CHAPTER I
INTRODUCTION

Data from the 2005-2006 National Health and Nutrition Examination Survey (NHANES) reveal that obesity (body mass index [BMI] greater than or equal to 30 kg/m²) has advanced to 34.3% of the US adult population, and 5.9% are extremely obese (BMI greater than or equal to 40 kg/m²) (1). The National Heart, Lung, and Blood Institute and the Centers for Disease Control and Prevention report that individuals who are obese have an increased risk of developing comorbidities including hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, and some types of cancer (2, 3). Frequency of dining out has multiplied over the past two decades (4), and portion sizes offered at restaurants have also increased (5). A growing consensus has emerged suggesting a positive association between increased frequency in dining out, larger portion sizes, and increased prevalence of obesity (5-12). In fact, research by Burton and colleagues suggests that most restaurant diners are not able to accurately estimate the energy content of menu items (9, 10), and this problem is confounded by the tendency to over-consume calories due to the larger portion sizes (8).

Restaurant owners and managing executives are driven primarily by desire for increased sales and profits, but research by Glanz and colleagues shows that within the industry there is a growing awareness of the trend toward healthier menu offerings (13). Almanza, in fact, reports that many owners and managers within the restaurant industry are not unwilling to provide nutrient information and are searching for ways to make the undertaking profitable (14). As restaurateurs search for a profitable business model that includes presentation of nutrient information, public advocacy groups are developing and lobbying for legislation to mandate restaurant menu labeling (15). Both types of strategists, however, in their efforts to earn a profit or reduce public health risk, should include a careful study of the desires of the dining-out population in their planning.

The objective of this research was to discover whether a demand exists among the dining-out population for healthier menu options and for disclosure of nutrient information on restaurant menus. A cross-sectional questionnaire was administered to capture dining preferences and behaviors in order to better answer those questions. Other points of interest included specific nutrient information desired, methods of disclosure desired, and willingness to order healthier menu items.

CHAPTER II

REVIEW OF LITERATURE

Obesity

The United States Census Bureau estimates our population at 298 million as of July 2005 (16). The rate of overweight and obesity has been rising, and, according to the 2005 – 2006 data from the National Health and Nutrition Examination Survey (NHANES), the prevalence of obesity among US adults is estimated at 34.3%, or about 102 million (1). The National Heart, Lung, and Blood Institute and the Centers for Disease Control and Prevention (CDC) report that individuals who are obese have an increased risk of developing co-morbidities including hypertension, dyslipidemia, type 2 diabetes, coronary heart disease, and some types of cancer (2, 3). Also related to obesity, one of the growing topics of interest in the healthcare industry has been metabolic syndrome. Several risk factors are associated with metabolic syndrome: increased abdominal obesity, dyslipidemia, high blood pressure, insulin resistance or glucose intolerance, and prothrombotic and proinflammatory markers. Those with metabolic syndrome present with three or more of these symptoms and are at increased risk for cardiovascular disease and type 2 diabetes (17). Ford and colleagues analyzed NHANES data and estimated the prevalence of metabolic syndrome at 21.8%, or about 65 million Americans (18).

Dining Out and Overconsumption

In addition to growing rates of overweight and obesity, researchers report that typical restaurant portion sizes have grown (5). The new "typical portion size" was the topic of study for Schwartz and colleagues (19). In order to measure any change in perception of appropriate portion size, Schwartz set out to compare a contemporary population with a similar population tested by Guthrie in 1984. Both projects sought to determine the typical portion size of various foods individuals would select in a buffet-

style setting. The participants in the 2006 study were 177 college students. Research participants were allowed to individually visit a buffet line with typical food items offered for breakfast, lunch, and dinner meals. After the students served themselves what they perceived as an appropriate portion, the serving dish was weighed to determine the amount taken. The results showed that, while typical portions selected for tossed salad and salad dressing had decreased from 1984 to 2003, selected portion sizes for breakfast items, such as cereal and orange juice, had significantly increased over the period. At the dinner meal, 70% chose bread portions that were at least 26% larger than the reference portion size established by the Nutrition Labeling and Education Act (NLEA). As compared to the results of the previous study, the food items with the largest portion size increase were cornflakes, milk on cereal, orange juice, and fruit salad (19).

Coinciding with increased prevalence of overweight and obesity and increased portion size has been increased frequency of away-from-home dining. The National Restaurant Association reported an increase in number of commercially-prepared meals consumed per year from 38.4 billion meals in 1981 to 53.5 billion commercially-prepared meals per year by 2000 (20).

A growing consensus has emerged among researchers suggesting a positive association among these issues--increased dining out frequency, increased portion size, and increased prevalence of overweight and obesity in the United States (5-12). Wansink argues that larger portion sizes have led our country as a whole to overeat (8). In fact, the CDC released a report documenting a statistically significant increase from 1971 to 2000 in average daily caloric intake for men of 2,450 kilocalories to 2,618 kilocalories and for women of 1,542 kilocalories to 1,877 kilocalories (21).

Estimating Energy from Entrées

Research by Burton and others suggests that consumers are generally not adept at correctly estimating calorie and fat content of restaurant menu items (8-10). One of Burton's research projects was undertaken in two separate parts. The focus of part one was to discover the "expectations of reasonable consumers regarding the nutrient levels of typical restaurant fare." Participant-estimated levels of calories, fat, saturated fat, and

sodium in specific menu items were compared to objective values determined by laboratory testing. Burton expected to find that consumers would substantially underestimate these values for all menu items and that the margin of error would grow between the estimates and actual objective values for calories, fat, saturated fat, and sodium when the specified foods were "very unhealthy." Nine restaurant entrees were described as they would appear on a restaurant menu. Participants were asked to read descriptions of the entrées and estimate calories, fat, saturated fat, and sodium. Estimates were higher for dishes that were "less healthful," and, as hypothesized by Burton, actual objective calorie counts were almost two times higher than the participants' estimated calorie counts for the "less healthful" items. With "healthier" dishes, participants' calorie estimates were closer but still below actual objective values. Generally, fat content of "less healthy" items was underestimated by 44 g, and saturated fat levels were underestimated by 15 g. Sodium estimates were low for all the menu items, but for "less healthful" menu selections sodium was underestimated by 1,557 mg, and for "extremely unhealthful" items sodium was underestimated by 4,353 mg (10).

