of respondents consumed caloric beverages post- menu labeling intervention (*see* Table 7).

Table 8
Descriptive Statistics for Caloric Beverage Consumption Among All Students Pre- and Post-Restaurant Menu Labeling

	Caloric Beverage	Non-Caloric Beverage	Chi-square Value
Pre-Total	105	111	.149
Pre- Percentage	48.6%	51.4%	p=.106
Post-Total	87	85	
Post- Percentage	50.6%	49.4%	p=.080

The research question, "Does student's consumption of caloric beverages differ pre-and post-menu labeling intervention," was analyzed utilizing respondent's self-reported beverage consumption. A chi square test of all survey respondents revealed that the main effect of nutrition information on beverage consumption was not significant, (p= .106).

The research question, "Does student's consumption of caloric beverages differ pre- and post-menu labeling intervention among the three athletic classifications," was analyzed utilizing respondent's self-reported food consumption. A chi square revealed that there was no significant difference in caloric beverage consumption between pre- and post-menu labeling intervention and the three levels of athletic classifications (F= 3.073, p=.080). The other four questions on the research survey, "I believe nutrition information affects food choices at least sometimes," "I think it is a good idea to make nutrition information available for each meal in the dining hall," "I would feel embarrassed holding up The Grill at 1810 line to read a nutrition label, and "I

would make healthier selections when nutrition information is provided on the menu" were analyzed; no significance was revealed. Mean values of responses are provided in Table 9.

Table 9
Mean Values of Answers to Survey Questions with Insignificant Values

Survey Question	Pre			Post		
	NCAA Athletes	Recreational Athletes	Non-athletes	NCAA Athletes	Recreational Athletes	Non-athletes
Believe information affects food choices	4.00	4.41	3.97	4.29	4.09	4.01
Think it's a good idea to make information available	4.20	4.50	4.38	4.12	4.38	4.43
Would feel embarrassed to hold up line	3.42	3.71	3.10	2.84	2.81	2.84
Would make healthier selections	3.78	4.30	3.96	3.94	4.19	4.09

CHAPTER 5

DISCUSSION

The purpose of the study was to explore college students' attitudes towards restaurant menu labeling in a university dining hall and their behaviors pre and post a nutrition labeling intervention, which provided the menu items' calories. A unique component of this study was that respondents were differentiated into groups based on their athletic classification (NCAA athlete, recreational athlete, non-athlete). The Grill at 1810 is a university dining hall where this study took place. Uniquely, The Grill at 1810 is an "all you can eat" dining hall, meaning patrons pay upon entering the dining hall and can eat as much as they want. The salad bar, pizza bar, soup, and beverages are all self-service, while the traditional "hot food" line, smoothies, and pasta bar are served by a foodservice employee. The food consumption survey asked for everything the student ate while at The Grill at 1810, but for the purpose of this study calories from the "hot food" line and pizza bar were used because those were the items for which menu labeling was posted.

Study Participants

The participants for this study were current college students at The University of Mississippi. With nearly all the respondents being between 18 and 22 years old, the majority of participants in this study were classified as what is known as Generation Y (DeVaney, 2015). The Gen Y population is interested in health and generally want to see health information on

menus (Ellison, et. al., 2013; Roseman, et. al., 2016). While a majority of Gen Yers state they want to see menu labeling on restaurant menus, labeling tends to not change their consumption patterns (Ellison, et. al, 2013; Roseman, et. al., 2016).

Unique to this study of college students, the participants were classified based on their athletic status: NCAA athlete, recreational athlete or non athlete (Current Student-Athletes, 2016; Mohalijah, et. al., 2015). College students generally tend to consume foods higher in calories and fat foods upon beginning college and decrease their consumption of fruits and vegetables (Christoph, et. al., 2016; Driskell, et. al., 2006); while college students who are also athletes tend to eat diets higher in lean proteins, fruits and vegetables (Christoph, et. al, 2016; Driskell, et. al. 2006; Mohlijah, et. al., 2015). Athletes also spend, on average, 20 hours a week training or participation in training sessions and tend to consume food based on how the food will enhance their performance (Burkhart & Pelly, 2013). A recent study examined how often physically active consumers read nutrition labels when making decisions about supplements they want to buy (Gabriels & Lambert, 2013). The study found that while 70% of respondents paid attention to the nutrition label in order to verify that the supplement was free of banned substances, only 40% of respondents reported that they relied on the nutrition label to understand the nutritional ingredients of the supplement. This finding may indicate that while athletes are interested in understanding if the supplement is safe for them to consume, they may be less interested in reading information about the nutritional quality, and therefore may be less interested in reading menu labeling.

