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Do Calories Count? Examining the Impact of Calorie Awareness on Food Selection

April V. Rose

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by

April V. Rose

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By

April V. Rose, MA QMHP

has been approved

at the

Graduate School of Clinical Psychology

George Fox University

as a Dissertation for the PsyD degree

Signatures:

Kathleen Gathercoal, PhD,

Mary Peterson, PhD, ABPP

Jeri Turgesen, PsyD

Jim Foster, PhD

4/27/18

Date

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April V. Rose

Graduate School of Clinical Psychology

George Fox University

Newberg, Oregon

Abstract

This study examined whether purchasing behavior of patrons in a college campus café changed when calorie information was provided. It compared weekly sales on food items before and after calorie information was posted for a group of target items (n = 6) that had calorie counts posted in fall 2017 and two groups of comparison items. Archival sales data were collected using the existing point-of-sale system. Sales of target items, which had calories displayed next to them, dropped significantly when compared with sales of the same items during the previous year. Sales of target items also dropped significantly when compared with sales of items matched either on food type or average sales in the year before posting calorie information. Findings indicate that posting calorie information had a significant effect on sales of items for which calorie information is displayed. Interestingly, most (80%) of the patrons of the café reported they were unaware of the calorie postings. Future research may focus on the impact of posting calorie information on the behavior of specific populations, settings, and formats. The addition of contextual information such as recommended daily caloric intake may provide additional perspective.

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Chapter 1

Introduction

Obesity has become a problem of global attention. Overweight and obesity ranges are generally calculated using a common measure called body mass index (BMI). Individuals with a BMI in the range of 25.0 – 29.9 are considered overweight, while people with a BMI 30 and higher are classified obese (National Institute of Diabetes and Digestive and Kidney Diseases [NIDDK], 2012). More than two thirds of the United States adult population, aged 20 and older, are considered overweight or obese and approximately 17% of children ages 6–19 fall within overweight or obese categories. (Centers for Disease Control, 2015). Obesity is associated with a wide range of health concerns, including diabetes mellitus II, polycystic ovarian syndrome (reduces fertility), high cholesterol, sleep apnea, fatty liver and gall bladder diseases, stroke, osteoarthritis, urinary incontinence, and some cancers (NIDDK, 2012). The longitudinal Coronary Artery Risk Development in Young Adults (CARDIA) study found an increase in risk factors related to cardiovascular disease (Truesdale et al., 2006). The CARDIA study also demonstrated that individuals who maintain a stable BMI over time experience lower incidence of metabolic syndrome (Lloyd-Jones et al., 2007). Obesity has been correlated with impairments in the ability to regulate processes of cognition, emotion, and/or behavior in adolescent and young adult females (Goey et al., 2016). There is also an association between unhealthy weight control behaviors and high risk sexual behaviors among college women (Eisenberg et al., 2005).

Given the pervasive impact of obesity on health, effective tools and policy are of paramount importance.

Interventions

Nutrition is a fundamental component of health and wellness, while food choice, calorie intake, and item content are gaining focus as areas of change through which healthy eating behaviors might be promoted. The Nutrition Labeling and Education Act (NLEA) was first passed in 1990 (H.R. 3562, 101) by the United States Department of Agriculture (USDA) in an early effort to bring consumer attention to nutrition facts associated with packaged foods. More recently, provision 4205 of the Patient Protection and Affordable Care Act (Food and Drug Administration [FDA], 2014) established requirements for restaurants with 20 or more locations to provide calorie and other nutritional information for food items on menu boards. The effort to empower consumers with the information necessary to make informed choices about what they eat is part of the growing movement toward a more health conscious approach to nutrition.

Research on ways to intervene in the trend toward obesity has begun to accumulate in recent years. Various approaches such as nutrition education, consumption awareness, and calorie counting, are among the topics under investigation to identify the most effective means of empowering consumers to make health-conscious food choices. For instance, a field study conducted in a fast food sandwich restaurant on a sample of 638 diners found that both information and convenience can affect behavior (Wisdom et al., 2010). Researchers Streletskaya et al. (2015) examined the behavioral impact of three types of menu label formats: calorie-content posting, complete nutrition facts panel, and health-related claims. They found that calorie posting was associated with the highest calorie reduction, but the nutrition facts

panel, “resulted in most sizable decreases in problematic nutrient content such as empty calories and calories from fat and added sugar” (Streletskaya et al. (2015, Abstract).

Starbucks was one of the frontrunners in the movement to explore the impact of calorie posting on purchase behavior, and produced some of the first outcome data on this intervention. Starbucks generated information not only on purchase behavior at all New York City stores, but also individual level food choices through their anonymous cardholder sample as well as in-store customer survey results collected before and after calorie postings. Analysis of this data found that calorie posting did influence consumer purchases at Starbucks, with a 6% average reduction of calories per transaction and almost all of the effect associated with food purchases over drinks (Bollinger et al., 2011). Regrettably, research outcomes have not consistently demonstrated calorie posting as an effective tool for behavior change. Loewenstein (2011) argued that implementation of calorie labeling has not been supported by evidence to show that it succeeds in its goal of reducing caloric intake. He further notes that, in some cases, calorie posting has demonstrated a paradoxical effect of increase in calorie consumption. Unfortunately, there are few well-designed studies which have investigated the effect of posting the calorie content of foods on their purchase in restaurants.

