

PERCEIVED FACTORS THAT AFFECT FRESHMAN COLLEGE STUDENTS WHEN
CHOOSING FOODS FROM UNIVERSITY DINING FACILITIES

A THESIS

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BRITTANY S. WONNELL

DR. JANE ELLERY - ADVISOR

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TABLE OF CONTENTS

| | |
|---|----|
| CHAPTER ONE: INTRODUCTION..... | 1 |
| Introduction..... | 1 |
| Statement of Problem..... | 2 |
| Research Questions..... | 2 |
| Delimitations..... | 2 |
| Definition of Terms..... | 3 |
| Assumptions..... | 4 |
| Importance of Study..... | 5 |
| CHAPTER TWO: REVIEW OF EXISTING LITERATURE | 6 |
| Association Between Rapid Weight Increase and Food Selection in College Students..... | 6 |
| Factors Affecting College Student Food Choice | 8 |
| Internal Factors Affecting College Student Food Choice..... | 8 |
| External Factors Affecting College Student Food Choice..... | 11 |
| Food Provided by Dining Facilities On College Campuses | 13 |
| CHAPTER THREE: RESEARCH METHODOLOGY | 17 |
| Introduction..... | 17 |
| Population and Sample Description | 17 |
| Instrumentation..... | 18 |
| Data Collection | 19 |
| Data Analysis..... | 20 |
| Generalization of Results | 21 |
| CHAPTER FOUR: RESULTS | 23 |
| Internal Factors..... | 26 |

| | |
|---|-----------|
| Knowledge About Choosing Healthy Foods | 26 |
| Familiarity With Food Choices | 28 |
| Students' Ability to Manage Time to Enable Pursued Food Choices..... | 28 |
| External Factors..... | 29 |
| Students' School Schedules and Extra Curricular Responsibilities | 30 |
| Crowdedness and Lengthy Lines at the Dining Facility | 31 |
| Food Availability at the Dining Facilities..... | 32 |
| People the Student Interacted with Before and During Their Freshman Year of College | 34 |
| Summary..... | 36 |
| CHAPTER FIVE: DISCUSSION..... | 39 |
| Limitations of the Study | 46 |
| Implication of Research..... | 47 |
| Summary of Implications..... | 50 |
| Recommendations for Future Research | 51 |
| REFERENCES | 53 |

LIST OF APPENDICES

Appendix A: Recruitment Tool 57
Appendix B: Information Guide and Consent Form 58
Appendix C: Interview Guide..... 60
Appendix D: Summary of Themes Discussed in Results 63
Appendix E: Mind Map of Factors, Themes, and Subthemes 74

CHAPTER ONE: INTRODUCTION

Introduction

Late-adolescents experience significant changes when they leave their homes and live independently while pursuing a degree at colleges and universities. It is during this transitional period, that their overall health can be influenced by many factors, including their dietary choices and nutritional intake (Lacaille, Dauner, Krambeer, & Pedersen, 2011). These health factors can consequently affect the rest of their lives. Studies show that students in their twenties in college have greater and more rapid weight gain than any other age group (Greaney et al., 2009). Some initial analyses as to why college students are gaining large amounts of weight in such short amounts of time have been conducted. College students have been shown to have energy-dense diets that include foods high in saturated fat, sugar, and sodium (Deliens, Clarys, De Bourdeaudhuij, & Deforche, 2014; Holm-Denoma, Joiner, Vohs, & Heatherton, 2008).

Research on the topic of why students are not making healthy food choices and gaining weight during their years in college has identified a variety of factors. These are categorized into two groups: internal and external factors. Internal factors such as taste enticement and the lack of discipline has been shown to contribute to college student weight gain. College students also experience external factors. This can include environmental factors such as where the students reside and the degree to which they rely on university dining facilities to obtain their food (Greaney et al., 2009). This study is designed to investigate the internal and external factors that

influence college freshman students' food choices while eating at a university dining facility and attempts to further understand how students select their food, and the degree to which their selection is based on the internal and external factors observed.

Statement of Problem

The focus of this study is to determine the perceived internal and external factors that affect college students when making food choices at university dining facilities during their freshman year.