Calories

When considering all students in the study, as well as the three separate self reported athletic classifications, this study found no significant change in student calorie consumption

between the pre and post menu labeling intervention. While none of the consumption changes were significant, the largest average calorie change was within the NCAA athletic classification, which may be because they tend to be more interested in the way they are effectively feeding their body, rather than caloric content (Burkhart & Pelly, 2013). In addition, the University of Mississippi employs a Registered Sports Dietitian who provides educational opportunities for the athletes on consuming proper amounts of food when eating for optimal performance. Non-athletes as well as recreational athletes may not have the same exposure to education by a Registered Dietitian.

This study is similar to other studies that have found that Gen Y's are likely to not decrease their calorie consumption when presented with restaurant menu labeling (Ellison, et. al., 2013; Roseman, et. al., 2016). Previous literature has focused on change in calorie consumption due to restaurant menu labeling in the general adult population (Chu, et. al., 2009; Elbel et al., 2013; Roberto, et. al., 2010; Stran, Knol, et. al., 2016), rather than specifically examining only Gen Y consumers. While the Gen Y population generally claims to want to see restaurant menu labeling provided at point of purchase, they are not changing their consumption because of the labeling (Ellison, et. al., 2013; Roseman, et. al., 2016). When examining specifically Gen Y athletes, it has been found that most athletes do not use the nutrition education and knowledge that they have been given when making dietary choices, but instead tend to not reach their recommended macronutrient intake because of diet restriction and pressure from coaches, teammates, parents and themselves to perform at the highest level (Burkhart & Pelly, 2013; Folasire, et. al., 2015).The findings in this study are an interesting addition to the sparse literature looking at the Gen Y population, and specifically Gen Y athletes and menu labeling.

In this study, the lack of calorie consumption change was observed in an all-you-can-eat university dining hall setting, which appears to have not been studied previously. Most previous menu labeling studies were conducted in traditional quick service restaurants (Bollinger, Leslie, et. al., 2011; Breck, Cantor, et. al., 2014; Bruemmer, Krieger, et. al., 2012; Driskell, Meckna, et. al., 2006; Ellison, et. al., 2013; James, Adams-Huet, et. al., 2014; Patient Protection and Affordable Care Act, 2010; Platkin, et. al, 2014). One particular menu labeling study's target population was athletes, but took place in an International Olympic setting (Burkhart & Pelly, 2013). In this setting, the style of the restaurant was not all-you-can-eat, but rather a la carte style where customers ordered a set amount of a particular food item from the menu. Menu labeling interventions have also been observed in a University setting focusing on the Gen Y population before, but not in an all-you-can-eat restaurant setting (Christoph, et. al., 2016; Freedman & Connors, 2010; Martinez, et. al., 2012; Roseman, et. al., 2016). This study looking at menu labeling in an all-you-can-eat university dining hall setting is a unique addition to the literature.

In the same respect, caloric beverage consumption did not change as a result of restaurant menu labeling. While beverage caloric information was not posted on the menu, caloric beverage consumption was examined in this study in order to identify if the restaurant menu labeling of food had an effect on the student's beverage choices, even when students were not provided beverage calories. In this study, restaurant menu labeling on food did not result in students significantly changing their beverage calorie consumption.

Attitudes

Attitudes in this study were examined using five different questions on the pre and post menu labeling intervention survey. Attitudinal questions included, "I believe nutrition information affects food choices at least sometimes," "I think it is a good idea to make nutrition

information available for each meal in the dining hall," "I would feel embarrassed holding up The Grill at 1810 line to read a nutrition label," "I would make healthier decisions when nutrition information is provided on the menu," and "I believe nutrition labels in The Grill at 1810 will influence/influenced me to choose lower calorie and/or healthier options" from a previous study examining respondent's attitudes towards restaurant menu labeling (Martinez, Roberto, et. al., 2012). In this study, only one attitudinal question was statistically significant between athletic classifications, "I believe nutrition labels in The Grill at 1810 will influence me to choose lower calorie and/or healthier options", while the other questions did not find any significant differences between neither pre and post menu labeling intervention nor the three athletic classifications. This question is the only question that specifically referenced menu labels in The Grill at 1810 influencing food choices, which could indicate that college students were not paying attention to menu labels on a daily basis, but were interested in seeing them in the University setting. This finding could be particularly concerning when considering athletes, as eating less calories and eating healthy are not necessarily synonymous, especially when the athlete is training for 20 hours a week.