Two meta-analyses support this variability of responses to posting calorie count information. Young et al. (2011) studied the effect of point-of-sale calorie posting and calorie selection in a meta-analysis of eight studies. Their report appeared as a journal summary of a poster presentation on Wellness and Public Health at the conference of Health, Wellness and Society. Their analysis yielded mixed findings, with half of the studies showing a slight but insignificant decrease in caloric intake and the other half showing a slight and insignificant increase. Specifically, among four before-after studies conducted in real world settings, two

showed a slight decrease in caloric value with point-of-selection calorie posting and two showed a slight increase, but no change exceeded 30 kcal in either direction. Among four randomized controlled trials (RCTs) conducted in laboratory settings, two showed a small decrease in caloric value with point-of-selection calorie posting and two showed an increase. Unfortunately, none of the references for the reviewed articles were provided so further critique of these studies is not possible.

A second meta-analysis, by Swartz et al. (2011), reviewed seven articles published between 2006 and 2011. Of the seven studies, "Two studies reported that calorie menu labels reduced calories purchased, one reported significant reductions in calories purchased at some chains (but not others), three reported no effect on calories purchased and one reported a slight increase in calories purchased," (Swartz et al., 2011, p. 2). Two of their reviewed studies were conducted in laboratory settings and five were conducted in naturalistic settings. Of the five studies conducted in naturalistic settings, three surveyed participants outside the restaurants after their purchases were made and two studies involved comparisons of monthly sales data before and after calorie counts were posted.

These two meta-analyses reveal that only nine naturalistic studies of calorie count postings have been published and only two of those studies have used a measure other than self-report as an outcome. One of these two studies (i.e., Chu et al, 2009) tracked changes in dining hall purchases by college students before and after entrée calorie counts were posted at The Ohio State University. Given the paucity of studies and variability in outcomes on this topic, additional research is warranted to clarify whether calorie information is a viable means of influencing food consumption behaviors. The severity of biological and psychological consequences associated with being overweight or obese provides strong motivation to

investigate preventative measures and ways in which eating behaviors can be influenced toward healthy choices. This is especially important with regard to vulnerable populations, such and children and young adults who are in a formative stage of life and may benefit from early intervention.

Youth and young adult obesity represents an important concern, and college undergraduates represent one population that is particularly vulnerable regarding healthy food choice. Young adults attending university are experiencing their first taste of freedom, and meals are one activity in which students begin to exercise their independence. Students are likely to have snack foods in their dorm room in addition to a university meal plan providing 14 or more meals per week (Nelson & Story, 2009). Research finds that, as university students adjust to the increased demands of the college environment, physical activity level drops and weight increases (Butler et al., 2004). Longitudinal observation of students from freshman through senior year further elucidates this perspective. Racette et al. (2008) found that prevalence of obesity and overweightness increased significantly during this period. Most students consumed fried foods and high-fat fast foods at least twice weekly and 71% of the study sample (n = 204) ate fewer than the recommended number of daily servings of fruit and vegetables. Additionally, Racette et al. (2008) found that male students gained more weight than female students over the same period.

The vulnerability of the college student population, in convergence with the promotion of calorie posting as a tool for behavior change and the variability of data supporting this intervention as effective, creates strong motivation to further investigate calorie posting as a means of promoting healthy food choice. The current study takes the opportunity to further examine calorie posting in a naturalistic setting as an intervention to promote behavior change in

college students. It was hypothesized that calorie posting would change the purchasing patterns of students in a college campus café.

Chapter 2

Methods

Participants

The goal of this research was to examine whether posting calorie information on food items influenced purchasing behavior. Archival sales data from an on-campus café at a small liberal arts college in the Pacific Northwest were compared for two periods. In the initial time period, prior to calorie count postings, data were reported weekly for the period from August 29, 2016 to December 15, 2016 and the second time period, during calorie count posting, data were collected for the 16-week period in 2017 from August 28th to December 15th. These sales data provided the number of items sold per day, the type of each item sold, and the item cost.

Demographic data and responses to a survey about the influence of posting calorie counts were provided by café patrons during December 2017. Survey respondents (n = 157) were primarily undergraduate students (68%; grad students = 6.4%; faculty 23.6%), individuals who lived off campus (63%). Women (75.8%), and European-American (72.5%). The sample had a mean age of 26.72 years (SD = 12.65), but the modal age group was 18 to 23 years old (71%). As an incentive to complete the questionnaire, survey participants were randomly selected to win one of 10 free house coffees from the café, with a maximum value of $1.65 each. The questionnaire incorporated informed consent and researcher contact information but did not disclose the purpose of the questions or the nature of the study.

Materials

Archival sales data were collected using the existing point-of-sale system. Sales for the two 16-week time periods were printed out by the café manager with separate categories for each food item. Calorie information for food items was provided by Bon Appetit, the campus food service vendor.