The purpose of part two of the Burton study was to identify the potential benefits provided to restaurant patrons by the disclosure of nutrient information on menus. Food items were presented in a survey mailed to participants in the design style of a normal menu. The first group had no nutrient information disclosed. The second group had only calorie information. The final group had information on calories, fat, saturated fat, and sodium for each dish. For each menu item considered, participants were asked to describe their perceptions of risk for weight gain and for development of diseases associated with incorporating that menu item into their regular food choices. They were also asked about the likelihood that they would purchase such items. Researchers expected that risk perception would be influenced by provision of nutrient information. They also predicted that information provided on "less healthful" items would have a negative effect on willingness to purchase. Intent or willingness to purchase a chef's salad from this menu did not decrease significantly when calorie information alone was disclosed. The significant change came when calorie and nutrient information were disclosed, including amounts of fat and saturated fat. These values greatly exceeded the participants' expectations. The disclosure had a significant negative effect on intent to

purchase. In the case of a chicken dinner item, participant estimates regarding calories and fat and other nutrients of interest were closer to the actual laboratory findings. With the addition of calorie information alone, intentions to purchase the chicken dinner were basically unchanged. When the calorie and nutrient information were provided, there was an increase in intent to purchase this healthier menu selection. Likewise with other "healthier" food items, calorie and nutrient information disclosure led to increased customer intent to purchase. The opposite effect was observed when fat and nutrient disclosure were given for "less healthful" items. In regard to perceived disease risk, a comparison was made between perceptions of risk associated with turkey, chicken, and chef's salads on the menu. When no nutritional information was provided for these items, there was no difference in risk perception by the test population. Just as Burton hypothesized, when the nutrient and calorie information were provided, the chef's salad's high levels of fat and saturated fat caused the largest change in perceived disease risk (10).

Research suggests that more complete nutrient information on menus makes it easier for health-conscious diners to maintain weight loss and to build confidence in their own abilities to choose healthy menu items when dining out. Kruger and fellow researchers analyzed existing data from the 2004 Porter Novelli HealthStyles and ConsumerStyles databases and specifically focused on survey data for participants who self-reported success at weight loss and weight loss maintenance. Analysis was done to discover the number of fruit and vegetable servings eaten, minutes of exercise performed per week, dining out behaviors, and self-confidence in ability to make health-related behavioral changes. Those whose dining-out behaviors included ordering reduced-size entrées, sharing portions, avoiding fast food restaurants, eating less of what was served, ordering half-size portions, or ordering appetizer-size entrées experienced greater success at maintaining weight loss. Additionally, weight maintenance was strongly linked to confidence in one's ability to make health-related behavior changes. Weight maintenance success was achieved by those participants who self-reported confidence in their ability to keep track of calories consumed, eat smaller portions at meals, balance food intake with activity, purchase fewer high-calorie, high-fat snacks for their

households, snack on fruits and vegetables, and limit dining out (all types) to only 2 times per week (22).

The findings reported in this research support the theory that there is a population of people who are actively pursuing a healthy lifestyle that includes healthy dining out. This population is looking for healthy choices on a restaurant's menu. One might infer that, if restaurant owners or managers provided healthy menu alternatives and nutrient information, health-conscious patrons would feel more confident about eating at their establishments. Rather than limit the number of dining out experiences per week as a weight maintenance strategy, the health-conscious population might feel freer to eat out more often.

Healthy Menu Options Already Available

Research conducted by Jones and colleagues suggests that healthier options are already offered on many restaurant menus. Jones and colleagues reported that West Virginians have had a 50% increase in overweight and obesity from 1991 to 1998. They pointed to changes in the nation's nutritional environment as likely contributors to the rise in obesity nationwide and within the State of West Virginia. Those changes, they claim, have been:

- increased availability of foods high in energy and saturated fatty acids
- increased availability of foods prepared outside of the home with unknown ingredients
- increased opportunities to eat meals away from home
- increased portion sizes of restaurant foods (23).

The Jones study further examined West Virginia restaurants to determine the accessibility to "point-of-purchase nutrition information and heart-healthy choices." The researchers collected and evaluated a total of 273 different restaurant menus from the ten largest cities in West Virginia. Only one of the 273 restaurants displayed general nutrition information. The United States Department of Agriculture (USDA) Dietary Guidelines

were displayed at the point of purchase. "Heart-healthy" dishes were labeled as such on only 9% of the menus. Most menus with heart-healthy labels did not specify the criteria for a heart-healthy food item. However, Jones suggested that many restaurants were offering unlabeled heart-healthy foods. Thirty-seven percent offered fruit dishes, 66% offered vegetables not cooked in fat, 80% offered "light" side dishes, and 55% of the surveyed menus offered half portions. Eighty-six percent of the restaurants offered vegetarian dishes. Researchers suggested that the lack of labeling of these dishes could be due to the restaurant owner's or manager's "inability to comply with federal regulations for the claim (23)." Specifically, Federal Register 40332, August 2, 1996, establishes that nutrition information for menu items bearing health claims must be available upon request (24).

Profitable Restaurant Menu Planning

The effort and expense related to researching ingredients and standardizing preparation could be prohibitive for many restaurant owners. Glanz and colleagues presented findings of a study describing the restaurant owners' menu planning process. The purpose of the study was to understand the motivations of a restaurant owner as he plans the operation's menu and the challenges to offering healthy food items on a menu. The study involved the use of a comprehensive telephone interview with 41 senior menu planners and marketing executives in 28 different foodservice organizations. The 28 companies ranged from limited-service/quick-service/fast-food type chains to midscale or casual dining establishments. The clientele served were generally middle-income families and individuals. The restaurant executives were questioned about topics including general business issues, menu trends, influences on decisions to introduce a new menu item and retain it on the menu, experiences with past healthy menu offerings, and ideas about the trends ahead in the restaurant industry. The issues that were of most concern to the restaurant executives were obviously growing sales and increasing profits. Other issues of concern were food safety, customer demand, and labor issues. Of less importance were health, nutrition, and social responsibility (13).

In deciding whether to add any item to the menu, the menu planners and marketing executives ask themselves whether the change will attract new customers. According to the Glanz research, restaurant owners and marketing executives also want to know how the item will affect sales. For example, if a new menu item is more costly to prepare, will the addition of that item to the menu cause customers to stop choosing an item that is more profitable? Also considered is ease of preparation. Additionally, a restaurant chain's willingness to offer a healthier fare is influenced by perceived demand and by the possibility of an individual group member's "veto power." Glanz explains that a fear of menu planners can be that one health-conscious person in a larger group could potentially have enough influence on other group members to change the group's restaurant choice. This veto power could steer the group's decision if the health-conscious person could not get a healthy dish at the group's first restaurant of choice. Other restaurant chains, as reported by Glanz, are operated following the assumption that diners want to indulge themselves when they eat out. Some restauranteurs believe that consumers "talk the healthy talk" but select whatever they want once they reach the restaurant dining table (13).