Research Questions

1. What are the internal factors that affect students when making food selections at university dining facilities during their freshman year?
2. What are the external factors that affect students when making food selections at university dining facilities during their freshman year?

Delimitations

For the purposes of this study, the following delimitations have been identified and should be considered when considering the results of this study. These include:

1. The results of this study are specific to the observations of freshman students at a mid-sized midwestern university and may not be indicative of freshman students at other sized universities.
2. The results of this study are specific to on-campus residents using a specific dining facility during their freshman year to obtain the majority of their foods and are not indicative of non-resident students who do not use the dining facilities to obtain their food or students who use other dining facilities on campus.

3. The participants consisted of traditional freshman students, ages 18-20, who had participated in having a specific meal plan to obtain food at a university's dining facility for at least 1 month and no more than 3 months.
4. Interviews were conducted in a 40-minute session. This may have placed a time restraint on the amount of information able to be obtained.
5. Students' answers were based on personal perceived factors through self-reporting, and should not be indicative of every freshman students' answers at the university.

Definition of Terms

For the purpose of this study, the following terms and phrases have been defined. These include:

1. Body Mass Index (BMI)- An inexpensive and easy-to-perform method of screening for weight categories that may lead to health problems (Prevention, 2011).
2. Nutrient-Dense Diet- A diet including foods with relatively lower calorie, and higher nutrient content, when compared to the overall weight of the food (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010).
3. Internal factors- Factors that are developed within the mind and self of an individual (i.e. knowledge, attitudes, beliefs, core values, life adaptations skills, self-efficacy) (Cole, Holtgrave, & Ríos, n.d.)
4. Freshman 15- The "freshman-15" is a term used in reference to the common occurrence for freshmen in college to gain 15 pounds (Holm-Denoma et al., 2008).
5. External factor- Factors including the physical, demographic, and economical environment that can affect the growth of an individual (i.e. social support, media, environmental stressors) (Cole et al., n.d.).

6. Meal Plan- A food plan that allows students to choose the number of meals per week they are allotted at the dining facilities, which they choose to meet their personal needs. Also called “Value Plans” at Ball State University (Ball State University, 2014).
7. Traditional Freshman Student- One who enrolls in college immediately after graduation from high school, pursues studies on a continuous full-time basis at least during the fall and spring semesters (January, 2004).
8. University Dining Facility- A convenient location on-campus where students may go and choose various foods to consume during specific hours of their day.
9. Self-Report Data- Individuals’ personal belief of what they think to be true, or what they think the audience wants to hear (Leedy, Paula D. Ormrod, 2013b).

Assumptions

For the purposes of this study, the following assumptions have been made:

1. There is an assumption that freshman students will have sufficient experience in making food selections at university dining facilities. They will have had two months of experience.
2. There is an assumption that the specific controls used when selecting students will give a good generalization of the average student population.
3. There is an assumption that the student participants will understand the difference between internal and external factors.
4. There is an assumption that students will respond truthfully to the questions asked throughout the interview.

5. There is an assumption the freshman students interviewed will have a similar levels of knowledge about food and nutrition as other freshman students on the college campus.

Importance of Study

Low intakes of healthful foods and high intakes of food containing elevated amounts of saturated fats, sugar, and sodium cause weight gain. This weight gain causes increased risks of chronic diseases later in life affecting the medical care cost of both individuals and the country (Lacaille et al., 2011).

This study will be conducted to present current factors affecting students' perception of their food choices in their first year at college while living on-campus. Research shows that low intakes of healthful foods and high intakes of food containing elevated amounts of saturated fats, sugar, and sodium cause weight gain. This weight gain causes increased risks of chronic diseases later in life, which consequently affects the medical care costs of individuals and the country. This study will present information for university health educators to effectively teach on health and wellness and provide holistic health and wellness services based on college students' perception.

This study will also present information to university dining services about students' perceptions of how they choose foods at a dining facility. This information will be helpful for similar sized universities who seek to understand and overcome the obstacles dining facilities and on-campus food stores have in assisting students to be able to choose healthful food options while living in residential housing.