Demographic information was gathered using a short internet survey. The link for the survey was distributed through campus email. The survey included questions about age, undergraduate year, type of customer and food item(s) purchased. Demographic data collected included age, gender, ethnicity, type of customer (undergraduate, graduate, faculty, or guest) and campus residency status. Several additional questions were asked, including which food items were purchased (coffee drink, bakery item, sandwich, etc.), whether the calorie information was noticed and whether it influenced the purchase, and respondent's perception of estimated calories in comparison with actual calories.

Procedure

This study was approved by the Human Subject Research Committee as well as the Resident District Manager for Bon Appetit Management Company at George Fox University prior to distribution of the survey. This study employed point of sale data that is archival in nature and reflects sales data for matching items and for matching months before and after calorie information was posted next to food items in the cafe. The pre-calorie count data were collected in the 2016 fall semester and data following calorie posting was collected during the fall semester 2017. Calorie information was posted both on the wall-mounted menus and in display cases adjacent to food items. The demographic data were collected electronically during the month of December 2017.

Chapter 3

Results

This study examined food item purchasing behavior before and after calorie information was posted on items that did and did not have calorie counts posted in the fall 2017 semester. Point of sales data were provided for an average of 92 items sold each week in the four months of fall Semester 2016 and 88 items sold weekly during fall semester 2017. Of these items, a mean of 79 items were sold each week in both years. Calorie counts were posted for 6 of the 79 food items sold in the café during both the fall of 2016 and the fall of 2017.

Table 1 shows the group of six items that did have calories posted in the fall of 2017 and a group of six items, roughly similar in calorie content and food type, which did not have calories posted (these serve as comparison Group 1). All of the calorie counts were presented as ranges and were provided by Bon Appetit.

The number of weekly sales during fall semester 2016 and fall 2017 were highly variable. An examination of the sales data revealed that some weeks in both years had very few sales. Specifically, the sales during weeks 1 (the first week of classes), 6 (mid-semester break), 13 (Thanksgiving), and 16 (Finals) were significantly lower than for the remaining 12 weeks, therefore the data for weeks 1, 6, 13, and 16 were excluded from the analysis. This significantly reduced the variability in the data. The weekly sales data for the calorie posted and not-posted groups for fall 2016 and 2017 are displayed graphically in Figure 1.

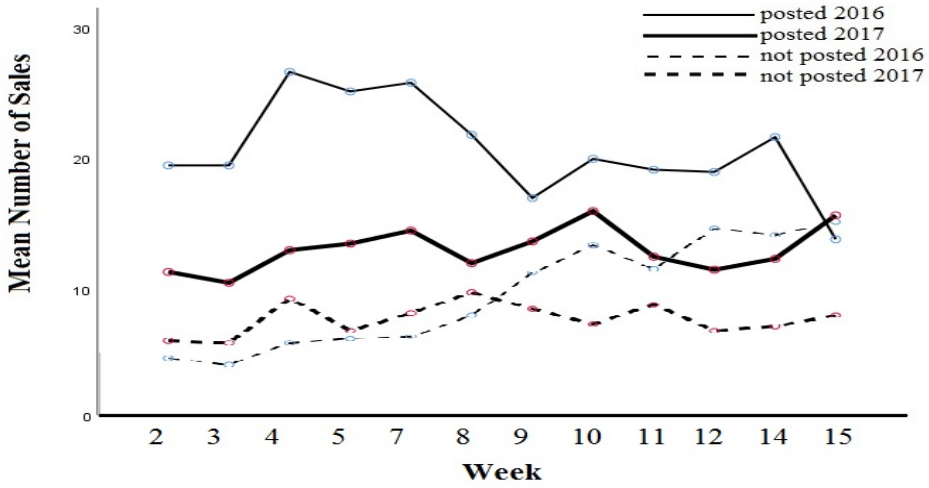
Table 1:

Calorie Counts of Selected Items that did have Calorie Contents Posted and Comparison Group 1, Matched in Food Type and Calories.

Item that did NOT have calories posted	calories	calories	Item that DID have calories posted
Donut	270	280-310	Bagel
Artisan Bread	250	250-310	Cinnamon Roll
Artisan Toast	255	270-410	Croissant/Danish
Rice Krispy treat	440	340-460	Cookie
Baked Bread	420	380-420	Muffin
Brownie	460	510-600	Scone

Figure 1

Mean Number of Sales for 2016 and 2017 Fall



The mean number of weekly sales during fall semester 2016 and fall 2017 are shown in Table 2 for the group of items that did and the group that did not have calorie counts posted

during the fall 2017 semester. The sales data for the calorie posted and not-posted groups for fall 2016 and 2017 are displayed graphically in Figure 2.