Nevertheless, restaurant executives expressed a belief that the trend is toward healthier restaurant offerings. According to the Glanz research, restaurant owners and marketing executives see a healthy change as a possible way to draw new customers. Industry representatives asked for:

- public health agencies and institutions to provide information on healthy foods
- ideas for preparing healthier dishes
- good business reasons to offer healthier foods
- help in marketing the healthier items.

Researchers in this study concluded that, "restaurants will respond to consumer demand if it exists (13)."

Obstacles to Menu Labeling

A study by Almanza and colleagues revealed obstacles (perceived or real) that restaurant owners and/or managers feel prohibit them from providing nutrient information on their menus. Researchers developed a questionnaire to determine the opinions of food service corporations regarding nutrient labeling. The survey was conducted in May 1994 with participants chosen from the previous year's list of the top 400 foodservice organizations. This group included many types of restaurants from finer dining to quick service establishments. The first part of the survey included questions related to the organization's feeling of responsibility to provide nutrient information, their willingness to do so, and major obstacles to providing the information. The second part of the survey dealt with more objective issues such as annual sales volume and target segment of the population. Organizations were asked to rate obstacles as minor or major hindrances. They were also asked to rate their willingness to provide nutrition information from "not willing" to "very strongly willing." Some of the foodservice organizations were currently providing nutrient information, some had attempted to do so, and some had never provided it. Sixty-four percent were not currently providing nutrient information. Results showed that 66% thought labeling would not affect sales, 25% thought labeling would reduce sales, and about 8% thought that providing nutrient information would increase sales. Participants who thought that providing nutrient information would boost sales were generally from organizations with annual sales greater than $140 million. Those who thought the nutrient information would have a positive effect were more willing to provide it. Those who felt a responsibility to provide the information (35%) were also more willing to do so. Ranked by importance, the obstacles to providing nutrient labeling were:

1. too many menu variations
2. limited space on the menu
3. loss of flexibility in changing the menu.

Also mentioned was the problem of having no one on staff to perform an accurate nutrient analysis. According to research results, many owners and managers of restaurants or foodservice organizations were not unwilling to provide nutrient

information. However, they felt that they needed not only assistance with nutrient analysis but also guidance on how to modify existing recipes to make them more healthful (14).

Mandated Menu Labeling

Regardless of the obstacles the food industry faces, legislation requiring nutrient labeling on menus appears to be imminent. As described by Pomeranz and Brownell, public health advocacy groups are strategizing for successful passage of nutrient labeling laws (15). In June 2009, media outlets reported both lack of support for Florida legislation and successful passage of legislation for menu labeling regulation in the state of Connecticut (25, 26). The *Chicago Tribune* reported on the national menu labeling battle. The national struggle reportedly has been between public health advocates who have been pushing for detailed nutrient information printed directly on menus and the restaurant industry which has been in support of a national standard that would not require the printing of information directly on menus or menu boards but would require, by less restrictive means, the accessibility of nutrient information in plain sight at point-of-sale (27).

Researchers are studying the effect on consumer food choices caused by mandated menu disclosure of nutrient information (28, 29). If success is measured by change to healthier choices and reduced fat and calorie intake, then measures thus far may not look promising. Elbel and colleagues studied consumer choices of fast food restaurant menu items in New York City both before and after the initiation of mandated calorie labeling. Before the display of calorie information, New York fast food consumers chose a mean of 825 calories per meal. After calorie information became available, New York fast food consumers chose a mean of 846 calories per meal. Additionally, only 27.7% of those surveyed in Elbel's study indicated that the calorie information influenced their menu choices (29).

Perhaps strategists, in their rush to advocate for healthier eating, did not consider whether a consumer demand exists for nutrient information on restaurant menus, what

methods of presentation would be most useful, and whether patrons would be likely to take advantage of the information provided.

Objectives

The objectives of this study were to answer the following questions:

1. Do restaurant patrons desire healthier menu options?
2. Do restaurant patrons desire to have nutrient information available on restaurant menus, and, if so, what specific nutrient information are they seeking?
3. Do consumers perceive that lack of nutrient information presents a challenge to their choosing healthier menu items?
4. How would restaurant patrons like to have the nutrient information provided, denoted, or displayed?
5. If a restaurant offered healthier menu items, would patrons be willing to order them?

Since much of the previous research has been related to fast food dining, this research was intended to describe preferences and behaviors of consumers who dine out at fast-casual, limited-service, and finer dining establishments. Also of interest were the behaviors and preferences of those who eat out on a regular basis for reasons such as business or travel as opposed to occasional celebratory events only. Surveying locations were purposely chosen to capture the opinions of the above described dining out population.

CHAPTER III

METHODS

IRB Approval

Because the participants were not asked to supply any information revealing personal indentity, The Georgia State University Institutional Review Board granted permission for the research under Category 4 Exemption status.

Questionnaire

The questionnaire developed for this research project consisted of 15 multiple-choice and multiple-part questions developed by the researcher (Appendix A). Participants were asked to indicate behaviors or preferences by placing a circle around the appropriate response(s). For questions regarding frequencies of behaviors, participants placed Xs in appropriate boxes to indicate "never," "0 to 3 times," "4 to 11 times," and the like. Questions were designed to capture a limited demographic description of the population and detailed categorical data describing the usual dining behaviors and preferences of participants when eating at home and when eating out. Specific questionnaire questions were designed to answer each research objective (Table 1). The questionnaire was reviewed and evaluated by a Georgia State University master's thesis advisory committee.

Participants

Eighty-four individuals completed questionnaires at either of two separate venues during two separate metropolitan Atlanta public events. Approximately half of the questionnaires were completed by participants who attended The Atlanta Boat Show at The Georgia World Congress Center on January 17, 2009. The second half of the questionnaires was completed by participants during the National Poultry and Food

Distributors' Association (NPFDA) Atlanta Convention and Poultry Suppliers Showcase at the Hyatt Regency, Atlanta, on January 29, 2009. In both locations, the questionnaires were available for approximately six hours at the researcher's table, which was set up among the other vendors. A raffle ticket was entered for every participant who completed a questionnaire and desired to provide name and email or name and telephone number on a separate card. One participant at the Atlanta Boat Show was eligible for a chance to win a $50.00 gift card to spend at a nationwide electronics retailer. One participant at the NPFDA Convention was eligible to win a $25.00 gift card to a nationwide restaurant chain. The gift cards were provided by the researcher. The dollar amount for the Atlanta Boat Show gift card was determined by the researcher. The dollar amount for the NPFDA Convention gift card was determined by the event organizers. Participants completed the questionnaires individually on site. Completion of the questionnaire took approximately five minutes.

