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The Effect Of Suggestive Selling By Wait Staff On Food Consumption

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The Effect of Suggestive Selling by Wait Staff on Food Consumption
(TITLE)

BY

Gwen Zumwalt

THESIS

SUBMITTED IN PARTIAL FULFILLMENT OF THE REQUIRMENTS FOR THE
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Master of Science

IN THE GRADUATE SCHOOL, EASTERN ILLINOIS UNIVERSITY
CHARELSTON, ILLINOIS

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ABSTRACT

Factors that influence our dietary choices are important because our nation is facing an obesity epidemic. This study analyzed the influence of wait staff on food consumption in a restaurant environment. The University Institutional Review Board approved the study, and informed consent was obtained. The subjects, college students (n=46), were randomly assigned into a control or treatment group. Every subject was initially given one serving of each food item. The meal consisted of rolls, soup, pasta, cookies, and a beverage. Subjects were excluded from the study if they had diabetes or a food allergy. Subjects in the control group were offered beverage refills but not offered additional portions of food. Subjects in the control group could ask for refills if they desired. Subjects in the treatment group were offered refills of each food served throughout the meal. The amount of refills given to participants was tallied, and the amount of each food item consumed was recorded for each subject. The treatment group's increase in consumption of rolls (85%), pasta (27%), and cookies (71%) was statistically significant ($p \leq 0.05$) compared to the control group. The increase in soup consumption (38%), seen in the treatment group, was not statistically significant ($p \geq .05$). In

conclusion, suggestive selling by wait staff can significantly influence consumption. Consumers need to be aware of the influence that wait staff have on their dietary intake.

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Chapter 1

INTRODUCTION

Americans are facing an obesity epidemic. The convergence of the prevalence of obesity and the obese individual's increased risk for diseases, such as heart disease and cancer, makes obesity a prominent health care issue. Exploring ways to influence people to make better dietary choices is crucial for our nation's health (Burton and Creyer, 2004).

A population that is in need of greater attention is college students. Habits related to nutrition and physical activity are often developed during this period of life and will carry over into adulthood. Obesity for college-age students is on the rise. This can be attributed to a decrease in physical activity and an increase in disordered eating during college years (Desai, Miller, Staples, 2008).

An area of research not thoroughly studied that may help in the prevention of obesity is factors affecting dietary choices when dining out (Burton and Creyer, 2004). Environmental factors in a restaurant setting have been shown to influence consumption. Table items, such as packages, glasses, and dishes, can increase or decrease the amount of food consumed. The environment surrounding restaurant customers, such as decorations or background

music, has also been shown to affect consumption. Even family and friends play a role in influencing how much food is consumed (Wansink, 2006). An as yet unexplored aspect of restaurant dining is the influence of wait staff on a customer's intake.

Statement of Problem

Restaurant wait staff is responsible for making sure their customers are comfortable and satisfied. By making sure their customers have had plenty of food, they may be pressuring them to eat too much food. Suggestively selling more bread, drinks, soup, pasta or dessert items may cause restaurant customers to consume more than they ordinarily would. The literature addresses that the wait staff is responsible for suggestively selling to customers, but research is needed to determine if suggestive selling is effective. This study explores whether customers are not only meeting their personal need but exceeding it due to the influence of the wait staff.

Purpose of the Research

The purpose of this study is to determine the effect that suggestive selling by the wait staff has on the amount of food consumed. This study focused on the difference between the amount of food consumed by a group of customers that were offered refills from wait staff compared to a

group of customers that were not offered refills from wait staff. This study also analyzed whether or not simply offering refills, even without further persuasion, impacted consumption.

Research Objectives

The research objectives of this study include:

1. To determine if suggestive selling by the wait staff had a significant effect on consumption of rolls in a restaurant setting.
2. To determine if suggestive selling by the wait staff had a significant effect on consumption of soup in a restaurant setting.
3. To determine if suggestive selling by the wait staff had a significant effect on consumption of pasta in a restaurant setting.
4. To determine if suggestive selling by the wait staff had a significant effect on consumption of cookies in a restaurant setting.

Research Hypotheses

The research hypotheses of this study include:

1. Suggestive selling by the wait staff has a significant effect on consumption of rolls in a restaurant setting.
2. Suggestive selling by the wait staff has a significant effect on consumption of soup in a restaurant setting.

3. Suggestive selling by the wait staff has a significant effect on consumption of pasta in a restaurant setting.

4. Suggestive selling by the wait staff has a significant effect on consumption of cookies in a restaurant setting.

Significance of the Study

This study is significant for consumers and health professionals. Consumers will have more insight into the environmental cues that may affect intake, which may empower them to prevent over consumption. This type of research may enable dietitians and other professionals in the health field to assist consumers in making better dietary choices. Findings from this study may help the consumer to strategize more effectively to face the external pressures that influence food consumption.

Assumptions

It was assumed that the participants would find the food tasteful. It was also assumed that the subjects came to the study hungry and with a positive attitude.

Definition of Terms

1. Wait staff are the waiter or waitress that are responsible for serving restaurant customers.

2. Suggestive selling is the act of trying to persuade customers to accept a recommendation.

Summary

Obesity is a rising problem for our nation, and college students are especially at risk. (Desai, Miller, Staples, 2008). Gaining a better understanding of the environmental cues that impact consumption may prevent over consumption. An environmental factor that has not been thoroughly addressed involves the suggestive selling of wait staff in a restaurant setting.

Chapter 2

REVIEW OF LITERATURE

This review of literature will examine the influence of environmental factors on consumption, especially in a restaurant setting. The impact of the atmosphere created by the restaurant and the people within the restaurant will be investigated.

The Restaurant Industry

There has been a major increase in the amount of food consumed away from home. The restaurant industry has grown thereby having a greater impact on American's eating habits. In 1970, only 26% of money used for food was spent on eating out. In 1996, the amount of money spent on dining out increased to 40% (Ledikwe, Ello-Martin, and Rolls, 2005). In 2003, the restaurant industry had been growing for 12 consecutive years, and sales were estimated to reach \$426.1 billion that year (Powers and Hess, 2003). According to the National Restaurant Industry, restaurant sales have now reached \$537 billion. There are 935,000 restaurant locations and 12.8 million people employed in the restaurant industry (Restaurant industry facts, 2007). Food prepared outside of the home makes up one-third of people's daily calories (Guthrie, Lin, and Frazao, 2002).