Table 2:

Mean Number of Sales During Fall Semester 2016 and Fall 2017

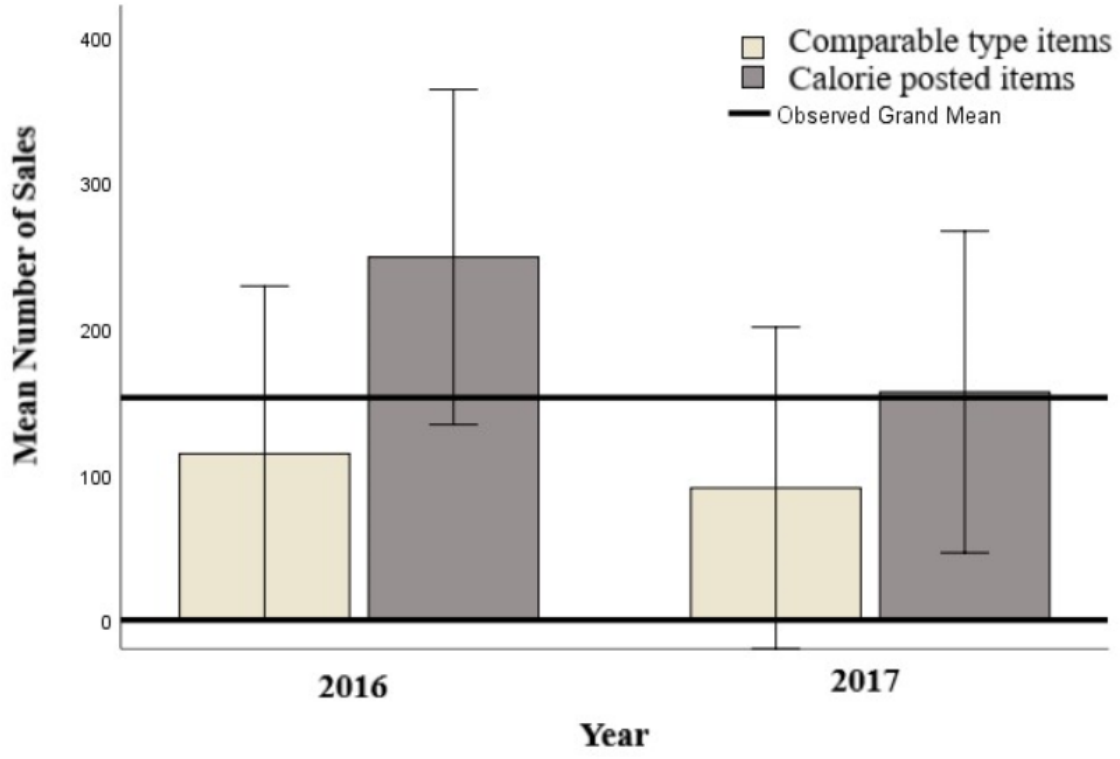
	Fall semester 2016		Fall semester 2017	
	M	*SD*	*M*	*SD*
Items that had calories posted	249.17	143.30	156.50	121.24
Items matched on type of food	114.67	106.90	90.67	121.39

A 2 (groups) by 2 (years) repeated-measures ANOVA was conducted to examine whether the total number of items sold in the two years differed for groups of items that did and did not have their calories posted in fall 2017 semester. All the assumptions of an ANOVA were tested and met. Results show that there was a main effect of year, $F(1,10) = 32.93$, $p < .001$, $\text{eta}^2 = .77$ (a large effect). There was no main effect of posting the calories, $F(1,10) = 2.01$, $p = .19$, $\text{eta}^2 = .17$ (a large effect). However, there was an interaction of year and calorie posting, $F(1,10) = 11.68$, $p = .007$, $\text{eta}^2 = .54$ (a large effect). The interaction indicates that sales patterns for groups of items that did and did not have their calories posted differed significantly in the two time periods.

Unfortunately, the most striking result from this analysis is that the two groups of items were not comparable, as revealed by the main effect for group. Although this main effect was not statistically significant, the effect size for the difference was large and the power was small

Figure 1:

Mean Number of Sales in 2016 and 2017 Fall Semester for the Group of Items with Calories Posted and a Matched Group of Comparable Type Items



(Power = .25), indicating that the failure to achieve statistical significance was probably due to a small number of items in each group (n = 6). An analysis using GPower (Faul, Erdfelder, Buchner, & Lang, 2009) revealed that groups of 15 items would have resulted in a statistically significant difference between the two groups.

A second 2 (groups) by 2 (years) repeated-measures ANOVA was conducted with a different group of comparison items. The items in the second comparison group were matched with the six items that had calories listed on the basis of comparable total sales in 2016. The total 2016 sales for the target items that had calorie contents posted in 2017 and the items in

comparison Group 2, which were matched in 2016 total sales with the target items, are shown in Table 3.

The mean number of weekly sales during fall semester 2016 and fall 2017 are shown in Table 4 for the group of target items that had calorie counts posted during the fall 2017 semester and the items in the second comparison, which were matched with the target items on the basis of 2016 sales.

Table 3:

Total 2016 Sales for Selected Items that had Calorie Contents Posted in 2017 and Items in Comparison Group 2, Matched in 2016 Total Sales.

Item that did NOT have calories posted	2016 total sales	2016 total sales	Item that DID have calories posted
Artisan Bread	124	119	Cinnamon Roll
Breakf bread	136	136	Scone
CaramMach	220	216	Croissant/Danish
Artisan Toast	386	338	Cookie
SM Soup	435	411	Bagel
Flatbread	584	567	Muffin

All the assumptions of an ANOVA were tested and met for the second 2 x 2 repeated-measures ANOVA. Results show that there was a main effect of year, $F(1,10) = 20.54$, $p = .001$, $eta^2 = .67$ (a large effect). There was no main effect of item group, $F(1,10) = 0.31$, $p = .59$, $eta^2 = .03$ (a small effect). However, there was an interaction of year and calorie posting, $F(1,10) = 8.32$, $p = .016$, $eta^2 = . 45$ (a large effect). The interaction indicates that sales patterns for groups

Table 4

Mean Number of Sales During Fall Semester 2016 and Fall 2017 for Target Items and Sales-Matched Items.