Data Analysis

Responses for questionnaires were tabulated in a Microsoft® Office Excel® 2007 spreadsheet. Frequencies for each possible response were also quantified using Microsoft® Office Excel® 2007. Frequencies were then used to calculate percentages for responses based on the number of participants answering the question. Responses were also calculated by gender and frequency of dining out. In reporting results related to gender groupings, responses were excluded for those participants who did not indicate gender. Otherwise, all valid responses were included in frequency tabulation. SPSS® version 16.0 was utilized for Chi Square tests to determine differences between groups with $p \leq 0.05$. In comparing the responses to questions 9 and 10 to determine percent change in preference, the total number of "low calorie" responses, for example, tallied for question 10 was subtracted from total number of "low calorie" responses for question 9 to determine the frequency change. The frequency change was divided by the total number of "low calorie" responses to question 9 and multiplied by 100 to determine percent change.

CHAPTER IV

RESULTS

Eighty-four free-living adult volunteers completed questionnaires for this research. Three participants did not indicate gender. Of those who reported gender, sixty-one participants (75.3%) were male, and 20 participants (24.7%) were female. Sixty participants (71.5%) were between the ages of 30 to 59 years. Only two participants (2.4%) were less than 20 years old. Eleven participants (13.1%) were older than 59 years. Approximately 21% (18 people) of the participants indicated that they had been told by a doctor that they were overweight, and 38.6% (32 people) indicated that at some time they had received diet counseling from a healthcare professional. Twenty percent (17 people) reported having been diagnosed with hypertension. No other notable medical diagnoses were reported (Tables 2-4).

Types of Restaurants Chosen and General Dining Out Behaviors

In response to question 14a of the research questionnaire (Table 1), 76 participants (92.6%) reported that they had eaten out at least one time in the past month in a restaurant other than fast-food. Fifty-one participants (62.2%) reported having eaten out at a dining establishment other than fast food on four or more occasions in the preceding month, with 18 (21.9%) of those having done so 11 or more times (n=80). When considered as a subgroup, those who dined out most frequently (four or more times in the preceding month) did not differ significantly from the entire sample in frequency of choosing non-fast food restaurants (p=0.456). When non-fast food dining frequency was considered by gender, 17 female participants (89.5%, n=19) reported having eaten at a non-fast food restaurant in the preceding month. Seven (36.8%) of the female participants indicated that they had eaten a non-fast food restaurant meal four or more times in the previous month. The frequency of non-fast food dining among female

participants was not significantly different from the entire sample (p=0.128). Fifty-two male participants (86.7%, n=60) had eaten a non-fast food restaurant meal in the preceding month, and 43 male participants (71.7%) had done so four or more times. The responses of the male participants did not differ significantly from the responses of the entire sample in regard to non-fast food dining frequency (p=0.473), nor were men and women as groups significantly different from one another in this regard (p=0.580).

Total check size per person, including alcohol and gratuity, for 53.8% (43 participants, n=80) of the participants averaged $21.00 or more per person. Forty percent of women (8 women, n=20) and 57.9% of men (33 men, n=57) reported spending $21.00 or more per person. There was no significant difference between genders in regard to total check size per person (p=0.363). Approximately 43.2% of the entire sample (35 participants) indicated party size of 1 to 2 people, 45.7% of the entire sample (37 participants) indicated 3 to 4 people, and 11.1% (9 participants) indicated 5 or more people in a normal party (n=81). Approximately 56% of men (33 men, n=59) reported 3 to 9 people per party, and 52.6% of women (10 women, n=19) reported 3 to 9 as a normal party size.

Effect of Health Issues on Dining Behaviors

Diet Counseling

Approximately 38.6% of participants (32 participants, n=83) indicated that they had received diet counseling from a health professional (doctor, nurse, or registered dietitian). Forty-five percent of women (9 women, n=20) and 36.7% of men (22 men, n= 60) indicated they had received diet counseling. There was no significant difference between men and women (p=0.508), and there was no significant difference between men or women compared to the entire sample (men versus entire sample: p=0.801; women versus entire sample: p=0.610).

Avoid Eating Out to Meet Dietary Needs

Forty-seven percent of participants (39 participants, n=83) responded "yes" or "sometimes" when asked whether they avoid eating out to meet their dietary needs (Table 1). Men and women were different in their responses to this question (p=0.049). By gender, 42.6% of men (26 men, n=61) and 68.4% of women (13 women, n=19) reported that they avoid dining out at least sometimes to meet their dietary needs.

Medical Diagnoses

In response to question 4 of the questionnaire regarding medical diagnosis, 2.4% of participants (2 participants, n=84) indicated that they had been diagnosed with heart disease, and 2.4% (2 participants, n=84) indicated that they had food allergies. Approximately 8.3% of participants (7 participants, n= 84) indicated that they had been diagnosed with diabetes (type-1 or type-2 was not distinguished). The most frequent affirmative responses were for high blood pressure (20.2% or 17 participants, n=84) and overweight (21.4% or 18 participants, n=84).

Of the 20.2% of participants (17 participants, n=84) who indicated having high blood pressure, 64.7% of those participants (11 participants, n=17) also reported having received diet counseling from a health care professional (doctor, nurse, or registered dietitian). Within the hypertensive group, 47.1% (8 participants, n=17) reported that they try to consume a low salt diet when eating at home, and 23.5% of them (4 participants, n=17) desire low sodium foods when dining out. Approximately 41.2% of those with hypertension (7 participants, n=17) responded "yes" or "sometimes" to question 6 indicating that they do avoid eating out in order to meet dietary needs.

Eighteen participants or 21.4% (n=84) indicated that they had received a diagnosis of overweight. More than 55% of overweight participants (10 participants, n=18) also reported having had diet counseling, and 22.2% of them (4 participants, n=18) indicated that they at least sometimes avoid eating out to meet dietary needs. For dining at home, low fat foods were important to six overweight participants (33.3%, n=18), and low calorie foods were important to nine (50%, n=18) of the overweight participants.

When dining out, five (27.8%, n=18) of those in the overweight group were seeking low fat foods, and four (22.2%, n=18) were seeking low calorie menu items.