CHAPTER TWO: REVIEW OF EXISTING LITERATURE

Association Between Rapid Weight Increase and Food Selection in College Students

The 2009-2010 National Health and Nutrition Examination Survey revealed that greater than one-third of American adults are obese, while 17% of children and adolescents' ages 2-19 years old are obese (Ogden, Carroll, Kit, & Flegal, 2012). Obesity is defined today in terms of BMI and is still commonly used to classify weight and identify risk factors for diabetes in individuals (Mokdad et al., 2001). A survey of 96,011 undergraduate students at 153 post-secondary schools conducted by the American College Health Association's National College Assessment II using BMI measures revealed that 61% of students were within a normal BMI range for body weight, while 33.7% were considered to be in the overweight or obese range (American College Health Association, 2013).

One significant contributing factor to this age-related obesity concern is the current trends of college students' diets. Many college students' diets include too much sodium, saturated and trans-fats, cholesterol, and added sugars. Having these types of unhealthy diets makes it difficult for this age group to consume the dietary nutrients their bodies need from their food (U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010). Having a diet high in energy and low in nutrients can cause "diet-related diseases" such as cardiovascular disease, cancer, and stroke, which are the top three leading causes of death in Americans today (American Cancer Society, 2012).

As students transition from living at home to moving to college, they are confronted with many challenges in their lives, including making food choices independently, which can subsequently affect the way they choose their food for the rest of their lives (Deliens et al., 2014). One study revealed the relationship between food selection and age by examining what individuals ate based on food group categories throughout their different lifespans. The results of this study revealed that individuals consumed a greater variety of foods such as fruits and fruit juices, varied meats, desserts, candy and milk in their childhood than they did in their adulthood (Demory-Luce et al., 2004). Between age and selecting healthier foods there is a positive correlation in older individuals choosing less healthy food options.

During the transition from childhood to early-adulthood, behavior changes occur and more responsibility and autonomy is placed on individuals (Deliens et al., 2014). With responsibility comes choices, and college students food choices often includes foods high in sodium and sugar, and low in fruits and vegetables (Deliens et al., 2014; Holm-Denoma et al., 2008). The National College Assessment II survey revealed that undergraduate college students rated their diet as being poor or fair. It also showed 60% of students consuming just 1-2 fruits and vegetables per day, and only 5.6% consuming the recommended 5 or more per day (American College Health Association, 2013). This provides insight as to why college students may gain weight at a faster rate than any other age group. At the same time they are increasing their risks for making poorer food choices later in their life. Studies evaluating when college students gain the most weight reveal that weight gain predominately occurs during the end of students' senior year of high school through October of their freshman year in college (Holm-Denoma et al., 2008).

Many factors contribute to the food choices students make when leaving high school and transitioning into a collegiate environment by themselves. These factors can ultimately lead to weight gain during their college years, causing an increase in disease risk. Internal factors including eating behaviors and nutritional knowledge, as well as external factors such as environmental influences may be some of the perceived factors that affect these students. For example, one study revealed students skip breakfast more often than any other meal, which is an unhealthy practice. The lack of knowledge about the importance of eating breakfast may be an internal factor causing students to skip breakfast (Silliman, Rodas-fortier, & Neyman, 2004). The college campus in general is an environmental factor, which influences students food choices (Wallace, Buckworth, Kirby, & Sherman, 2000). It is suggested that if college students understand these various internal and external factors, which are known to affect food choice, they will be able to make the appropriate changes necessary to consume a healthier, nutrient-dense diet. These changes then may continue throughout the rest of their lives, which in turn may help decrease their risk for obesity and other chronic diseases (Silliman et al., 2004).