Based on the results of the study, college student's attitudes towards restaurant menu labeling did not significantly change between pre and post menu labeling intervention. It is important to note that students' attitude towards believing that nutrition information sometimes affects food choices, thinking it is a good idea to provide nutrition information in a dining hall, and believing they would make healthier food selections when nutrition information is provided were high in both pre- and post-intervention responses. In other words, attitudes in favor of nutrition labeling were strong to begin with and remained strong after menu labeling was implemented. This study's finding supports previous studies that Gen Yers want to see nutrition

labeling in restaurants ((Ellison, et. al., 2013; Roseman, et. al., 2016). It also supports the idea that the Gen Y population is generally interested in health and healthy eating.

Uniquely, this study found that NCAA athletes' attitudes towards nutrition labeling was statistically lower than the other two groups. NCAA athletes were less likely to report that they believed menu labeling would influence them to choose lower calorie and/or healthier options. From previous studies, possibly this can be explained by differences in the eating habits of college athletes versus non-athletic college students. College athletes tend to make food decisions based on the nutritional content of the food (Burkhart & Pelly, 2013), while non-athletic college students tend to make food decisions based on how the food tastes and what their peers are consuming (Zigmont & Bulmer, 2015). Because collegiate athletes are already making their food choices based on the nutritional content of the food and are already exposed to nutrition information through Registered Dietitians, coaches, and peers (Burkhart & Pelly, 2013), it seems they may not see the need for nutrition information provided through menu labeling. They also may have weaker attitudes towards believing they would make lower calorie and/or healthier options if menu labeling were present because they already believe themselves to be healthy eaters (Kurka, Buman, et. al., 2014).

This study is similar to a previous study's finding on Gen Y's attitude toward menu labeling in that they generally want to see restaurant menu labeling (Roseman, et. al., 2016). However, differences were found between Gen Y collegiate student athletes and non-athletes, with non-athletes and recreational athletes appearing to be more accepting of the restaurant menu labeling in The Grill at 1810 than NCAA athletes, better matching previous studies on Gen Y's and menu labeling (Ellison, et. al., 2013).

Behaviors

Respondents' behavior was examined using the question on the survey, "I have looked at nutrition information on the University of Mississippi the Grill at 1810 website." The question of whether they had looked at nutrition information on the website was asked because previously, before menu labeling was implemented, that was the main resource where the public could view nutrition information for The Grill at 1810. Also, the researchers were interested in learning if providing menu labeling would cause students to view The Grill at 1810 website's nutrition information because of a peak in interest due to the menu labeling.

The behaviors of viewing nutrition information on the website was not significantly different between pre and post intervention respondents. However, the mean responses indicate that in all athletic categories students tended to view nutrition information on the website site more than before menu labeling was implemented in The Grill at 1810. When examining the three self reported athletic classifications, NCAA athletes were significantly less likely to view nutrition information on The Grill at 1810 website than non athletic college students. This finding was observed in previous studies where researchers added exercise equivalents to the menu label in order to observe the viewing behavior of the menu label. Both studies found that by providing exercise equivalents on menu label, viewing behavior increased (James, et. al., 2014; Platkin, et. al., 2014). Exercise equivalents consisted of providing how many minutes of brisk walking it would take to work off the amount of calories in the food, and the studies found that the menu labeling had more of an effect on the consumer. Presenting the calories in a form that athletes relate to and understand may increase the tendency for them to view nutrition information on the website.

Implications and Limitations

While people, specifically the Gen Y population, are still demanding to see restaurant menu labeling (Ellison, et. al., 2013) putting calories on menus and beverages could be beneficial for restaurants, even if an immediate decrease in caloric intake is not observed. It has been cited that menu labeling can be relatively inexpensive and cost effective for restaurants to implement, especially if the restaurant location utilizes electronic menu boards (Long, Tobias, et. al., 2015). One study reports that since restaurant menu labeling has been implemented, restaurants have reduced entrée calories by 41 calories and may be a cost saving to the food establishment due to less food waste and more traffic to the restaurant because of consumers' desire to view menu labeling (Gortmaker, et. al., 2015).