Seven participants from the entire sample (8.3%, n=84) indicated having diabetes. Six of those with diabetes (85.7%, n=7) reported having received diet counseling from a health care professional. Three (42.9%, n=7) sometimes avoid dining out to meet dietary needs. The desire for diabetic exchanges on menus was indicated by three (42.9%, n=7) of the participants with diabetes. Three different individuals with diabetes (42.9%, n=7) reported seeking low carbohydrate meals when dining at home, and three (42.9%, n=7) desired low carbohydrate meals when dining out. Only one person with diabetes (14.3%, n=7) responded in the affirmative for the series of questions related to 1) having received diet counseling, 2) desire for diabetic exchanges on menus, and 3) desire for low carbohydrate meals at home and 4) away. That participant indicated that he does not avoid eating out to meet dietary needs.

Demand for Healthier Menu Options

Desire for Nutrient Information

In response to question 14k (Table 1), approximately 28% of participants indicated that they had wanted to know nutrient information for a restaurant entrée in the preceding month. There was no significant difference between genders in their responses to this question (p=0.103). Approximately 44.4% of women (8 women, n=18) and approximately 24.6% of men (15 men, n=61) reported a desire for nutrient information for an entrée on a restaurant menu in the preceding month.

Healthier Restaurant & Menu Choices

Sixty-two participants (75.6%, n=82) indicated in response to question 14b (Table 1) that they were at least sometimes concerned about choosing healthy food when dining out, and 51 participants (62.2%, n=82) who responded to question 14c (Table 1) had chosen a restaurant in the previous month because the menu offered healthier entrées.

Men and women were similarly concerned about choosing healthier food when dining out (p=0.144). However, they were significantly different in their frequency of choosing restaurants with healthier offerings (p=0.034). Approximately 83.3% of women (15 women, n=18) and 55.7% of men (34 men, n=61) had chosen a restaurant in the previous month because of its healthier entrée choices. In their responses to question 14d (Table 1), those who dined out four or more times in the preceding month were not significantly different from those who ate out less often in regard to number of times they had chosen a restaurant for its healthier menu options (p=0.499). However, those who ate out 4 or more times were significantly more concerned than those who ate out less frequently about making healthier choices at whatever dining establishment they finally chose (p=0.046). Of those who reported having eaten out four or more times in the preceding month, 79.7% (55 participants, n=69) indicated that they had been concerned on a least one dining out occasion about choosing healthier foods. Approximately 53.9% of those who ate out less frequently (7 participants, n=13) indicated that they were concerned about choosing healthier foods when dining out.

Menu Ordering Strategies

Participants were asked a multiple part question to determine whether, for any reason, they had adopted any of several menu ordering strategies (Table 1). Fifty-four participants (65.9%, n=82) indicated that they at least sometimes considered a restaurant portion size to be too large. Twenty-six participants (32%, n=82) thought the portion size was too large on four or more separate occasions in the previous month. Although the difference between men and women in this regard did not reach statistical significance, 83.3% of the women (or 15 women, n=18) thought at least once in the past month that their portion sizes were too large, and 60.7% of the men (or 37 men, n=61) did so.

Ordering an appetizer-sized portion was a strategy used at least once by 36 participants (43.9%, n=82). Men and women were similar in their willingness to try this approach (p=0.580), and those who dined out most frequently (four or more times in the preceding month) were not different than the entire sample in their tendency to order an appetizer as an entrée (p=0.899). Asking for a half portion when ordering was essentially

equal in unpopularity among all groups. Seventy participants (85.4%, n=82) rejected that strategy. However, one male individual indicated that he had made the request for a half portion on more than 20 separate occasions in the preceding month.

Sharing an entrée was a method chosen by 46 participants (56.1%, n=82) on at least one occasion in the preceding month. Men closely reflected the tendency of the whole population. Approximately 50.8% of men (31 men, n=61) indicated they had shared an entrée with someone (p=0.531). Although women were not statistically different from the entire sample (p=0.208) or from men (p=0.108) in their tendency to share an entrée. In this study, a larger percentage of women (72.2% or 13 females) chose to share an entrée at least once in the preceding month.

Participants were asked in question 14g (Table 1) to indicate the number of times in the preceding month they had asked a waiter about ingredients or preparation of an entrée. Fifty-three individuals (65.4%, n=81) had not asked. Men and women were not unalike in this behavior (p=0.426). Nor were men or women statistically different when compared to the entire sample (men p=0.645; women p=0.311).

The most popular menu ordering strategy enumerated in response to question 14 was requesting a take-home box. Seventy participants (85.4%, n=82) had asked for a take-home box on at least one occasion in the preceding month. There was not a significant difference between genders in regard to willingness to ask for a take-home box (p=0.583), nor was there a significant difference in this behavior for those who ate out four or more times in the preceding month versus the entire sample (p=0.440).

Healthier Food Qualities Desired at Home

In response to question 9 (Table 1), participants indicated specific healthier food qualities they desire when dining at home. In review of the 83 responses, the most desired food qualities in rank order were “low fat” (49.4% or 41 participants), “not fried” (37.3% or 31 participants), “high fiber” (37.3% or 31 participants), “low calorie” (36.1% or 30 participants), “low sodium” (34.9% or 29 participants), “low cholesterol” (32.5% or 27 participants), and “low carbohydrate” (21.7% or 18 participants) (Figure 1). While men and women desired many of the same healthier food qualities at home meals, the

rank order of preferences between genders was significantly different for two healthier food qualities. Only eighteen men (30.0%, n=60) indicated that they desired "high fiber" at home, but "high fiber" was the food quality chosen most often by women (60% or 12 women, n=20) as an important food quality at home meals (p=0.016). Men and women were also significantly different in their desire for low carbohydrate foods at home meals with 11.7% of men (or 7 men, n=60) and 50.0% of women (or 10 women, n=20), indicating this preference (p<0.001) (Figure 2).

Women were also more decidedly in favor of their healthier food quality choices at home than were men. For women, the six most desired food qualities were each chosen by at least 45% of the group (9 women, n=20). Only one healthier food quality was desired by men at that level of popularity (Figures 3-4). The rank order of most desired healthier food qualities at home for women were "high fiber" (60% or 12, n=20), "not fried" (55% or 11, n=20), "low fat" (50% or 10, n=20), "low carbohydrate" (50% or 10, n=20), "low calorie" (45% or 9, n=20), "low sodium" (45% or 9, n=20), and "organic" (30% or 6, n=20). Men chose healthier food qualities in the following order: "low fat" (46.7% or 28, n=60), "low cholesterol" (33.3% or 20, n=60), "low calorie" (31.7% or 19, n=60), "not fried" (31.7% or 19, n=60), "high fiber" (30% or 18, n=60), "low sodium" (30% or 18, n=60), "organic" (15% or 9, n=60), and "low carbohydrate" (11.7% or 7, n=60). There were two men who indicated that healthier food qualities were not important to them when dining at home. None of the women indicated that healthier food qualities were unimportant to them at home.