Portion Sizes

Infants and toddlers have an innate ability to regulate their energy intake (Fox, Devaney, Reidy, Razafindrakota, Ziegler, 2006). At around age 4 or 5 years, children start becoming influenced by external cues. In a study led by Barbara Rolls (2000), 5-year-olds consumed a larger portion of macaroni and cheese when a larger portion was given, but 3-year-olds ate the same portion when a larger portion was served. The 3-year-olds were able to listen to their hunger cues instead of being influenced by the larger portion (Rolls, Engell, Birch, 2000). Environmental cues, including portion sizes, have a greater impact on consumption during adulthood. As children are exposed to an adult diet, they are gradually more influenced by social and cultural adult eating habits (Rolls, Engell, Birch, 2000).

Restaurants have been shown to serve portions that are larger than the United States Department of Agriculture and Food and Drug Administration recommendations. Customers at restaurants are served food on larger plates and in larger containers. Since a significant amount of people's daily consumption is provided by eating out, restaurants could be contributing to the obesity epidemic. The increase in portion sizes has occurred in parallel with the increase in overweight and obese individuals. Large portions encourage

overeating (Young and Nestle, 2002). It is especially difficult for consumers to judge the correct portion when food, such as pasta, has no defined shape. Consumers can also be persuaded to consume more food when the larger portion appears to be the best value at a restaurant (Ledikwe, Ello-Martin, and Rolls, 2005).

Levitsky and Youn (2004) conducted a study that supported Young and Nestle's theory about portion size. During a study, 9 male and 4 female undergraduate students were told to eat their preferred amount of vegetable soup, rigatoni pasta and tomato sauce, breadsticks, and ice cream at a buffet. The next week, they were divided into 3 groups. They were offered 100%, 125%, or 150% of the amount of vegetable soup, rigatoni pasta and tomato sauce, breadsticks, and ice cream that was consumed the week before. The subjects ate significantly more when they were offered the larger portions (Levitsky and Youn, 2004). In another study, some restaurant customers were given the standard portion of an entrée (248 g), and some customers were given a larger portion (377 g) of the same entrée. The subjects given the larger portion ate 43% more. Both groups of customers felt that the portion size given to them was adequate (Diliberti, Bordi, Conklin, Roe, and Rolls, 2004).

Fifty-four percent of American adults aim to "clean their plates." People have difficulty with estimating the amount of food they have consumed, so they use the size of their plate or container to guide them. Instead of listening to their hunger cues, they may pay more attention to visual cues (Wansink, Painter, and North, 2005). By altering a visual cue, Wansink, Painter, and North (2005) analyzed whether or not consumption would be affected. Thirty-one of the 54 participants were not able to rely on an empty bowl as an external cue because they were eating out of refillable bowls, operated by a special apparatus. The participants with refillable bowls ate 73% more soup than the participants with normal bowls, but they did not estimate that they had eaten more than the normal serving. This study showed how much people rely on external cues instead of satiety (Wansink, Painter, and North, 2005).

Restaurant atmosphere

The way the items on a menu are presented has been shown to influence customers' choices. When descriptive names were used for the menu items, customers were convinced that they were tastier than the generic menu items. Descriptive words allow customers to associate the food with their own experiences. If their association with the description is positive, they expect the food to taste

good, and they also have a positive attitude about the overall restaurant (Wansink, Painter, and Van Ittersum, 2001).

Peer pressure is said to have an influence on the dietary choices people make. When people have a companion while eating, their consumption is influenced by social norms more than if they were eating alone. This is especially true for Americans (Bagozzi, Wong, Abe, and Bergami, 2000). Eating in a group causes people to eat greater amounts than if they are eating alone. People tend to mimic the eating habits of the people surrounding them. Also, if people feel like others around them are observing their consumption, they tend to eat less (Herman, Polivy, and Roth, 2003). It has been discovered recently that social networks may have an effect on obesity. Friends with a close connection have a greater chance of affecting each other's weight compared to people living in the same neighborhood. Therefore, geographic location, or proximity, was shown to have less impact on obesity than strong friendships (Christakis, 2007).

Parents, guardians, and other family members influence the types and amounts of food children consume. Eating meals as a family has a positive influences on intake. Family meals promote intake of fruits, vegetables, fiber,

calcium, folate, iron, vitamins B-6, B-12, C, and E and decrease the amount of saturated fat and soda pop consumed (Neumark-Sztainer, Hannan, Story, Croll, and Perry, 2003).

Consumption can be impacted by people's affective state. To test this theory, subjects were assigned to watch either a happy or a sad movie. As the movie was viewed, they ate popcorn. Twenty-eight percent more popcorn was consumed when the sad movie was being viewed (Garg, Wansink, and Inman, 2007). An unhappy state of mind combined with large portion sizes creates an even greater risk for overeating.

Consumers are influenced by food brands. If a brand is well-known, diners have greater expectations. For example, diners at a large Midwestern University restaurant were given complimentary Cabernet Sauvignon, or so they thought. They were actually given cheap wine with a brand name of Charles Shaw. A fake label was placed on the bottles to create the illusion.

Even though all the guests were drinking the same wine, everyone believed the wait staff when they told them they were from different locations. Half of the diners were told their wine was from a California winery, and the other diners were told they were being given wine from North Dakota. The expectation that the California wine

would be better caused the diners drinking wine with the California label to consume eleven percent more food. They also stayed seated at their table for 10 minutes longer than the other guests. The people given the North Dakota wine said the wine was bad and the food was less tasty. The illusion that was created caused expectations that impacted consumption (Wansink, 2006).