Information on menu labeling could be helpful when targeting populations in university settings as a means to educate the University consumer. There is a need for further studies investigating the question of whether or not resources should be expended to provide NCAA athletes with restaurant menu labeling in their dining facilities. While there is a some level of desire for enacting restaurant menu labeling laws by legislators and consumers, there is a consistent finding that caloric consumption does not change after caloric information is provided (Breck, et. al., 2014; Chu, et. al., 2009; Elbel et al., 2013; Ellison, et. al., 2013; Long, et. al., 2015; Roberto, Larsen, et. al., 2010; Roseman, et. al., 2016; Stran, et. al., 2016), suggesting it may be important to conduct more research on how to educate consumers on how to use the caloric information found on the menu labels and apply it to their eating behaviors. In regards to the results some studies have seen when presenting calories in terms of exercise equivalents (James, et. al., 2014; Platkin, et. al, 2014), more research should be conducted on this idea in order to further understand the most effective way to implement menu labeling on a University campus. When it comes to an athletic facility, it may be beneficial to explore the possibility of

implementing menu labeling with calorie exercise equivalents in order to have more of an impact on the consumer. However, exercise equivalents need to be thoroughly researched in regards to NCAA athletes in order to prevent a negative impact towards exercise fixation or disordered eating.

Limitations in this study include the fact that the same participants were not included in both pre and post menu labeling intervention surveying. While surveying the exact same individuals both pre and post menu labeling intervention may be considered ideal in order to make equal comparisons, the reality of such efforts were deemed unrealistic. This limitation seems to be a common trend in the current literature due to the fact that the same consumers visiting the same restaurant on each survey day is highly unlikely (Burkhart & Pelly, 2013; Christoph, et. al., 2016; Elbel, et. al, 2013).

Another limitation to this study is the use of self-reported data, which could result in such biases as possibly completing the survey with others and therefore filling in the same answers, and misunderstanding the question and not asking for clarification (Burkhart & Pelly, 2013; Christoph, et. al., 2016). With regards to food and beverage self-reported consumption, some respondent's may have not provided enough detail of their consumption, or incorrectly estimated their consumption amount. However, the self-report limitation was attempted to be controlled by training surveyors to explain the details of the survey to each participant and be available to answer questions if needed.

In addition, the time period between pre and post menu labeling intervention surveys was only 60 days; 30 days before the implementation of menu labeling and 30 days after implementation. Treatment periods in current literature generally range from two to six weeks (Chu, et. al., 2009; Freedman, & Connors, 2010; Platkin, et. al., 2014), with some treatment

periods extending from six months (Elbel, et. al., 2013) to nine months (Elbel, Kursch, et. al., 2009). Even in the 9-month treatment period, there was no significant change in calorie consumption, which may be an effect of desensitization of consumers from the menu labels. A six or nine-month treatment period would not have been possible for this study, as the treatment period had to fit within the timeframe of the University semester. There is no evidence in the current literature that supports a longer treatment period as being beneficial to this particular study.

Conclusion

This study provides insight into the fact that NCAA athlete's attitudes towards restaurant menu labeling are significantly different than their Gen Y counterparts. A unique aspect of this study is that it adds information to the literature regarding all-you-can-eat university and non-university settings, as well as specifically analyzing college students based on self reported athletic classification, both variables not seen in previous studies.

Through this study, it was found that attitude towards restaurant menu labeling were concurrent with previous literature observing that the Gen Y population wants to see menu labeling in restaurants. This study also found that, like other studies analyzing the effects of menu labeling and the Gen Y population, consumption of calories did not change after the menu labeling intervention. Uniquely, this study found that NCAA athletes have significantly lower attitudes and behaviors towards menu labeling than non athletic college students. This finding could support the need for more research to examine NCAA athletes and their use of menu labeling separately from the general Gen Y population.

In conclusion, additional research needs to be conducted to more fully understand why NCAA athletes have a different attitude towards restaurant menu labeling than the two other

athletic classifications (recreational athletes and non athletes), and more specifically why their attitudes are less strong than the general Gen Y population that they are a part of. Also, more effective ways to post menu labeling in a University athletic facility in order to engage athletes more would be beneficial to add to the current literature.

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APPENDIX

Study on Menu Perceptions
The Grill at 1810

You are invited to take part in a research study of student perceptions of menus at away-from-home locations, including menus like the one at The Grill at 1810. You need to be at least 18 years of age to participate in the study. If you are not 18 years old, please return this survey to the person who gave it to you.