When dining out frequency was considered as a variable, two significant differences were found between those who dined out less frequently (0 to 3 times in the preceding month) and those who dined out more frequently (4 or more times in the preceding month) in regard to healthier food qualities desired when eating at home. Seventy-seven percent (10 participants, n=13) of those who dined out less frequently desired high fiber foods when dining at home; however, 30% (21 participants, n=70) of those who dined out more frequently desired high fiber foods at home meals (p= 0.001). Of those who dined out less often, 46.2% (6 participants, n=13) desired low carbohydrate foods when dining at home; whereas 17.1% (12 participants, n=70) of those who ate out more frequently desired low carbohydrate foods when dining at home (p=0.020) (Table

5). For all other healthier food qualities, frequency of dining out was not a variable of consequence in ranking of preferences.

Healthier Food Qualites Desired when Dining Out

Participants were also asked to choose specific healthier food qualities that are important to them when dining out. The same list of healthier food qualities was offered as in the previous question regarding preferences at home. The six most popular choices were as follows: "not fried" (45.1% or 37, n=82), "low fat" (35.4% or 29, n=82), "not important" (23.2% or 19, n=82), "low carbohydrate" (22.0% or 18, n=82), "low calorie" (18.3% or 15, n=82), and "low sodium" (15.9% or 13, n=82) (figure 5). Men demonstrated the same preferences as the entire population on their first four ranked preferences: "not fried" (41.7% or 25, n=60), "low fat" (31.7% or 19, n=60), "not important" (26.7% or 16, n=60), and "low carbohydrate" (16.7% or 10, n=60). "Low sodium" (16.7% or 10, n=60), "low cholesterol" (15.0% or 9, n=60), and "low calorie" (10% or 6, n=60) complete the top seven healthier food quality preferences for men (Figure 6). Women followed men in only the first two ranked preferences with "not fried" (52.6% or 10, n=19) and "low fat" (47.4% or 9, n=19). Also in the top five preferences for women when dining out were "low calorie" (47.4% or 9, n=19), "low carbohydrate" (42.1% or 8, n=19), and "vegan" (15.8% or 3, n=19). "Low sodium," "high fiber," "vegetarian," and "not important" were each chosen by women at a frequency of 10.5% (2 women, n=19) (Figure 7). Women and men were different from one another in their preferences for low calorie foods when dining out ($p<0.001$). Approximately 47.4% of women (9 women, n=19) desired low calorie foods when dining out versus 10% of men (6 men, n=60) (Figure 8).

Food Qualites Desired at Home versus Away-from-Home

Women's desire for low calorie foods remained virtually unchanged when comparing home dining to away-from-home dining (home 45.0% or 9 women, n=20; and out 47.4% or 9 women, n=19) (Figure 9). Men, however, had a significant reduction in

preference for low calorie foods when dining out (p=0.003). For dining at home, 31.7% of the male participants (19 men, n=60) reported a desire for low calorie foods, which placed this food quality third in importance to men. When dining out, the preference for low calorie foods among men dropped to 10.0%, (6 men, n=60), and "low calorie" as a preferred food quality moved to the seventh ranking in importance for men (Figure 10).

Men showed a significant within-group difference in two additional areas related to desired healthier food qualities. A significant difference was found in men's preferences for low cholesterol foods at home (33.3% or 20 men, n=60) compared to their preference for low cholesterol foods when dining out (15% or 9 men, n=60) (p=0.019). For dining at home, only two male participants (3.3%, n=60) indicated that healthier food qualities were not important to them. However, the percentage grew to 26.7% of men (16 men, n=60) who thought that healthier food qualities were not important when dining out. This change represents a significant within-group difference (p<0.001). There were no women who reported that healthier food qualities were unimportant to them at home meals. For dining out, 10.5% (2 women, n=19) of women thought that attention to healthier food qualities was unimportant.

Men's preferences for low fat foods at home (46.7% or 28 men, n=60) compared to their preferences for low fat foods when dining out (31.7% or 19 men, n=60) did not represent a significant difference (p=0.092), although it was a notable reduction. The desire among female participants for low fat foods at home (50% or 10 women, n=20) changed insignificantly for dining out (47.4% or 9 women, n=19), and this healthier food quality remained one of the top three preferences among women for both at home and away-from-home dining.

"High fiber" was the healthier food quality first in importance for women dining at home (60.0% or 12 women, n=20) and was also one of the top five preferences in importance to men dining at home (30.0% or 18 men, n=60). The popularity of high fiber foods, however, changed significantly for both men and women when dining out (men p=0.003; women p=0.002). Only 10.5% of women (2 women, n=19) and 8.3% of men (5 men, n-60) reported seeking high fiber foods during meals away from home.

The entire sample, and men and women separately, ranked "low sodium" at home as one of five most important healthier food qualities. However, both the entire sample

and women displayed different within-group demand for low sodium foods at home versus away from home (entire sample, p=0.004; women, p=0.012). Forty-five percent of women (9 women, n=20) and 34.9% of the entire sample (29 participants, n=83) desired low sodium foods when dining at home. The demand for low sodium foods for women when dining out fell to 10.5% (2 women, n=19) and for the group as a whole to 15.9% (13 participants, n=82). The desire for low sodium foods among men changed from 30.0% at home (18 men, n=60) to 16.7% away from home (10 men, n=60), but that change did not represent a statistically significant difference, (p=0.084).

Men and women were significantly different from one another in desire for low carbohydrate foods when dining at home and when dining out (Figures 11-12). Moreover, neither men nor women displayed significantly different within-group change in demand for low carbohydrate foods for at home versus away-from-home dining. For women the importance of low carbohydrate foods changed only slightly from 50.0% at home (10 women, n=20) to 42.1% away from home (8 women, n=19). For men, low carbohydrate foods were much less important but still remained steady in men's rankings from at home (11.7% or 7 men, n=60) to away-from-home meals (16.7% or 10 men, n=60). For the entire sample, 18 participants indicated a preference for low carbohydrate foods at home, and 18 participants preferred low carbohydrate foods when dining away from home (at home, 21.7%, n=83; away, 22.0%, n=82).