Milliman (1986) analyzed the affect that atmosphere has on consumer behavior. The feeling that is created by the atmosphere influences decisions. Playing background music in a restaurant was shown to make a difference. There was a significant difference in the amount of time customers took to eat. When slow music was playing, diners took 11 more minutes to eat compared to when fast music was playing. People were waiting an average of 13 minutes longer for their tables when the background music was slow. The slow music benefited the restaurant in bar sales. Customers were buying 3.04 more drinks when slow music was played. When the atmosphere was more relaxed, customers felt comfortable ordering more drinks. A relaxed restaurant environment causes diners to stay longer and in turn possibly order more (Milliman, 1986).

Fast-food environments are often loud and colorful, an environment designed to hurry customers through the meal.

This concept was supported by findings from a study done in a city in the Midwest in a restaurant setting. After the food was ordered, customers were either seated in the usual loud and colorful environment or an environment with white tablecloths, soothing music, plants, paintings, shades, and candlelight. The customers in the loud and colorful room ate more of their ordered food and drinks and finished their meal in a shorter amount of time. The people in the quiet atmosphere were served their food and given drink refills by a wait staff. The relaxing environment caused people to eat 11 minutes longer and caused them to often get dessert. They enjoyed the food more, and it was more likely that they would return within a month (Wansink, 2006).

Americans are guilty of making food choices based solely on convenience. People often eat at McDonalds because of the convenience, not just for taste (Hein, 2007). People often eat out, in general, because it is more convenient than cooking at home. Diners may be persuaded by convenience more than they realize (Salanova, Agut, Peiro, 2005).

The Wait Staff

Restaurant customers have expectations for their waiter or waitress even though the wait staff is dealing

with time pressure and a variety of customer demands. To keep the diners satisfied, restaurant employees should remain polite and friendly (Larsen, Ogaard, and Marnburg, 2005). When a waitress was interviewed, she admitted that to be successful, waiters and waitresses have to have a good memory to keep track of customers' orders. Once the orders are placed, the waiter/waitress is responsible for not only taking orders but delivering the food, giving refills, and taking care of other requests in a timely manner. This can be difficult to manage while keeping a positive attitude towards customers (Rose, 2001).

The effort of the wait staff plays an important role in customer satisfaction. Research has been conducted that studied whether or not the sex of the service provider influenced customers' opinion of service quality in a fast food setting. The men that generally thought women provided a higher quality of service rated men as having lower reliability, assurance, and empathy. These men, however, did rate men servers as more responsive and tangible than women servers. Some women thought that women servers provided a higher quality of service, but their ratings were the same for tangibles, responsiveness, empathy, and assurance for men and women servers. These women actually rated men servers higher for the reliability

dimension. Besides gender stereotypes, age, race, and other stereotypes exist for servers in fast food environments (Fischer, Gainer, and Bristor, 1997)

A way to assess if the customers have a positive opinion of their waiter/ waitress is the amount of tip given. When the wait staff touches customers on their shoulder or palm of their hand, it has been shown to increase the tip (Cusco and Wetzal, 1984). Pairs of customers consisting of one male and one female were studied. After the food was given, women that were touched by a waitress on the shoulder tipped significantly higher than customers not touched at all, but men that were touched by a waitress did not tip as high as the women (Stephen and Zweigenhaft, 1985). When the wait staff touches customers, consumption is also affected. More alcohol was consumed by people that were touched by the waitresses compared to people that were not touched (Kaufman and Mahoney, 1999).

There are also other tactics that wait staff can use to create a good rapport with customers and increase their tips. Servers should greet their customers by introducing themselves. This introduction allows the server to seem friendly and polite. To test this theory, couples at a restaurant were assigned either a waitress that greeted

them, smiled, and gave her name or a waitress that greeted them, smiled, and omitted her name. The waitresses that gave their name received an average tip of 23%, but the waitresses that did not give their name received an average tip of 15%. A sincere and professional introduction will be appreciated by customers (Lynn, 1996). This kind of behavior by the wait staff may create a better rapport with customers.

Wait staff can also gain customer appreciation by squatting next to the table. Squatting next to the table creates postural congruence between the waiter or waitress and the customer. Making eye contact is easier since they are on the same eye level, and they are also in closer proximity to each other. As a result, customers like their waiter or waitress more and tip higher. To test this theory, a waiter from a Mexican restaurant and a waitress from a Chinese restaurant tried squatting versus not squatting next to the table. When the waiter tried squatting, he earned an 18% tip instead of a 15% tip when he was just standing. The waitress earned a 15% when squatting versus a 12% tip when only standing. Even though squatting next to the table is somewhat informal, casual-dining restaurants may take advantage of this strategy (Lynn, 1996).

When servers smile at customers, it has been shown to increase tips. Research has proven that smiling is often associated with people that are more attractive, sociable, competent, and sincere. At a cocktail lounge in Seattle, a study was done to see if smiling resulted in higher tips. The average tip for wait staff with an open-mouth smile was 48 cents while the average tip for wait staff with a closed-mouth smile was 20 cents. Therefore, a sincere smile often increases gratuity. Even drawing a smiley face and/or writing "thank you" on the back of customers' checks also has been shown to increase tips for restaurant wait staff (Lynn, 1996).

The wait staff plays a big role in people's dining experience. Waiters and waitresses are responsible for clearing away dishes once guests are finished with them. Wansink and Payne (2007) experimented with keeping the bones from eaten chicken wings on the table. Consumption was affected by being able to see how much had already been eaten. Subjects ate 2 less chicken wings per person when they were able to keep track of what they had already consumed (Wansink and Payne, 2007). In this case, the wait staff had the power to effect how much or little the customers ate. They could be affecting consumption in other ways as well.

Suggestive Selling

Past literature suggests that suggestive selling appears to play a role in satisfaction for guests, revenue, and tips (Owen 2001, Strianese, 1997, Johnson and Masotti, 1990, Kotschever and Luciani, 1996, and Ralis and O'Brien 1986), but research is needed to understand what persuades consumers to accept the servers' recommendations. It has been shown that people are more often persuaded by a source that they believe to be dependable or trustworthy (Chaiken, 1987, Cialdini, 1987). Mertz's theory on persuasion for one source and one recipient takes more than one dimension into consideration. He claims that source credibility is based on safety or predictability, qualification or level of expertise, and dynamism or energy of the source. The recipient will compare themselves to the source in these three categories. If the source is rated higher, it is more likely that the consumer will be persuaded (Mertz, 1966).