Factors Affecting College Student Food Choice

Internal Factors Affecting College Student Food Choice

Factors that are developed from within the mind and self of a college student are shown to affect the student's personal food choice. These internal factors in turn impact the overall diet (Brown, Dresen, & Eggett, 2005; Kolodinsky, Harvey-Berino, Berlin, Johnson, & Reynolds, 2007; Racette, Deusinger, Strube, Highstein, & Deusinger, 2010; U.S. Department of Agriculture & U.S. Department of Health and Human Services, 2010). For example, students' personal taste often determines the type of foods they choose to eat (Childers, Haley, & Jahns, 2011; Deliens et al., 2014). Taste is an important determinant of not just eating unhealthy foods, but also eating

healthy foods. One study reported a college student stating that she ate healthy foods, such as fruit, because it simply tasted good (Deliens et al., 2014). In addition to taste, the quality of the food is a factor of food choice. When students feel their food is poorly flavored and of suboptimal quality they will choose a different food, generally being a more unhealthy choice (Childers et al., 2011).

College students' self-discipline and motivation to choose healthy food is also an internal factor affecting their diets (Childers et al., 2011; Furia, Lee, Strother, & Huang, 2009). In a study examining second semester freshman college students, the lack of being truly hungry and being able to determine the difference between hunger and boredom, loneliness and unhappiness, was key to students' not over-consuming foods. This study also acknowledged the students' ability to say no when exposed to unhealthy food options (Childers et al., 2011). Self-efficacy, interest in the subject, and social reward are other internal factors consistently motivating college students as well as the association between self-discipline and autonomy (Furia et al., 2009).

Some universities require students to enroll in health education classes, which can expose them to food and nutrition education. Some universities may even require students to take a food and nutrition course to assist in helping them understand the factors that can be present when choosing foods while they are in school. Colleges in which these nutrition classes are mandatory, may have more students obtaining nutrition-related knowledge allowing for healthier food choices to be made (Ha & Caine-Bish, 2009; Matvienko, Lewis, & Schafer, 2001). Research suggests that college students are aware of the popular term, "freshman-15," but more in terms of what it is, rather than how it occurs (Holm-Denoma et al., 2008). Often students feel pressure to maintain body weight and not increase the possibility of this "freshman-15" idea (Childers et al., 2011; Holm-Denoma et al., 2008). Work developed by Childers et. al. suggested that many

students do have the knowledge needed to choose healthier foods, and they are aware that these foods are better for their overall health. However, students who are educated about nutrition do not always make healthy food choices either (Childers et al., 2011; Kolodinsky et al., 2007). Though few studies show a relationship between nutritional knowledge and healthful food consumption, research still recommends that freshman students need to have knowledge about food and nutrition to make healthy food selections, and that schools should be responsible for delivering seminars that teach students about this topic (Childers et al., 2011; Kolodinsky et al., 2007). Teaching students the importance of food selection may help them to better understand, and even offset, many of the contributing factors associated with choosing unhealthy foods and early college weight gain (Holm-Denoma et al., 2008).

When transitioning from high school to college, class schedules and workloads often result in increased levels of stress that students must learn to manage. Stress as well as anxiety, either from internal or external factors, can cause students to engage in unhealthy eating and overconsumption of foods (Childers et al., 2011; Deliens et al., 2014). There are other emotional eating patterns that influence students' consumption of unhealthy foods during their college years. These include students consuming "comfort foods" to provide relief from being "lonely" and away from home (Childers et al., 2011). How college students were raised and the types of foods they ate while living at home also affects the food choices they make while in college. Studies have shown that parental and family factors are directly associated with the way students choose their foods (Childers et al., 2011; Holm-Denoma et al., 2008). Work done by Holm et. al. measured the affects families have on students as they transition from high school to college. This study showed that the satisfaction students' parents had towards them determined which food choices they made. Therefore, parents being extremely critical or how independent students

were from their families influenced them to eat differently than students who had differing relationships with their parents (Holm-Denoma et al., 2008). It is important to understand these various internal factors affecting college students' food choices. Family experiences, emotions, and taste preferences all influence individuals' choices. Various educational efforts should be established to address the internal factors students' experience to assist them in understanding how to make the best appropriate food choices (Furia et al., 2009).