Organic foods were somewhat important to women dining at home with 30.0% (6 women, n=20) who desired that food quality. Men were not as interested in organic foods at home (15.0% or 9 men, n=60). This food quality was less sought after by both genders when dining out. Approximately 6% of women (1 woman, n=19) and 6.7% of men (4 men, n=60) indicated this preference. Men and women considered separately did not display a significant within-group difference for preference for organic foods, (men: p=0.142, and women: p=0.075), but the group as a whole did show a significant difference in desire for organic foods at home versus away from home (p=0.028). The difference was from 18.1% who desired organic foods at home (15 participants, n=83) to 6.1% of participants (5 participants, n=82) who desired organic foods when dining away from home. Demand for vegan foods increased insignificantly for women from 10.0% at

home to 15.8% away from home. There were no male participants who indicated a desire for vegan foods.

Demand for Nutrient Information on Restaurant Menus

For questionnaire question 8 (Table 1), participants were asked to indicate what nutrient information, if any, they desired to have available on restaurant menus. The group ranked preferences as follows: calories per serving (58.3% or 49 participants), fat per serving (45.2% or 38 participants), serving size (41.7% or 35 participants), sodium per serving (25% or 21 participants), carbohydrates per serving (23.8% or 20 participants), cholesterol per serving (22.6% or 19 participants), "not important" (13.1% or 11 participants), Weight Watchers® Points (11.9% or 10 participants), diabetic exchanges (9.5% or 8 participants), and "other" (7.1% or 6 participants, n=84) (Figure 13). Men and women chose the same three nutrition facts (calories per serving, fat per serving, and serving size) as their top choices for display on restaurant menus (Figures 14-15).

Despite the shared preference for serving size information, a significant difference was discovered between men and women in their demand for this nutrition information (p=0.002). Preference among men for serving size information was 31.1% (19 men, n=61) and among women, 70.0% (14 women, n=20). A second significant difference between genders was in desire for carbohydrate information (p=0.009). Approximately 16% of men (10 men, n=61) desired carbohydrates displayed on menus. Women desired this information at a frequency of 45.0% (9 women, n=20).

Men and women were significantly different in their desire for Weight Watchers® information on a menu (p<0.001). Thirty-five percent of women and 4.9% of men indicated a preference for Weight Watchers® Points. Finally, 16.4% of men (10 men, n=61) indicated that nutrition information is not important to them on a restaurant menu; whereas none of the female participants indicated that nutrition information is unimportant to them when dining out (Figure 16).

In response to question 8 regarding desire for specific nutrient information on menus (Table 1), 86.9% (73 participants, n=84) indicated an interest in at least one

nutrition component. Eleven participants (13.1%, n=84) indicated that nutrient information on restaurant menus is unimportant to them.

Difficulty Determining Healthier Menu Choices

In question 14d (Table 1), participants were asked to indicate whether in the past month they had experienced any difficulty in determining healthier choices on a restaurant menu. Thirty-seven participants (45.1%, n=82) reported that they had not had any difficulty. Greater than 50% of men (31 men, n=61) felt that they had experienced no difficulty. Although a higher percentage of women (72.2% or 13 women, n=18) indicated difficulty in determining healthier menu choices, there was no statistically significant difference between men and women in their perceived ability to make such choices (p=0.085).

Preferences for Presentation of Nutrient Information

For question 7 of the research questionnaire (Table 1), participants were asked how they prefer to see healthier menu items denoted or advertised. The entire sample population, and both men and women as groups, indicated the same three choices as most desired methods for denoting healthier menu items. Fifty-six percent of the entire sample (47 participants, n=84) and 57.4% of men (35 men, n=61) chose "symbol on the menu" as the most desired method. "Symbol on the menu" was the second most popular choice among women (55% or 11 women, n=20). The first method of choice for women for displaying nutrition information was a section on the menu. This method was chosen by 75% of women (15 women, n=20). Fifty percent of the entire sample (42 participants, n=84) and 41% of men were in favor of having healthier menu items in a special section. The higher preference among women for a section on the menu represents a significant difference between genders (p=0.008). A restaurant's web site was the third choice most preferred by all groups. Approximately 27.4% of the entire sample (23 participants, n=84), 24.6% of men (15 men, n=61), and 35.0% of women (7 women, n=20) favored having nutrition information for healthier entrées denoted on a restaurant's website. As

their fourth preferred method, men chose having a server convey information about healthier menu items. Approximately 20% of men (12 men, n=61) indicated this preference. However, none of the female participants desired to have the server help them choose a healthier menu option (Figures 17-20).

Willingness to Order Healthier Items on Restaurant Menus

Finally, question 15 of the research questionnaire (Table 1) asked whether participants would be willing to order healthier menu items if those items were indicated as such on a restaurant menu. Approximately 65.9%, (54 participants) indicated "yes," 26.8% (22 participants) indicated "sometimes," and 7.3% (6 participants) indicated that they would not order those menu items (n=82). Together, the "yes" and "sometimes" responses accounted for 92.7% of the entire sample. Those participants who dined out most often, (four or more times in the preceding month), were not different in their responses from the entire sample population (p=0.735). Neither were men and women statistically different from one another in willingness to order menu items denoted as healthier (p=0.660). Approximately 92% of men (55 men, n=60) indicated that they would at least sometimes order menu items denoted as healthier. Approximately 95% of women (18 women, n=19) indicated that they would be willing to do so.

CHAPTER V

DISCUSSION

Roughly two-thirds of study participants had eaten at a non-fast food establishment on four or more separate occasions in the preceding month. Greater than half of the group reported spending more than $20.00 per person including alcohol and gratuity. Therefore, the preferences and behaviors of the sample population might reflect, not only trends of the quick-serve dining population, but also the preferences and behaviors of those who frequent limited service or casual to finer dining establishments.

Demand for Healthier Menu Options

In an earlier study, Kruger and colleagues discovered correlates between specific dining out behaviors and successful weight loss and weight maintenance. Kruger's study revealed an association between successful weight loss maintenance and an individual's confidence in his/her own ability to track energy intake, eat less, exercise more, and *limit dining out* (22). Notably, almost half of the participants responding to questionnaire question 8 (Table 1) indicated that they at least sometimes avoid eating out to meet dietary needs. Moreover, 47% of those with reported hypertension, 43% of those with diabetes, and 22% of overweight participants indicated that they at least sometimes avoid dining out in order to meet dietary needs. The logical inference is that health-conscious diners might have less difficulty and more self-confidence in making healthier food choices at restaurants if nutrient information such as calories per serving, fat per serving, and sodium per serving, were made available. Correspondingly, restaurant owners who are willing to supply nutrient information could potentially capture a greater market share.