	Fall semester 2016		Fall semester 2017	
	M	*SD*	*M*	*SD*
Items that had calories posted	297.83	174.21	192.83	152.03
Items matched on 2016 sales	314.17	184.04	290.83	174.21

of items that did and did not have their calories posted differed significantly in the two time periods. These results are displayed graphically in Figure 3.

A series of *t*-tests were used for post hoc analysis. An independent samples *t*-test demonstrates that sales in 2016 of target items did not differ significantly from the items in comparison Group 2, $t(10) = -1.85$, $p = .10$, $d' = .09$ (no effect). This is not surprising as the groups were matched on 2016 sales data. As expected, a paired-samples *t*-test revealed that the sales of target items declined significantly in 2017, relative to 2016, $t(11) = 4.09$, $p = .002$, $d' = 1.18$ (large effect size). Surprisingly, sales in 2017 of target items did not have a statistically significant difference from the items in comparison group 2, $t(10) = -0.94$, $p = .37$, $d' = .60$ (a moderate effect size).

The survey results reveal that 80% of the respondents said they had not noticed the calorie information posted near food items in the café and 84% said that calorie information would not have influenced their food selection. The respondents who noticed the calorie count postings ($n = 32$) differed significantly in their food selection than did the respondents who did not notice the postings ($n = 125$), $Chi^2 (1) = 41.55$, $p < .001$. In fact, about half (53%) of the

Figure 2

Mean Number of Sales in 2016 and 2017 Fall Semester for the Group of Items with Calories Posted and a Group of Type Items Matched for 2016 Sales.

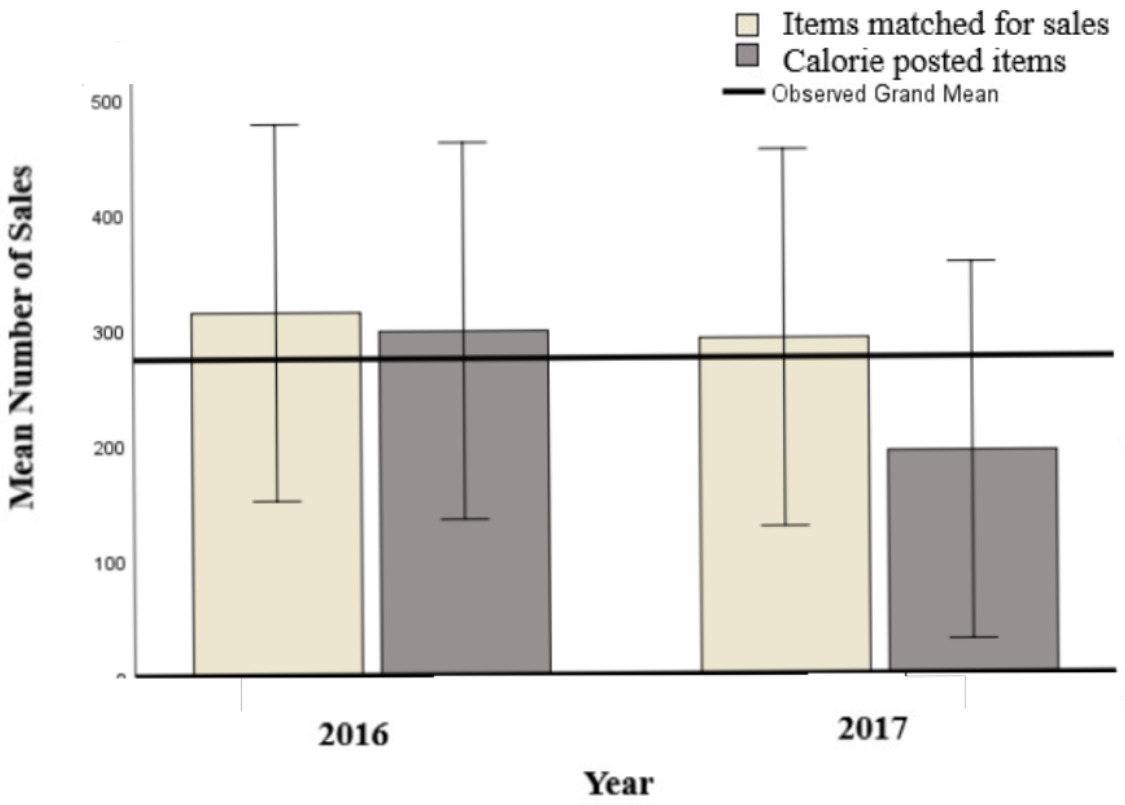


Table 5

Purchases by Respondents Who did and did not Notice the Calorie Postings

Did you notice the calories information posted by food items?	Did posted calories influence your purchase today?	
	Yes	No
Yes	17	15
No	8	117

respondents who noticed the calorie count postings said they were influenced by the postings and most (63%) said their own estimates were comparable to the posted calorie counts. The respondents who noticed the calorie count postings did not differ significantly from the respondents who did not notice the postings with regard as to whether they were undergraduate students or others, Chi^2 (3) = 3.36, p = .34, or whether they lived on or off campus, Chi^2 (3) = 0.56, p = .45. Gender could not be examined because all but one of the participants who noticed the calorie count postings were female.