External Factors Affecting College Student Food Choice

In addition to internal factors, a variety of external factors affect college students' food choices while living on campus during their freshman year. One of these factors is the students' social environment. Individuals are more likely to consume foods based on their social environment, rather than responding to feelings of hunger or satiety (Greaney et al., 2009). Research suggests that the influence of others causes students to overeat foods they may not otherwise have chosen, and then later regret eating those foods (Herman, Roth, & Polivy, 2003). Studies suggest that when other people are present, individuals' food consumption can be enabled or inhibited differently than if they were eating alone (Greaney et al., 2009; Herman et al., 2003). This acknowledgment suggests that freshman students' social environment may have a direct impact on when students decide to eat and the options which they choose to consume (Herman et al., 2003). A qualitative study completed by Lacaille et al. observed the opinions of college students' regarding the social determinants of food choice. This study analyzed the discussion of focus groups, which consisted of male and female students at various college levels to understand the social and environmental influences that affect eating behaviors (Lacaille et al., 2011). One interviewee shared there was an affect stating, "It helps if you have a group of friends who are going to eat the same things as you do," when asked about managing weight and

choosing healthier options (Lacaille et al., 2011).

Along with social external factors, college students who use university dining facilities while living on campus to obtain food may also experience issues related to time and access to food due to class schedules and limited operating hours of these dining facilities (Greaney et al., 2009; Lacaille et al., 2011). For example, scheduling has been shown to be a key barrier to students when making food choices. One study revealed that freshman students who obtained food solely from the universities' dining facility experienced more difficulty consuming food on a regular schedule due to the restricted times they were able to purchase food via the dining facility's operating hours (Childers et al., 2011). Students with college classes during lunchtime hours may not have the time to readily access these dining facilities, and as a result may need to purchase their food from vending machines and fast food restaurants to meet their course schedule needs (Lacaille et al., 2011).

The availability and pricing-options of food may also lead to students choosing unhealthy or excessive food options (Greaney et al., 2009; Lacaille et al., 2011; Levitsky, Halbmaier, & Mrdjenovic, 2004). Dining facilities that do not provide healthy food options as part of their meal offering can also be an external barrier for college students (Greaney et al., 2009; Lacaille et al., 2011). Research shows that students sometimes view dining facilities as an external enabler of healthy food choices, and that student are less likely to obtain food from easily accessible, fast food restaurants near campuses if the college dining facilities provide fresh, nutritious, and easily attainable food (Lacaille et al., 2011).

Many universities have set up meal plans for students so that they can more readily obtain their food from the university dining facilities. Indeed, universities often highlight this benefit as a recruiting technique for freshman students (Holm-Denoma et al., 2008). Meal plans

consist of a prepaid number of meals that students may obtain from the dining facilities each week. Prepaid number of meals is when students are able to use their meal plan at the dining facilities at each mealtime. One meal is then taken away from the total number of meals they are allotted within one week. Some universities also offer all-you-can-eat dining. Studies suggest that overwhelming amounts of foods offered at these all-you-can-eat buffet dining facilities makes it easier for students to “overeat” and then gain weight during their freshman year (Holm-Denoma et al., 2008; Levitsky et al., 2004). Students have felt that it is easy to consume a large amount of food during their meal times because food is available and easily attainable while they are eating at these buffet-style dining facilities (Lacaille et al., 2011).

Food Provided by Dining Facilities On College Campuses

Research also suggests that university policy may be a significant external factor when college students make their food choices. Some universities have mandatory policies requiring freshman students to live on campus and use meal plans provided by the campus dining facilities (Kapinos & Yakusheva, 2011). A study done by Kapinos and Yakusheva measuring the relationship between the physical environment of students and weight gain, found that students who lived in the university dorms and ate at the dining facilities gained more weight than individuals who did not live in the dorms (Kapinos & Yakusheva, 2011). Many universities also require students living on-campus to obtain a pre-paid meal plan that can be used at the dining facilities. Research done by Brown et al. showed a university having various pre-paid meal plan options where students had daily access to unrestricted amounts of food at breakfast, lunch, and dinner as well as an additional \$9.80 that could be used at the university’s convenient stores or vending machines per week (Brown et al., 2005). This study found that even though more foods were available, students who had meal plans were offered more nutritious foods and were able to

eat healthier than students who did not partake in the meal plan option. This was because healthy food is perceived as being more expensive or less accessible to them (Brown et al., 2005). There is still research needed to understand whether the option of living on campus versus off campus allow for making better food choices. Studies do suggest that to help decrease weight gain and unhealthful food choices in college freshman, students should have meal plans which can be used at the university's dining facility (Brown et al., 2005).