The survey takes about 5-10 minutes of your time. All information in the study will be collected from you anonymously: it will not be possible for anyone, even the researchers, to associate you with your responses. There are no anticipated risks associated with participating in this project beyond those normally encountered in daily life. However, you may benefit from knowing your participation is contributing to scientific knowledge and academic research.

Please understand that your participation is voluntary. You do not have to participate, and there is no penalty if you refuse. If you start the study and decide that you do not want to finish, just tell the researcher and turn in your survey.

The University of Mississippi's Institutional Review Board (IRB) has reviewed this study. The IRB has examined that this study meets the ethical obligations required by federal law and University policies. If you have any questions, concerns, or reports regarding your rights as a research participant, please contact the University's IRB at (662) 915-3929 or at irb@olmiss.edu.

Statement of consent: I have read the above information. By completing the survey, I consent to participate in the study.

In advance, we thank you for your time and participation in our study!

Answer all of the following questions, circling the answer that most accurately applies to you.

8. I believe nutrition information affects my food choices at least sometimes.
   A. Strongly agree
   B. Agree
   C. Neither agree nor disagree
   D. Disagree
   E. Strongly disagree

9. I have looked at nutrition information on University of Mississippi's Grill 1810 website.
   A. Strongly agree
   B. Agree
   C. Neither agree nor disagree
   D. Disagree

E. Strongly disagree

10. I believe nutrition information in The Grill at 1810 influenced me to choose lower calorie and/or healthier options.
    A. Strongly agree
    B. Agree
    C. Neither agree nor disagree
    D. Disagree
    E. Strongly disagree

11. I think it is a good idea to make nutrition information available for each meal at the Grill 1810.
    A. Strongly agree
    B. Agree
    C. Neither agree nor disagree
    D. Disagree
    E. Strongly disagree

12. I want to see nutrition information in the Grill 1810.
    F. Strongly agree
    G. Agree
    H. Neither agree nor disagree
    I. Disagree
    J. Strongly disagree

13. I would feel embarrassed holding up the Grill 1810 line to read a nutrition label.
    A. Strongly agree
    B. Agree
    C. Neither agree nor disagree
    D. Disagree
    E. Strongly disagree

Fill out the following table according to what you ate during **this visit** to **The Grill at 1810** by circling the option that best describes the foods you consumed and their amounts. If you did not order a food item, leave that item blank. If you ordered a food item, but did not consume any of it, circle "none." **Be as precise and accurate as possible.**

Fruit and Salad Bar					
Bowl	None	1/4	1/2	3/4	Full portion
Plate	None	1/4	1/2	3/4	Full portion
List the vegetables and fruit you ate:					
Dressing: Mark the one you used, if applicable.					
Balsamic Vinaigrette	How many ladle(s)? _____				
Creamy Caesar Dressing	How many ladle(s)? _____				
Honey Mustard Dijon	How many ladle(s)? _____				
Lite Italian Dressing	How many ladle(s)? _____				
Ranch Dressing	How many ladle(s)? _____				
Thousand Island Dressing	How many ladle(s)? _____				
Yogurt Bar					
Yogurt	None	1/4	1/2	3/4	Full portion
Cottage cheese	None	1/4	1/2	3/4	Full portion
Hot Food					
Roasted Pork Adobo	None	1/4	1/2	3/4	Full portion
California Blend Veggies	None	1/4	1/2	3/4	Full portion
Cheesy Corn Casserole	None	1/4	1/2	3/4	Full portion
International					
Beef Stroganoff	None	1/4	1/2	3/4	Full portion
Egg Noodles	None	1/4	1/2	3/4	Full portion
Roasted Sweet Potatoes	None	1/4	1/2	3/4	Full portion