Servers making recommendations for food and beverages at restaurants is expected by customers. If the wait staff is overly persuasive, it is likely that the suggestive selling will be unsuccessful. Being overly persuasive can be perceived as manipulation (Borchgrevink and Susskind, 2006). Friestad and Wright's theory called the Persuasion

Knowledge Model (PKM) (Friestad and Wright, 1994) shows that if a consumer feels as though the server is behaving unexpectedly or similar to previous servers that were manipulative, they will most likely not be persuaded by them. If the server seems knowledgeable about the food and/or beverage being suggested, the customer will more likely be more receptive to their expertise. As the consumers' understanding of the food item increases, their concern with the server's expertise fades, and they begin to focus more on the information being obtained (Borchgrevink and Susskind, 2006).

Theory of Planned Behavior

The theory of planned behavior has been used to predict how humans will behave (Ajzen, 1991). This theory can be applied to suggestive selling by restaurant servers. First, the theory suggests that a person has a behavioral belief. The behavioral belief refers to the perceived outcome or consequence of a certain behavior. For example, the customer has a prediction of whether or not their purchase of the suggested food item will be worthwhile. People also have normative beliefs about behaviors. They question whether being persuaded into having a certain food item would be acceptable by others. There are also control beliefs. An example related to suggestive selling would be

the cost of the food item. If the cost is more than they want to spend, they are less likely to make the purchase (Borchgrevink and Susskind, 2006).

Past experiences play a role in decisions that are made in the present. If customers have had positive results from accepting recommendations from servers in the past, they are more likely to accept recommendations again. If they had a negative experience with accepting recommendations previously, they probably will not take a similar risk again (Borchgrevink and Susskind, 2006).

A study was conducted that analyzed the customers' perspective of how informed their servers appeared. There were 550 subjects that consisted of college-age students that were 21-years-old or older and parents of undergraduate students (under 21 years of age). The effect of the servers' expertise on beverages being served, as well as the participants' past experience with server recommendations, were both considered in the results. This study showed that if a server appeared more knowledgeable about the suggested beverages than the participant, the recommendation was less likely to be accepted. This conclusion was opposite of Mertz's theory. The servers were suggestively selling wine. The researcher believed that the reason the participants declined the offers of the

wait staff may have been because of their hesitation in wanting to try new wine, not because of the whether or not the servers were knowledgeable. These results were, on the other hand, consistent with the idea that if a server seemed unknowledgeable altogether, they were less likely to persuade a customer. Just as previously believed, there was a strong correlation between the customers that were satisfied by previously accepting recommendations from servers and the customers that agreed to try beverages suggested by these servers (Borchgrevink and Susskind, 2006).

As this review of literature concludes, consumption is often affected by factors that people are unaware of. The act of suggestively selling food items may be an environmental cue that often goes unnoticed by consumers and even researchers. The members of the wait staff at restaurants are trying to keep their customers satisfied in order to keep them coming back and to earn a reasonable tip. Therefore, the customer service may be slightly persuasive. When waiters or waitresses approach people's tables and offer more bread, more drinks, or even a second helping of their main entrée, is that enough to convince them to eat more? Knowing that the food will be brought to the customers by the wait staff, and people do not even

have to get up to serve themselves, could that convenience be their weakness? Suggestive selling by wait staff could be another key component to the rise in over-consumption.

Chapter 3

METHODOLOGY

The purpose of this research was to determine the effect that suggestive selling by the wait staff has on the amount of food consumed. Data were collected by analyzing consumption in a restaurant setting and by a self-administered questionnaire.

Population and sample

Informed consent was documented when the subjects arrived for the meal. The design of the study was experimental. There was a control group and a treatment group. Tables 1, 2, and 3 were in the treatment group, and tables 4, 5, and 6 were in the control group. The participants were randomly assigned to one or the other. They drew a table and seat number out of a basket to ensure that the participants were randomized.

The participants were a sample of male and female college-aged students from a Midwestern University. The university population consists of 42% males and 53% females. There were 46 participants in the study. Fliers about the study were posted throughout campus. Those people interested in participating contacted the researcher via email and filled out an exclusion criteria form to determine whether or not they are eligible to participate.

College students with diabetes or any known food allergy were excluded from the study to avoid any complications or possible harm to the participants.

Instrument

A questionnaire containing eight items was designed. The participants were asked to answer the questions related to their dining experience after the meal was completed. The subjects' age and gender were the demographics obtained from the questionnaire. On the questionnaire, the subjects were asked to estimate how many ounces of soup, pasta, and beverage they consumed and recall how many rolls and cookies they consumed. This was done to see if participants lost track of the amount of food they had consumed. This is a variable that may enable suggestive selling by wait staff to be more successful since customers may accept more servings if they do not believe they have consumed as much food as they have. They were also asked if they believed that the wait staff influenced how much they ate. The questionnaires were distributed in-person and completed individually. The questionnaires took about 5 minutes to complete. The overall length of participation, including meal and questionnaire completion, was about 45 minutes.

Data Collection

The researcher met with the wait staff one week before the study to give instructions. Before the study, the process of the study was reviewed with the wait staff and any questions were addressed.

The control group had a wait staff that did not ask for refills, except for beverages. The treatment group had wait staff that offered refills for all items on the menu. The menu items included soup, rolls, drinks (water and unsweetened ice tea were offered), the main course (pasta), and dessert (a cookie). Each subject was given one serving of each of the food items, but refills for every item were only offered to the treatment group. The purpose of offering beverage refills to the control group was to prevent those participants from becoming suspicious of the wait staff returning to the other tables more frequently.

The serving sizes included 6 ounces of soup, 8 ounces of beverage, 1 roll, 8 ounces of pasta, and 1 cookie. The consumption of the treatment group was compared to the consumption of the control group. The questionnaire was completed at the conclusion of the meal. To ensure confidentiality, the participants' names were not used in any way during the study. Each subject was assigned a number, and they were identified by their number.