Chapter 4

Discussion

This study examined whether purchasing behavior of patrons in a college campus café changes when calorie information is provided on food items. It compared sales on food items before calorie information was posted with sales during calorie posting. The findings indicate that posting calorie information had the effect of reducing sales of items for which calorie information was displayed. Sales of items with calories displayed next to the item dropped significantly when compared with sales of comparison group items and with the same items during the same time period the previous year.

As discussed by Loewenstein (2011) and demonstrated in the afore-mentioned meta-analyses (Swartz et al., 2011; Young et al., 2011), previous research related to the impact of calorie posting on food selection behaviors has yielded mixed results, especially the data produced at fast food and chain restaurants. Yet, focusing in on a narrower population sample seems to provide more clarity. A majority (80%) of the 205 university students surveyed in a 2008 study (Driskell et al., 2008) reported that nutrition labeling sometimes precipitated changes in food choice. Twelve percent of that study population indicated they nearly always change food selection after reading the posted nutrition facts (Driskell et al., 2008).

There are several factors identified in the literature that may have an effect on food selection behaviors and alter the impact of calorie posting as an intervention. Education level and age might contribute to the inconsistency of outcomes, especially the sample population is highly

heterogeneous as is the case in many of the field studies in fast food restaurants. Additionally, some consumers may exaggerate to themselves the number of calories in food items, resulting in a reverse effect. Socioeconomic status may also influence behaviors when calories are posted by producing an increased perception of value attached to higher calorie items (Loewenstein, 2011).

Learning effects may impact the efficacy of nutrition education tools like calorie posting. The majority of respondents in the current study reported that the posted calorie information was similar to their estimate of the calories associated with food item(s). Yet, some researchers found that underestimation and overestimation of caloric content may impact food selection. Shimokawa (2016) illustrated this learning effect in a study demonstrating that calorie purchases may increase if people initially overestimate the caloric content of their purchases (Shimokawa, 2016). Context also appears to influence calorie selection. Numerous studies found that posting additional nutrition information such as daily calorie recommendations (Girz et al., 2012; Pang & Hammond, 2013; Roberto et al., 2010) mitigated calorie selection. Individuals with greater overall nutrition information demonstrated an increased awareness of calorie data. Wie and Geibler (2014) found that college students majoring in nutrition as well as those non-nutrition majors who were taking a nutrition class had a higher awareness of the role of calorie counts in weight management.

Gender may impact food selection as well. There is some research to support a gender difference. One of the studies in the 2011 meta-analysis completed by the Swartz et al found that men consumed more calories when presented with menus listing calorie information than those without it. Gender differences were also found in a 2013 survey of 226 consumers that reported men tended to order higher calorie options and larger portion sizes than women (Rizkallah & Feiler, 2013).

Thought the existing research contains some variability in outcomes, the current study found a significant change in the food item selection behavior of college students before and after posting calorie information on the food items. These findings are consistent with several studies on college populations linking nutrition information with food selection (Chu et al, 2009; Girz et al., 2012; Kolodinsky et al., 2008; Mayfield et al., 2014; Pang & Hammond, 2013) The majority of the literature supports the theory that provision of calorie information contributes to the selection of lower calorie food items to the extent that the sample population is college students. This becomes a simple and effective tool for effecting behavior modification when working clinically with health goals such as obesity as well as preventative medicine.

Limitations and Areas of Further Research

The relative homogeneity of the sample population involved in this study limits generalization to a more representative population. Identity factors, including cultural heritage, socioeconomic status, education level, gender, and age may all contribute to varying perspectives on food, diet, and calorie values which would influence food selection as well. The study also included only one type of food item: baked goods. Further exploration is needed to determine whether purchasing behavior is affected when calories are posted on various categories of food items such as coffee drinks, fruit, breakfast and lunch sandwiches, or soups. Further, the number of items for which calorie counts were posted was small ($n = 6$). Ideally, calorie information would be provided for all available food items in the setting and purchases could be associated with the individual purchaser to provide more information about the influence of demographic variables. Providing calorie information for all food items would allow for a fully-informed choice on the part of the consumer. It would be interesting to examine food selection and consumption behaviors when food is presented in a different dining format, such as buffet style

as well. Further, several studies included contextual information such as recommended daily calories, nutritional value, and representation of food groups, precipitating questions about whether contextual information can increase the effectiveness of calorie posting as a tool for healthy food selection.

Conclusion

The current study sought to examine whether posting calories on food items in a college campus café impacts what college undergraduates purchase. The main hypothesis was that college students change their food purchasing behavior when presented with calorie counts. The hypothesis was confirmed with significant results. Findings of this study may offer some insight into whether nutrition education such as calorie information effectively motivates behavior change related to food selection. It may also help further illuminate ways to provide support for college students to make healthy food choices.