Preferences and behaviors reported by participants revealed a demand for healthier menu options. Both genders indicated strong desire for healthier food qualitites when dining at home. When participants were asked to indicate healthier food qualities

desired when dining out, "not fried" and "low fat," which were highly ranked for at-home dining, remained high priorities for both men and women. However, women as a group clearly displayed a keener interest in healthy eating for both at-home and way-from-home dining. Among women, four of the highest priority healthier food qualities desired at home—"low calorie," "low fat," "low carbohydrate," and "not fried"—remained in very high demand for women when dining out. For men, however, some marked shifts in priority can be noted based upon their responses to questionnaire questions 9 and 10 (Table 1). A significant increase was noted in the number of men who thought that healthier food choices were not important for dining out opportunites. "Not fried" and "low carbohydrate" were the only other selections that increased in popularity for men from dining at home to dining out situations. However, although overshadowed by women's bolder, more obvious demand for healthier foods, men did reveal through responses to other questionnaire questions, a rather consistent desire for healthier eating. For example, in response to questions regarding menu ordering strategies to prevent overeating, both men and women showed high tendencies to invoke tactics to reduce intake. In all but one instance, women either matched or exceeded the men in tendencies to try preventative menu ordering strategies, but men showed a greater tendency than women in asking a waiter for ingredient or preparation methods.

Marked shifts in food qualities desired by men in dining out situations could possibly be related to Burton's theory that consumers are not adept at accurately estimating calories and fat in restaurant entrées based upon menu descriptions alone (9). Perhaps some men completely dismiss any notion of healthy eating in dining-out situations. However, some could be simply shifting to an alternate strategy (one which they perceive as more reliable in a restaurant dining environment) for avoiding less healthful dishes. Food qualities such as "not fried," "low fat," and "low carbohydrate" desired by participants in dining out situations might be less difficult to ascertain from a menu description of an entrée than would be a more objective quality such as "low calorie" or "low sodium." In designing the questionnaire, this researcher did not foresee the need to inquire about personal motivations connected to an individual's desire for specific food qualities. Perhaps a more pointed question directed toward revealing

motivation for food choices could have offered a better explanation for this apparent difference between men and women.

Demand for Nutrient Information on Restauarant Menus and Preferred Methods of Disclosure

An overwhelming 87% of participants indicated a desire for nutrient information for at least one nutrition component. Most participants desired information on calories per serving, fat per serving, and serving size—components which are, incidentally, focal points on the packaged food label. Very few men, but none of the women participants, indicated that nutrition information on menus was unimportant to them.

Men and women chose the same top three methods for disclosure of nutrition information. Those choices were "symbol on the menu," "section on the menu," and "restaurant website." Seventy-five percent of women selected "section on the menu" as disclosure method of choice. Considering the strong demand among women for healthier menu options and strong desire for healthier food qualities in general, it is intriguiging to consider why women might prefer a separate section of healthier options from which to choose. Could their predetermined plan to make healthier choices be the motivation behind a desire to focus on a separate section rather than confront the temptation involved in choosing from a general menu with healthier choices intermingled with less healthful options? Public health advocates may want to consider which type of menu lends itself to more healthful food choices by consumers. The same information might be valuable to restaurant menu planners who hope to maximize profits and promote particular menu offerings. Representatives from both sides of the debate stand to benefit from such insight, particularly as lawmakers are forming a consensus and writing mandates.

Difficulty Determining Healthier Menu Choices

Results of this study lend support to Burton's theory that consumers are unable to accurately estimate nutrient information for restaurant entrées (9). Over half of this study's participants self-reported difficulty determining healthier menu choices based on

menu descriptions alone. A vast majority (72%) of women indicated difficulty identifying healthier choices.

Willingness to Order Healthier Items on Restaurant Menus

Finally, an overwhelming majority of participants clearly indicated a willingness to order menu items denoted as healthier. Among women, 84% indicated "yes," and 95% indicated "yes" or "sometimes,"when asked if they would be willing to choose such menu offerings. Sixty percent of men responded "yes," and 92% indicated "yes" or "sometimes."

Data collection for this research project has been successful in capturing the participants' preferences and dining-out behaviors. The results indicate that consumers are interested in healthier menu options. A majority reported having difficulty choosing healthier menu options without disclosure of nutrient information. Consumers revealed strong demand for specific nutrient information on menus. Furthermore, participants have clear preferences regarding the method of disclosure of nutrient information in the restaurant setting, and the vast majority indicated a willingness to at least sometimes order healthier menu items.

Limitations

The questionnaire developed for this study, although reviewed by a panel of experts, was not validated or pilot tested. This factor is a limitation of this study. Additionally, the majority of participants were male. The choices of venues for data collection, while specifically chosen to capture a population who were dining out frequently, may have contributed to the lower percentage of female participants. While the Atlanta Boat Show participants were somewhat more equally representative of both genders, the NPFDA Poultry Suppliers Showcase was more heavily attended by men than women. As is the case in all questionnaire driven research, participants were allowed to self-report, and terms such as "low fat," "low cholesterol," and "high fiber" were not pre-defined for the participants.

Future Research

Researchers have begun to study the effect of introducing nutrient information on restaurant menus. It will be important to observe whether the provision of nutrition information actually results in healthier food choices or whether sceptical restaurant owners have been correct in assuming that diners talk about healthy eating and may even demand to know nutrient content of restaurant foods but still choose to eat whatever they please, regardless of nutrient content, when they reach the dining table. However, if the healthier menu options draw a larger customer base to a restaurant, actual menu choices made at the table may be of little importance to restaurant owners.

As researchers continue to examine restaurant dining behaviors, it will become important to discover the motivation behind the shifts in preferences for particular healthier food qualities desired in the home setting versus the dining out setting. Perhaps consumers want to indulge and simply feel less obligated to eat healthier foods when dining out. The results of this research, however, do not indicate a total abandonment of desire for healthy eating. Difficulty in determining nutrient content of restaurant foods without nutrient disclosure might lead consumers to shift reliance from nutrition facts to best estimates of nutrient content or to some of the menu ordering strategies discussed previously.

Researchers in subsequent studies might do well to investigate any effect related to the "veto power" of a health-conscious diner among a group of diners (13). Clearly female participants displayed a more consistent demand for healthy food qualities regardless of setting. If a societal goal is to help individuals make healthier choices, then it might be useful to understand whether the desires of one consumer within a group can influence choices of the others. Also, a validation of the "veto power" theory might be a pivitol factor for restaurant owners in their decisions to voluntarily display nutrient information.

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APPENDICES