Data Analysis

The wait staff was responsible for recording the number of refills each participant received on a form, which included their assigned table number, subject numbers, and each food item. The wait staff of the treatment group was also responsible for recording the statement made by the first person at each table after an offer for refills was made. At the conclusion of the meal, the amount of rolls, soup, pasta, and dessert that was left remaining on the plates and in the bowls was recorded in order to determine the total consumption of each participant. Each plate and bowl was labeled with the table number and subject number.

A t-test was used to analyze the amount of food consumed by the treatment group compared to the control group. A t-test of ≤ 0.05 was considered statistically significant. The averages and standard deviations were compared.

Chapter 4

RESULTS AND DISCUSSION

Description of the Sample

Forty-six students from a Midwestern University participated in this study. Thirty-four (74%) of the participants were women, and 12 (26%) of the participants were men. The participants ranged in age from 18 to 38 years old. The mean age was 21.5. Twenty-three participants were part of the treatment group, and 23 participants were in the control group.

Consumption

The total amount of each food item was recorded for each participant. Table 1 provides the ounces of soup and pasta and number of rolls and cookies consumed by each participant in the treatment group, and Table 2 provides the ounces of soup and pasta and number of rolls and cookies consumed by the each participant in the control group. Table 3 provides the averages and t-test results for the consumption of each group.

The first objective was to determine if suggestive selling by the wait staff had a significant effect on consumption of rolls in a restaurant setting. The treatment group consumed a significantly ($p \leq 0.05$) greater amount of rolls compared to the control group. Eighty-five

percent more rolls were consumed in the treatment group. This is in agreement with the first hypothesis. Thus, the first hypothesis, which states that suggestive selling by the wait staff has a significant effect on consumption of rolls in a restaurant setting, was accepted.

The second objective was to determine if suggestive selling by the wait staff had a significant effect on consumption of soup in a restaurant setting. The increase in soup consumption of 38%, seen in the treatment group, was not statistically significant ($p \geq .05$). These results do not support the hypothesis that soup consumption would be significantly effected by the wait staff suggestively selling. Thus, the second hypothesis, which states that suggestive selling by the wait staff has a significant effect on consumption of soup in a restaurant setting, was rejected.

The third objective was to determine if suggestive selling by the wait staff had a significant effect on consumption of pasta in a restaurant setting. Twenty-seven percent more pasta was consumed by the treatment group compared to the control group. This result was statistically significant ($p \leq 0.05$), confirming the hypothesis. Thus, the third hypothesis, which states that suggestive selling by the wait staff has a significant

effect on consumption of pasta in a restaurant setting, was accepted.

The fourth objective was to determine if suggestive selling by the wait staff had a significant effect on consumption of cookies in a restaurant setting. Seventy-one percent more cookies, a significantly greater ($p \leq 0.05$) amount, were consumed in the treatment group compared to the control group. These results support the hypothesis for cookie consumption. Thus, the fourth hypothesis, which states that suggestive selling by the wait staff has a significant effect on consumption of cookies in a restaurant setting, was accepted.

Since most of the food items were significantly affected by the wait staff suggestively selling, the results were consistent with other research. Environmental cues that may seem invisible, impact consumption. Instead of just paying attention to hunger cues, the participants were influenced by external factors (Wansink, 2006).

Table 1

Treatment Group Participants' Total Consumption of Each Food Item

Table ^a	Subject #	Condition ^b	Soup ^c	Rolls ^d	Pasta ^c	Cookies ^d
T1	1	1	2	2	7 ½	1
	2	1	12	2	16	1
	3	1	3	2	4	1
	4	1	3	2	4	1
	5	1	12	2	16	1
	6	1	12	2	16	3
	7	1	12	2	16	3
	8	1	10	2	12	1
T2	1	1	2	1	6	1
	2	1	6	2	8	1
	3	1	2	2	8	2
	4	1	5.5	1	8	1
	5	1	4	2	8	2
	6	1	6	3	8	1
	7	1	2	1	4	1
	8	1				
T3	1	1	2	2	2	1
	2	1	2	2	8	1
	3	1	3.4	1	6	1
	4	1	6	1	8	2
	5	1	3.4	2	8	1
	6	1	0	2	8	1
	7	1	5	2	8	1
	8	1	2	1	8	1

^a Table = Table Number participant was seated^b Condition = Condition 1 = Treatment Group^c Soup and Pasta = Recorded in Ounces^d Rolls and Cookies = Recorded in Number of Items

Table 2

Control Group Participants' Total Consumption of Each Food Item

Table ^a	Subject #	Condition ^b	Soup ^c	Rolls ^d	Pasta ^c	Cookies
T4	1	2	6	1	7	1
	2	2	6	1	8	1
	3	2	4	1	7	0
	4	2	0	1	8	1
	5	2	4	1	8	2
	6	2	0	1	4	1/4
	7	2	4	1	8	1/8
	8	2	2	1	8	1
T5	1	2	5.5	1	8	1
	2	2	5.5	1	6	1
	3	2	3	1	7	1
	4	2	6	1	8	1
	5	2	6	1	8	1
	6	2	3	1	8	1
	7	2	3	1	4	1
	8	2	5.5	1	4	1
T6	1	2				
	2	2	3	1	5.4	1/8
	3	2	0	1	8	1
	4	2	3	1	6	1
	5	2	6	1	8	0
	6	2	3	1/4	8	0
	7	2	3	1	6	1
	8	2	3	1	5.4	0

^a Table = Table Number participant was seated^b Condition = Condition 2 = Control Group^c Soup and Pasta = Recorded in Ounces^d Rolls and Cookies = Recorded in Number of Items

Table 3

Means and T-test Results for Consumption of Treatment and Control Groups

	Rolls	Cookies	Soup	Pasta
Average ^a	0.97	0.76	3.67	6.86
Average ^b	1.78	1.30	5.1	8.67
T-test	0.00000.1	0.008	0.09	0.04

^a Average = Average Ounces of Soup and Pasta and Number of Cookies and Rolls Consumed by the Treatment Group

^b Average = Average Ounces of Soup and Pasta and Number of Cookies and Rolls Consumed by the Control Group

Questionnaire Results

The participants were asked in the questionnaire to estimate how many servings of each food item they recalled consuming. Table 4 and Table 5 describe the amount of ounces of soup and pasta and the amount of rolls and cookies that each subject estimated that they consumed compared to what they actually consumed.