Steamed Green Peas	None	1/4	1/2	3/4	Full portion

Comfort Food						
Buffalo/BBQ Chicken Wings	None	1/4	1/2	3/4	Full portion	
Old-Fashioned Cole Slaw	None	1/4	1/2	3/4	Full portion	
Twice Baked Potatoes	None	1/4	1/2	3/4	Full portion	
Deli: Circle type of bread, meat, and cheese and indicate amount eaten						
Tortilla	None	1/4	1/2	3/4	Full portion	
Croissant	None	1/4	1/2	3/4	Full portion	
2 slices of bread	None	1/4	1/2	3/4	Full portion	
Turkey	None	1/4	1/2	3/4	Full portion	
Ham	None	1/4	1/2	3/4	Full portion	
Cheese	None	1/4	1/2	3/4	Full portion	
Indicate type condiments you used on your sandwich and how much of each one with as much as accuracy as possible.						
Pizza: circle type of pizza and indicate slices eaten						
Hawaiian Pizza	1/2	1	1 1/2	2	2 1/2	3
Cheese	1/2	1	1 1/2	2	2 1/2	3
Pepperoni	1/2	1	1 1/2	2	2 1/2	3
Soup						
Chicken Noodle Soup	None	1/4	1/2	3/4	Full portion	
Smoothie						
Strawberry-Banana	None	1/4	1/2	3/4	Full portion	
Burger Station						
Hamburger patty	None	1/4	1/2	3/4	Full portion	
Grilled Chicken	None	1/4	1/2	3/4	Full portion	
Hot Dog	None	1/4	1/2	3/4	Full portion	
Cheese slice	None	1/4	1/2	3/4	Full portion	

Indicate type condiments you used on your sandwich and how much of each one with as much as accuracy as possible.

Dessert					
Chocolate Chip Cookie	None	1/4	1/2	3/4	Full portion
Bread					
Garlic Herb Breadstick	None	1/4	1/2	3/4	Full portion
Drinks					
How many glasses did you have?	1/2	1	1 1/2	2	2 1/2
What kind of drink did you have?					
Did you eat anything else not listed above? If so, please list and indicate the amount you ate.					

SOCIO-DEMOGRAPHIC INFORMATION

The following section collects your socio-demographic information. Remember that this survey is completely anonymous. Please circle the answer that describes you.

1. GENDER

   A. Male
   B. Female

2. AGE

   A. 18 – 19 years old
   B. 20 – 22 years old
   C. 23- 24 years old
   D. 25 and older

3. RACE/ ETHNICITY

   A. White
   B. Hispanic or Latino
   C. Black or African American
   D. Native American or American Indian
   E. Asian/ Pacific Islander
   F. Other _____ (please specify)

4. STUDENT CLASSIFICATION

   A. Freshmen
   B. Sophomore
   C. Junior
   D. Senior
   E. Master's Graduate Student
   F. Doctoral Graduate Student

5. ATHLETIC CLASSIFICATION. Which category **best describes** you?

   A. NCAA athlete is a person who currently plays a sport regulated by the NCAA.
   B. Recreational athlete is someone trained to win in competition, for example a person who plays a club sport or a marathon runner.
   C. Anyone who does not fit either of the above categories, including people who regularly exercise.

6. WEIGHT MANAGEMENT STATUS

   A. I am currently limiting my calorie intake and/or trying to lose weight.
   B. I am currently increasing my calorie intake and/or trying to gain weight.
   C. I am neither limiting nor increasing my calorie intake, and am trying to maintain my weight.

7. THIS IS THE FIRST TIME I HAVE VISITED THIS RESTAURANT

   A. Yes
   B. No

8. HOW OFTEN DO YOU VISIT THE GRILL at 1810?

   A. More than once a day
   B. Once a day
   C. More than once per week
   D. Once per week
   E. More than once per month
   F. Once a month
   G. Less than once per month

9. PAYMENT METHOD. How did you pay for today's meal?

   A. Cash/Credit card
   B. Student Meal Plan

10. HEIGHT _____

11. WEIGHT_____ pounds

VITA

Education

University of Mississippi, University, Mississippi — August 2016-Present
Master of Science in Food and Nutrition Services
Coordinated Program in Dietetics, Dietetic Intern

Graduate Assistantship**,** University of Mississippi — August 2016-May 2017
Dr. Melinda Valliant, University of Mississippi Athletics

University of Mississippi, University, Mississippi — August 2012-May 2016
Bachelor of Science in Dietetics and Nutrition
Minor: Psychology
University of Mississippi Study Abroad, Florence, Italy — May 2014

Research

Abstract Presentation, Author, Presenter
Behaviors and Attitude Toward Restaurant Menu Labeling Among NCAA Athletes, Recreational Athletes, And Non-Athletes
Ellen Mitchell, Dr. Hyn-Woo Joung, Dr. Mary Roseman, Dr. Melinda Valliant
The 23rd Annual Graduate Education & Graduate Student Research Conference in Hospitality and Tourism

Abstract Presentation, Presenter
Relationship Between McDonald's Users Perceptions of Food Attributes and Usage Frequency
Claire Adams, Dr. Mary Roseman, Dr. Eun Kyong Choi
The 23rd Annual Graduate Education & Graduate Student Research Conference in Hospitality and Tourism