To date, college and university dining facilities are not bound by federal guidelines regarding the variety or types of food they must serve, however, they are only legally required to address food safety protocols established by the Food Drug and Cosmetic Act (Briggs, 2010). Professional organizations including the American Dietetic Association, School Nutrition Association, and Society for Nutrition Education advocate for the availability of healthy foods in schools, but only in schools serving students from kindergarten through twelfth grade. There are no federal associations regarding post-secondary school food regulations (Briggs, 2010). The National School Lunch Program was also enacted to allow students the ability to eat more nutritious foods at lower costs, but again, this program is only set up for kindergarten through twelfth grade students (Briggs, 2010). Therefore, it is at the universities discretion as to the types of foods they wish to offer their students. The National Association of College and University Food Service is an organization that provides various programs and resources, including benchmarking and best practices for universities to use. However, these are only suggestions and are not mandated by any federal regulation (The National Association of College & University Food Services, 2013). This association also recommends that college campus dining facilities have a registered dietitian on campus to assist students in choosing healthier food options. They show that a registered dietitian can help a university with recipe and nutrition formation

management, counseling students, staff training, and keeping nutrition labeling accurate (The National Association of College & University Food Services, 2013).

Since there are no regulations on the types of foods universities are required to offer at their facilities, a wide array of foods are made available to students. These foods include healthy options as well as unhealthy options (Levitsky et al., 2004). A study done by Peterson et al. revealed that students thought there was a limited availability of healthy foods in their dining facilities, which then caused them to choose the unhealthy food options (Peterson, Duncan, Null, Roth, & Gill, 2010). Other studies have also shown that the cafeteria-style foods, or processed foods, may cause students to gain weight in their college years (Holm-Denoma et al., 2008; Levitsky et al., 2004). Most of the dining facilities do serve different types of fruits and vegetables, which some students do try to consume. Other students do not think much about their nutrition and find it difficult to resist all of the unhealthy food options that are easily available to them (Gavin, 2013).

Some universities are now providing an all-you-can-eat dining display where fresh fruits and vegetables, a variety of meat and ready-to-eat foods are available with little to no preparation needed from the student (Brown et al., 2005). This study stated that dining facilities are the best possible way students can access a variety of healthy foods, but also unhealthy foods (Brown et al., 2005). Some health professionals worry that this type of dining display will encourage overeating among students and pose negative factors associated with unhealthy food choices. Studies have been completed to find ways university dining facilities can contain this overconsumption problem within this type of dining system. One study revealed that when students were shown which foods were more nutritious options, they were more likely to choose the healthier options over the unhealthy options (Herman et al., 2003).

College students gain the most weight in a specific amount of time when compared to any other age group (Holm-Denoma et al., 2008). This weight gain can be directly related to the current diet trends college students have while in school. Most weight is gained in the first year of college, this is why it is important to understand students' transition from living at home to moving to college where choices, including food selection, are to be made independently (Deliens et al., 2014). Many factors are shown to be present when college students make their food choices, and these factors can affect not only their diet, but also their health. Internal factors including personal taste, motivation, knowledge about food and nutrition, the student's class schedule, and what their family's food habits are could affect the way student choose their foods (Childers et al., 2011; Furia et al., 2009). External factors such as the student's social environment, access and availability to food, pricing of food, and dining facilities offered can also affect the food choices students make throughout college (Childers et al., 2011; Greaney et al., 2009; Herman et al., 2003; Levitsky et al., 2004).

Determining the specific factors that affect college students' food choices will ultimately allow university health educators to understand what students experience when choosing foods at a university dining facility. This information may allow them to better understand ways to effectively teach health and wellness based on the student's perceptions. Understanding these factors may also allow university dining facility departments to better understand the student's perception of the types of foods served at the dining facilities and the student's perceptions of how they enable or discourage healthy food choices.