The participants did not always accurately estimate the amount of servings they had consumed of each food item. This is consistent with previous research that claims that consumers have difficulty judging the correct portions of food (Ledikwe, Ello-Martin, and Rolls, 2005). When estimating soup consumption, 16 (70%) of the participants in the treatment group and 19 (83%) of the participants in the control group did not estimate accurately. Altogether, 35(76%) people misjudged their consumption of soup. Pasta was not estimated correctly by nine (39%) people in the treatment group and 15 (65%) people in the control group. Twenty-four (52%) out of all 46 participants estimated an incorrect amount of ounces of pasta. These results are in agreement with past research that recognizes the difficulty consumers have with determining portions of food that have no defined shape (Ledikwe, Ello-Martin, and Rolls, 2005).

Participants were more successful in estimating food items that had defined shapes. Fifteen (65%) participants in the treatment group and 21 (91%) participants in the control group accurately estimated number of rolls consumed. Therefore, 36 (78%) of the total participants involved estimated the correct number of rolls. Results for number of cookie estimation were similar. Twenty-one (91%) participants in the treatment group and 19 (83%) participants in the control group accurately estimated the amount of cookies they had consumed. Forty (87%) out of 46 people were aware of the number of cookies they had consumed. A higher percentage of participants were successful with estimating number of rolls and cookies, foods with defined shapes. It appears to be easier for people to lose track of ounces consumed compared to number of items consumed.

Table 4
*Estimated and Actual Number of Servings Consumed by Participants
 in the Treatment Group*

	Participant Estimated Serving of Food				Actual Serving of Food			
	Soup ^a	Rolls ^b	Pasta ^a	Cookies ^b	Soup ^a	Rolls ^b	Pasta ^a	Cookies ^b
Table 1								
Subject1	3	3	8	1	2	2	7 ½	1
Subject2	12	3	16	1	12	2	16	1
Subject3	1	2	6	1	3	2	4	1
Subject4	6	1	8	¾	3	2	4	1
Subject5	12	3	16	1	12	2	16	1
Subject6	12	1	16	3	12	2	16	3
Subject7	12	3	16	3	12	2	16	3
Subject8	12	3	16	1	10	2	12	1
Table 2								
Subject1	6	1	8	1	2	1	6	1
Subject2	6	2	10	1	6	2	8	1
Subject3	3	2	8	2	2	2	8	2
Subject4	6	1	8	1	5.5	1	8	1
Subject5	3	2	8	2	4	2	8	2
Subject6	6	3	8	1	6	3	8	1
Subject7	3	1	6	1	2	1	4	1
Table 3								
Subject1	0	2	10	1	2	2	2	1
Subject2	3	2	8	1	2	2	8	1
Subject3	4	1	7	1	3.4	1	6	1
Subject4	6	2	8	3	6	1	8	2
Subject5	4	2	8	1	3.4	2	8	1
Subject6	6	2	8	1	0	2	8	1
Subject7	6	2	8	1	5	2	8	1
Subject8	4	1	8	1	2	1	8	1

^a Soup and Pasta = Recorded in Ounces

^b Rolls and Cookies = Recorded in Number of Items

Table 5
*Estimated and Actual Number of Servings Consumed by Participants
 in the Control Group*

	Participant Estimated Serving of Food				Actual Serving of Food			
	Soup ^a	Rolls ^b	Pasta ^a	Cookies ^b	Soup ^a	Rolls ^b	Pasta ^a	Cookies ^b
Table 4								
Subject1	5	1	8	1	6	1	7	1
Subject2	6	1	8	1	6	1	8	1
Subject3	0	0	8	0	4	1	7	0
Subject4	5.5	1	8	1	0	1	8	1
Subject5	5	1	7.5	2	4	1	8	2
Subject6	2	1	6	1	0	1	4	1/4
Subject7	4	1	8	1	4	1	8	1/8
Subject8	5.5	1	8	1	2	1	8	1
Table 5								
Subject1	7	1	13	1	5.5	1	8	1
Subject2	6	1	11	1	5.5	1	6	1
Subject3	3	1	3	1	3	1	7	1
Subject4	8	1	8	1	6	1	8	1
Subject5	8	1	8	1	6	1	8	1
Subject6	8	1	12	2	3	1	8	1
Subject7	1	1	6.5	1	3	1	4	1
Subject8	4	1	12	1	5.5	1	4	1
Table 6								
Subject2	3	1	6	1	3	1	5.4	1/8
Subject3	3.5	1	7.8	1	0	1	8	1
Subject4	6	1	4	1	3	1	6	1
Subject5	3.4	1	8	0	6	1	8	0
Subject6	4	3	8	0	3	1/4	8	0
Subject7	4	1	7	1	3	1	6	1
Subject8	4	1	8	0	3	1	5.4	0

^a Soup and Pasta = Recorded in Ounces

^b Rolls and Cookies = Recorded in Number of Items

Comments

The comments made by the first subject after an offer for refills was analyzed in order to determine whether or not the comments seemed to influence other participants at their table. Subject 2 from Table 1 commented, "Yeah, I'll take another plate," after a pasta refill was suggested. Subject 2 had one refill, and 4 out of the 7 other participants had one refill of pasta. Subject 5 at Table 1 said, "I would love another," after the suggestion was made to have another roll. Subject 5 ate another roll, and 7 out of the 7 other participants had one more roll. Subject 7 at Table 1 commented, "Yes, cookies," after a cookie refill was mentioned. Subject 7 had two more cookies, and Subject 6 also had two more cookies. Subject 6 at Table 1 said, "Yes, please," to the waiter who offered a soup refill. Subject 6 had another serving of soup, and 4 out of the 7 other participants had another serving of soup. Subject 2 from Table 1 said, "Yes, please," to a water or iced tea refill. Seven out of the 7 other participants also had one more serving of water or iced tea.