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Wie, S., & Giebler, K. (2014). College students' perceptions and behaviors toward calorie counts on menu. *Journal of Foodservice Business Research, 17*(1), 56-65.

Wisdom, J., Downs, J. S., & Loewenstein, G. (2010). Promoting healthy choices: Information versus convenience. *American Economic Journal. Applied Economics, 2*(2), 164-178. doi:http://dx.doi.org.georgefox.idm.oclc.org/10.1257/app.2.2.164

Young, D., Wolfe, H., Ramanath, A., & Srivastava, A. (2011). The effectiveness of point-of-selection calorie posting in restaurants: A systematic review and meta-analysis. *Journal of the American Dietetic Association, 111*(9), A90.

Appendix A

Demographic Survey

Café Survey

Age: _____ Undergrad year (if applicable) _____

Do you live on campus or off?
Circle one: On / Off

Which type of customer are you? Circle one:
Undergraduate / Graduate / Faculty / Guest / Other

Approximately how many times in the past 7 days have you purchased something from the Bridge Café? _____

Gender: Circle one:
Female / Male / Other response _____

Ethnicity: Circle all that apply:
Latino/a Black/African American Indian/Alaskan Native
European American Asian/Pacific Islander International Student

What did you purchase in the café today? Circle all that apply:

Coffee Beverage	Bakery Item	Breakfast Sandwich
Lunch Sandwich	Flatbread	Salad from counter case
Smoothie	Soup	Fresh-squeezed Juice

Compared to your estimate, were the calories associated with your food items higher, lower, or the same as you thought they were?
Circle one: Higher / Lower / The same

Did the posted calorie information influence what you purchased today?
Circle one: Yes / No

Appendix B

Curriculum Vitae

APRIL V. ROSE

414 N. Meridian Street •Newberg, OR 97132 • (503) 475-0853 •aprilr10@georgefox.edu

OBJECTIVE: To provide mental health services and psychological assessment using evidence-based treatments and psychometrically robust instruments within an ACT framework to diverse populations in a holistic health setting.

EDUCATION

08.2016 **Master of Arts in Clinical Psychology**
Graduate Department of Clinical Psychology (APA-Accredited)
George Fox University, Newberg, OR
Dissertation title: Do Calories Count? Examining the Impact of Calorie Awareness on Food Selection.
Advisor: Kathleen, Gathercoal, PhD

12.2012 **Bachelor of Arts in Social and Behavioral Studies**
George Fox University, Portland, OR
Certificate of Academic Excellence
Thesis: Development of pilot study and psychometric instrument measuring public awareness of information sources related to fertility
Advisor: Carl Lloyd, PhD, PsyD

TRAININGS

3.22.17	Difficult Dialogues: Winston Seegobin, PsyD, Mary Peterson, PhD, Mark McMinn, PhD, ABPP and Glena Andrews, PhD.
3.1.17	Domestic Violence: A Coordinated Community Response Patricia Warford, PsyD and Sgt. Todd Baltzell.
2.8.17	Native Self Actualization: Its assessment and application in therapy Sydney Brown, PsyD
11.9.16	When Divorce Hits the Family: Helping Parents and Children Navigate Wendy Bourg, PhD.
10.12.16	Sacredness, Naming and Healing: Lanterns Along the Way Brooke Kuhnhausen, PhD.
2.17.16	Managing with Diverse Clients Sandra Jenkins, PhD, March 16, 2016.

Neuropsychology: What Do We Know 15 Years After the Decade of the Brain? and Okay, Enough Small Talk. Let's Get Down to Business! Trevor Hall, PsyD and Darren Janzen, PsyD.

10.21.15 Let's Talk About Sex: Managing Emerging Sexuality in Therapy. Speaker: Dr. Joy Mauldin, PsyD.

9.30.15 Relational Psychoanalysis and Christian Faith: A Heuristic Dialogue. Speaker: Dr. Marie Hoffman, PhD.

3.18.15 Spiritual Formation and Psychotherapy Barrett McRay, PsyD.

2.18.15 Credentialing, Banking, the Internship Crisis, and other Challenges for Graduate Students in Psychology Morgan Sammons, PhD, ABPP.

11.19.14 Face Time" in an Age of Technological Attachment. Speaker: Dr. Doreen Dodgen-McGee.

10.15.14 Understanding & Treating ADHD in Children Erika Doty, PsyD Learning Disabilities DSM5 – A New Approach Tabitha Becker, PsyD.

Other Training:

2.25-28.16 Acceptance and Commitment Therapy Bootcamp

4.15-16.16 Focused Acceptance & Commitment Therapy (FACT) Workshop

6.14-15.16 Inside This Moment Workshop, Association for Contextual Behavioral Science World Conference

Field Experience:

2012 Grant proposal writing for non-profit organization

PUBLICATIONS AND PRESENTATIONS

Publications

McMinn, M., Shumway, K., Rabie, A., Rose, A. (2017). Technology in Practice. Reference Module in *Neuroscience and Biobehavioral Psychology*, Elsevier, 2017. ISBN 9780128093245.

In Process

Rose, A. & Andrews, G. (2017) Case study on the impact of aging on frontal lobe Dysfunction due to traumatic brain injury.