CHAPTER THREE: RESEARCH METHODOLOGY

Introduction

The purpose of this study was to observe the perceived internal and external factors students experience when making their food selections during their freshman year in college. To determine these factors, traditional freshman students who attended the Midwest school of Ball State University for at least two months were interviewed individually using a semi-structured interview guide developed by the researcher of this study. To control sampling measures, inclusion criteria consisted of students who were residents in the university's residential housing, and who obtained their meals from primarily one specific university dining facility, while using a specific 14 meal per week meal plan. These students were analyzed at the end of their first semester through the beginning of their second semester in college. The interviews were audio recorded, and the researcher documented nonverbal expressions as field notes. Audio records were then transcribed and analyzed to observe popular trends and develop conclusions from the students' perceptions of their food choices.

Population and Sample Description

This pilot study used purposive sampling to select 8 traditional male and female Ball State University freshman students. These students were recruited in the months of October through January during their first and second semester of school. Inclusion criteria required the

participants to hold residence in on-campus housing and obtain the majority of their meals from the university's Woodworth dining facility. This dining facility was chosen because of its popularity among students as well as it being the dining facility that serves the greatest amount of students per semester, which was shown using anecdotal data and validated from the university's dining facility's management department. This controlled for the various types of dining facilities provided on this university's campus. To control for various meal plan options, participants included in the study had a 14-meal per week meal plan. This meal plan was chosen because it was shown to be the most popular meal plan for freshman students at the university according to data provided from the university's dining facility's management department.

Participants were recruited by the primary researcher who presented and promoted the research study to freshman students as they were eating at the Woodworth dining facility. This included the researcher asking individual freshman students to fill out a five-question inclusion criteria tool (Appendix A). Once completed, the researcher reviewed the tool to determine if the student met the criteria needed for the study. If the student met the criteria, they were asked further about interest in participating in the study to complete the interview. When the student agreed to participate in the study, the researcher collected the name and contact information from the student to set up a time the interview would be completed. The researcher then scheduled a time with the student when both were available to complete the interview. The day of the interview, before beginning, the researcher read through and reviewed the consent form with the participant and obtained consent from the participant.

Instrumentation

The primary instrumentation included private interviews with freshman college students for data collection in this research study. The interviews were held in a conference room in the

Health and Physical Activity building on the university's campus. The interviews were administered by following a semi-structured interview guide (Appendix C), which was developed by the researchers of this study. Other instrumentation included the information sheet and consent form that was signed by each participant before the interview began (Appendix B). The name and contact information of the student was obtained so that follow-up data analysis validation could be obtained from the participant as needed. An audio recording device and computer-template for the researcher's field notes were also used for this study. The researcher started the recording device at the start of each interview after the participant had been welcomed and seated.

Interview questions were developed using an open-ended structure based on the description of best practices in developing interview guides (Leedy, Paula D. Ormrod, 2013a). The interview guide was tested for the validation of responses by having three-separate freshman students from an unaffiliated university complete the interview. When the participants answered the questions, the researcher read the concluding section (Appendix C, Section 3), and asked the participant if any further information could be provided. After all of the questions were answered, the recording device was stopped, and the participant was thanked for his or her participation in the study.

Data Collection

Each interested participant was scheduled to meet the researcher for an in-depth interview. Participants were questioned during an averaged 30-minute, audio-recorded, interview using a semi-structured interview guide. Specific areas within the interview included probing questions to extract more in-depth information about why they made their food choices and the factors associated with making those choices. Student responses were recorded using an audio

recording device as well as field notes taken by the researcher during the interview. After the interviews were finished, the researcher thanked the student for their participation. All data collected, including the audio records, interview scripts, and interview transcriptions, were kept in a locked cabinet in the researcher's office for the duration of the study. This lock was only attainable to the primary researcher and committee chair and will be disposed after 10 months from the collection date.