Subject 5 from Table 2 was the first to respond to refill offers for water or iced tea and cookies. They responded, "Can I have more water?" to the beverage offer and, "Yes," to the cookie offer. Subject 5 had 3 water

refills. Subject 4 had 4 water or iced tea refills. Subject 1, 2, and 3 had one water or iced tea refill. Subject 6 had 2 water or iced tea refills. Therefore, 5 out of the other 6 participants had water or iced tea refills. Subject 5 had one additional cookie, but subject 3 was the only other participant to have another cookie. All of the participants at Table 2 said, "No," to refills on soup. Subject 6 from Table 2 responded, "Yes, can I have another roll?" when the refill for rolls was offered. Subject 6 had 2 more rolls. Subject 5 and Subject 3 from Table 2 responded, "Yes," to the suggested refill for rolls and had one more roll. Subject 2 was the other participant that followed the lead of the other 3 participants and had an additional roll.

Subject 1 from Table 3 was the first to respond to the offer for a water or iced tea refill. This participant said, "I'll have some more water." Subject 1 had 2 refills, and 7 out of the 7 other participants had one additional serving of water or iced tea. Subject 2 from Table 3 responded, "Can I have another roll please?" when more rolls were presented. Subject 3 and 4 out of the 7 other participants had an additional roll. Subject 4 from Table 3 was the first to comment on receiving more cookies. They said, "Do you have any more cookies?" Subject 4 had

one more cookie, but no other participants had additional cookies.

Out of the 11 examples provided, 10 of the instances involved one or more other people at the table following the lead of the person that first commented regarding refills. The participants that followed the lead of the first person to respond to the refill offer were behaving as expected. Past research shows that it is typical for people to mimic the eating habits of their neighbors (Herman, Polivy, and Roth, 2003).

Perceived Wait staff influence

Twenty-two out of the 46 participants believed that the wait staff influenced how much they ate. Eleven out of the 22 were from the treatment group, tables 1, 2, and 3. The other 11 that thought the wait staff influenced their consumption were from the control group, tables 4, 5, and 6. Since the control group did have wait staff suggest drink refills, the participants may have felt influenced by the waiters and waitresses to have more beverages, and they answered this question accordingly.

Summary

The results of this study indicate that consumption can be influenced by wait staff suggestively selling. The participants in the treatment group consumed significantly

more rolls, cookies, and pasta than the participants in the control group. Since some consumers were unable to accurately estimate their consumption, it shows that environmental influences, especially suggestive selling by wait staff in a restaurant setting, can cause consumers to lose track of the amount of food consumed. Also, people sharing a table may influence each other's refill decisions. The same amount of participants from the treatment group and control group believed that the wait staff influenced how much they ate, even though the participants in the treatment group consumed significantly more rolls, cookies and pasta than the participants in the control group.

Chapter 5

SUMMARY, CONCLUSION, IMPLICATIONS

Summary

The purpose of this study was to determine the effect that suggestive selling by the wait staff has on the amount of food consumed. Data were collected from a sample of 46 participants, which included men and women from a University in the Midwest. The consumption of the treatment group was compared to the consumption of the control group. The treatment group had wait staff that was suggestively selling all of the food items. The control group only offered refills for water or unsweetened iced tea, not the other food items. The wait staff was responsible for recording number of refills given to the participants as well as the first comment made after the refill offer was made. An 8-item questionnaire was completed at the conclusion of the meal. The age and gender of the participants were recorded. Participants were also able to estimate how much they consumed during the meal, and they indicated whether or not they believed their consumption was influenced by the wait staff.

Conclusion

The treatment group consumed a significantly greater amount of rolls, pasta, and cookies compared to the control

group. The consumption of soup, however, was not significantly greater in the treatment group. The waiters and waitresses that had been offering refills for the food items were successful for most food items in influencing the consumers to agree to accept more refills. The impact of a simple suggestion was shown to persuade the consumers to consume more food, even though 12 out of the 23 participants in the treatment group did not believe that the wait staff had influenced how much food they consumed. The unawareness that the participants experienced regarding external influences is consistent with prior results from other research. People often believe they are responding to their hunger cues when in actuality they are unknowingly responding to the influences of their surroundings (Wansink, 2006).

There may not have been a significant difference between the ounces of soup consumed between the treatment and control group for a couple of reasons. The participants may not have found the soup to be as appealing as the other food items. The soup was also served after the rolls and before the pasta, the main entrée. People may have not been as hungry since they had eaten rolls, and they may have been cautious to not overeat before the

entrée was served. Therefore, they were less likely to accept refill offers.

The other components of the research study turned out as expected. The participants were not always able to accurately estimate the amount of food they had consumed, especially when the food had no defined shape. Also, the participants were influenced by others at their table. Ten out of the 11 times a person commented on refills, one or more people at each table mimicked their response.

Limitations

Since participants were able to obtain a refill of food or beverages without any additional cost, this may have enabled them to be more willing to accept suggestive selling. Customers in a restaurant that have to pay for the refills may be more hesitant.

The number of participants is a limitation. A larger sample enables further proof to test that a hypothesis is correct in a research study. The number of participants for this study depended on the amount of people that were willing to volunteer to come to the dinner.

The appetite of the participants is a variable that could not be controlled. If certain people typically have a larger appetite, they may have been more likely to accept more refills and consume more food. On the other hand,

participants with a smaller appetite may have not asked for another refill simply because they do not eat large portions. The food intake of each participant prior to the meal is a factor that could also be contributing to their consumption. A large amount of food consumed throughout the day of the dinner may have resulted in a reduced amount of food intake during the meal. The opposite is true if a small amount of food was consumed throughout the day of the study.

Food preference may have encouraged an over consumption or under consumption of the food items offered. If the participants found the food appealing, they may have been more likely to accept refills from the wait staff. If the rolls, soup, pasta, and cookies were not favored by certain participants, refills may have been denied based solely on preference.