Rose, A. & Turgesen, J. (2017) ADHD in Primary Care: Leveraging Clinical Skills for accurate assessment and diagnosis.

Poster Presentations

Ford, N., Rose, A., & Goodworth, M.C. (2017). *Difficult Dialogues: What To Talk About How Prepared We Are To Do It.* Poster session presented at the meeting of the Oregon Psychological Association, Eugene, OR.

Hoose, L., Ford, N., Rose, A., Thomas, M., & Gathercoal, K. (2017). Poster session presented at the meeting of the Oregon Psychological Association, Eugene, OR.

Rose, A., & Manns, A, (2016). *Mindfulness Training: A Stress Management Intervention for*

School Aged Children. Poster session presented at the meeting of the Oregon Psychological Association, in Eugene, OR.

ORGANIZATIONAL MEMBERSHIPS

American Psychological Association
Association for Contextual Behavioral Science

WORK EXPERIENCE

08.2017-present **Supervision, mentorship, and oversight of second-year doctoral students**
Graduate Department of Clinical Psychology
George Fox University, Newberg, OR

Duties included supporting development of professional knowledge, skills, and attitudes consistent with APA ethics code and industry competencies.

01.2016-present **Behavioral Health Crisis Consultation (Supplemental Practicum)**
Providence Newberg Hospital (Newberg, OR) and Willamette Valley Med. Center (McMinnville, OR)
Emergency Department

Duties included providing on-call crisis assessment and consultation to emergency department physicians and staff, determination of patient disposition, implementation of inpatient hospitalization and legal hold processes, provision of resources.

05.2016-present **Integrated Care Behavioral Health Consultation (Practicum II & Pre-Internship)**
Providence Medical Group, Sherwood Family Medicine
Sherwood, OR

Work in a fast-paced primary care setting with 30 minute visits and wide range of populations and presentations. Duties included conducting intake and diagnostic interviews, providing evidence-based interventions, administration of neuropsychological and comprehensive assessments including WAIS-IV, WISC-V, WMS, DKEFS, NEPSY, MMPI-2/RF/A, WJ and WIAT, WCST, CVLT, TPT, Peg board, behavioral, executive function, case management, collaboration with interdisciplinary care teams, and identification of appropriate referrals for a wide-ranging generationally-diverse population in the integrated care setting. Theoretical orientations used included culturally-sensitive ACT, CBT, compassion-focused therapy, and person-centered therapy.

10.2016-present **Integrated Care Behavioral Health Consultation (Supplemental Practicum)**
Women's Healthcare Associates, Newberg Oregon

Work in a fast-paced maternal medical home setting with 30 minute visits fora primarily rural and underserved population. Duties included conducting intake and diagnostic interviews, providing evidence-based interventions, treatment planning, care coordination, and community resourcing for women across the lifespan. Hospital-credentialed for provision of services during labor, delivery, and surgery. Provide collaboration with interdisciplinary care teams, and identification of appropriate referrals. Theoretical orientations used included culturally sensitive ACT, CBT, compassion-focused therapy, and person-centered therapy

06.2016-present **Behavioral Health Consultation (Supplemental Practicum)**
Providence Newberg Hospital (Newberg, OR)
Intensive Care Unit, Med/Surg, and Labor/Delivery Units

Duties included providing on-call psychological evaluation, risk assessment, and case management.

01.2016-12.2016 **Graduate Assistant in PSYD 522: Cognitive Assessment**
Graduate Department of Clinical Psychology
George Fox University, Newberg, OR

Duties included providing instruction, evaluation, feedback, and support for psychological assessment report writing with second-year doctoral students.

09.2015-04.2016 **Practicum Student**
North Clackamas School District, Rowe Middle School

Duties included administration, scoring, and interpretation of assessments, report writing, and use of evidence-based practices to provide behavioral and emotional support for 6th to 8th grade students (primarily foster children). Population included 78% low SES, 28% special education qualified, and wide-ranging cultural backgrounds.

1998-2009 **Previous Career Experiences available upon request**

SKILLS

English: First language
Spanish: Basic Knowledge

EPIC EHR, Centricity EHR, various web-based proprietary systems, Microsoft Office and Google suites.

PROFESSIONAL ACTIVITIES

2014-present Member/leader Health Psychology Student Interest Group.

REFERENCES

Glena Andrews, PhD, MSCP, Director of Clinical Training
Graduate Department of Clinical Psychology
George Fox University, Newberg, OR
Email: gandrews@georgefox.edu Phone: (503) 554-2386.

Kathleen Gathercoal, PhD, Director of Research
Graduate Department of Clinical Psychology
George Fox University, Newberg, OR
kgathercoal@georgefox.edu
Phone: (503) 899-0262

Jeri Turgesen, PsyD, Psychologist-Behavioral Health Integration
Providence Medical Group, Newberg, OR
Email: jeri.turgesen@providence.org Phone: (503) 537-5983 (office).

Marie Christine Goodworth, PhD, Associate Professor of Clinical Psychology
(2016/17 Clinical Team Leader)
Graduate Department of Clinical Psychology
George Fox University, Newberg, OR
Email: mgoodworth@georgefox.edu Phone: (503) 554-2382.