Implications for Dietitians

Dietitians can make consumers aware of the environmental cues that can be affecting their dietary intake, especially in a restaurant setting. If a client often goes to a type of restaurant that serves food by the wait staff, they can be better prepared to face the decisions presented by the waiters and waitresses. If the consumer knows to consider whether or not they are still

hungry when asked for a refill, they may make wiser dietary choices. Over consumption may be prevented if clients are educated.

Implications for Consumers

With the increased awareness of the impact of these external factors, consumers can make more responsible choices while dining out. With the growing number of Americans dining out, this knowledge could help in preventing the rise of obesity. College students can especially benefit from the information this study provides since that population is especially at risk for gaining weight.

Implications for the Restaurant Industry

This study provides proof for the restaurant industry that suggestive selling is effective. If waiters and waitresses make suggestions for certain food items or persuade customers to take additional portions, this study shows that they are likely to accept the recommendations. If restaurant managers want to entice their customers to purchase more food, training the wait staff to suggestively sell to their customers may be beneficial.

Further Research

Further research is needed to explore the effect of external cues on consumption, especially related to

suggestive selling by wait staff. Separating the treatment group from the control group to avoid suspicion of the purpose of the study may be helpful. Further research is also needed to gain a better understanding of the influence of comments from other people at the table on consumption.

If similar studies prove that suggestive selling by wait staff is effective, the restaurant industry can take advantage of this theory. Waiters and waitresses can be trained to suggestively sell so that their customers will be more likely to order more food items. Therefore, restaurants may increase profit.

Further research to understand the impact that wait staff has on consumption will benefit dietitians and consumers. If additional research is in agreement with the results of this study, dietitians will have proof that suggestive selling by wait staff can impact the dietary choices of their clients. Dietitians can then warn their clients about the challenges they could face and how to avoid temptations. The awareness of environmental influences can give consumers more of an insight into causes for over consumption so that better choices can be made.

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Appendix A- Informed Consent

CONSENT TO PARTICIPATE IN RESEARCH

The Effect that Suggestive Selling by the Wait Staff has on Consumption

You are invited to participate in a research study conducted by Gwen Zumwalt and Dr. Karla Kennedy-Hagan, from Family and Consumer Sciences at Eastern Illinois University. Your participation in this study is entirely voluntary. Please ask questions about anything you do not understand, before deciding whether or not to participate.

You have been asked to participate in this study because you fit the criteria. People with diabetes or any disease related to total quality consumption are excluded from the study.

• PURPOSE OF THE STUDY

This study is designed to examine humans' consumption of food. This study is related to types of research that have looked at the effect of portion sizes and the size of plates and bowls on consumption.

• PROCEDURES

If you volunteer to participate in this study, you will be asked to:

The subjects will enjoy a free meal at Klehm Hall room 1418 and complete a questionnaire at the conclusion of the meal. The questionnaire will take about 5 minutes to complete. The overall length of participation will be about 45 minutes.

• POTENTIAL RISKS AND DISCOMFORTS

Since this study involves food, the subjects are at minimal risk of being exposed to a food allergy. This is unlikely because we have taken the precaution to ask the subjects about known food allergies ahead of time. There is a potential risk of subjects choking since food is involved, but this is very unlikely. If any problems such as these arise, the subject will be taken to the EIU Health Services Center.

• POTENTIAL BENEFITS TO SUBJECTS AND/OR TO SOCIETY

This study will benefit college students at large as well as the subjects by providing an awareness of over consumption particularly in a restaurant setting.

• INCENTIVES FOR PARTICIPATION (*Optional*)

The incentive to participate in this study is a free meal.

• CONFIDENTIALITY

Any information that is obtained in connection with this study and that can be identified with you will remain confidential and will be disclosed only with your permission or as required by law.

Confidentiality will be maintained by means of assigning each participant a number, and they will be identified by that number and not their name. The data will be stored in a locked file cabinet to ensure security. The only people that will have access to the data will be the investigators.

• PARTICIPATION AND WITHDRAWAL

Participation in this research study is voluntary and not a requirement or a condition for being the recipient of benefits or services from Eastern Illinois University or any other organization sponsoring the research project. If you volunteer to be in this study, you may withdraw at any time without consequences of any kind or loss of benefits or services to which you are otherwise entitled.

You may also refuse to answer any questions you do not want to answer. There is no penalty if you withdraw from the study and you will not lose any benefits to which you are otherwise entitled.

• IDENTIFICATION OF INVESTIGATORS

If you have any questions or concerns about this research, please contact

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• RIGHTS OF RESEARCH SUBJECTS

If you have any questions or concerns about the treatment of human participants in this study, you may call or write:

Institutional Review Board

Eastern Illinois University

600 Lincoln Ave.

Charleston, IL 61920

Telephone: (217) 581-8576

E-mail: eiuirb@www.eiu.edu

You will be given the opportunity to discuss any questions about your rights as a research subject with a member of the IRB. The IRB is an independent committee composed of members of the University community, as well as lay members of the community not connected with EIU. The IRB has reviewed and approved this study.

I voluntarily agree to participate in this study. I understand that I am free to withdraw my consent and discontinue my participation at any time. I have been given a copy of this form.

Printed Name of Participant

Appendix B- Questionnaire
Restaurant Customer Questionnaire

Please take a few minutes to answer the following questions related to your dining experience. Thank you for your participation.

1. What is your age? _____
2. Are you _____ female or _____ male?
3. How much soup do you think you consumed? _____ ounces
4. How many rolls do you think you consumed? _____ rolls
5. How much pasta do you think you consumed? _____ ounces
6. How much of your beverage do you think you consumed? _____ ounces
7. How many cookies do you think you consumed? _____ cookies
8. Do you believe that the wait staff influenced how much you ate?
Yes _____ No _____

Thank you!!!

Appendix C- Wait Staff Record Sheet

Table #1**Subject #1**

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject # 2

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject # 3

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject # 4

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject #5

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject #6

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject #7

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____

Subject #8

Soup _____

Drinks _____

Rolls _____

Pasta _____

Cookies _____