Data Analysis

The interviews were then replayed via the audio recording device and transcribed into a paper record. Transcribed interviews were then analyzed using Microsoft Excel to show the popular themes that occurred during each interview to conclude a rationale behind each students' answers to the interview questions. The study researcher also took field notes of non-verbal expressions obtained from the participant during the interview and inserted them inside the theme table as well. After eight interviews were concluded the research observed conclusive themed topics. The interview transcript for three random participants was then provided to him or her to verify that the information they provided was clearly proposed after it was transcribed. The participants were randomly chosen using a simple random sample method in Microsoft Excel. Changes and edits were then made based on the comments each selected student provided for revision. After revisions were made, each participant was given a pseudonym in place of his or her name to ensure confidential as well as show personalization when presenting the results.

Transcribed interviews were analyzed using a spreadsheet method to identify various themes students perceived as factors affecting food choice. This was done using the Primary and Secondary Themes Table (Stockdale, 2002). Content analysis was then used to analyze the data to view matching themes. Themes were viewed as internal and external factors, themes within

each factor, as well as subthemes. The students' answers, which were related, were grouped in categories to find similarities of answers. Subthemes were represented as comments that students made in relation to each theme presented, within both the internal and external factors perceived by the students. Participant statements are included to describe the themes that were identified.

After the themes were observed using the Primary and Secondary Themes Table, the themes suggested in current literature were analyzed to observe any discrepancies of data finding when compared to what students perceived in this study.

It is important to acknowledge that this study represented a small amount of freshman students (n=8). Therefore it is important to continue this type of research for full accuracy on what affects students' food choice during their first year of college. There are also limitations shown on student self-reporting, thus to fully understand all of the affects students perceive, future research will still be needed. Therefore, to make recommendations and bring awareness to high school and freshman students about the factors they may experience during their freshman year when choosing their food, this study's findings must be coupled with previous research describing the current perceived affects college student's experience when choosing their food at the university dining facilities.

Generalization of Results

This study allowed for both internal and external factors to be acknowledged while emerging themes were identified throughout each student's interview. First, the study identified internal factors including the knowledge students had about making healthy food choices, choosing food based on how familiar the student was with the food, and students learning how to personally manage their time. External factors which emerged included freshman students' busy schedules affecting their food choices, the crowdedness of the on campus dining facilities, the

food being available at the dining facilities, and the people in their lives who affected their food choices. These findings were then compared to current research in the area of college students' food choices. Second, recommendations regarding improvements that could help to alleviate these perceived factors that have affected on freshman students' food choices were addressed. This study was designed to qualitatively pilot freshman students to recognize related themes related to their individual food choice.

This study was found to be conclusive when emerging themes were repeatedly commented on throughout each interview. A small number of students (n=8) were interviewed and analyzed. It is important to note that self reporting has its limitations, and advancing this pilot study's themes to quantitative research in similar sized and organized universities will be helpful in better understanding how freshman students choose their foods and what impacts their choices.

CHAPTER FOUR: RESULTS

This chapter contains the analysis of the results and the themes identified throughout the responses that were collected in personal interviews of college freshman students who participated in this study. Additionally, the pertinent inclusion criteria will be discussed briefly.

Eight-college freshman students were recruited and participated in this study. Among the students included six female and two male participants. Students were recruited based on inclusion criteria that were assigned prior to the recruitment process. This criteria included the student being between the ages of 18 and 21 year old, being a traditional college freshman student living in on campus residential housing, and obtaining the majority of their meals from the Woodworth dining facility while having a 14 meal per week meal plan provided by the university. Students were recruited by answering the required responses on the recruitment tool shown in Appendix A and then interviewed to understand their perceived factors that have affected their food choices during their freshman year. The interviews were audio recorded and transcribed by the primary researcher to analyze themes presented in each students' perception. The recruitment process was concluded when sufficient redundancy showed related categorized themes emerging from each transcription of the eight student participants. After the recruitment process and the interviews were completed, three students were randomly selected to review their transcript by the primary researcher via email and phone conversations. These students

agreed that the primary researcher's transcription of their interview were correct in interpretation and had limited revisions.

The purpose of this study was to explore the research questions:

1. What are the internal factors that affect students when making food selections at university dining facilities during their freshman year?
2. What are the external factors that affect students when making food selections at university dining facilities during their freshman year?

This study attempted to answer the two research questions during a 40-minute interview with each student. The student was asked a set of eighteen questions with questions being probed periodically throughout each interview (Appendix C). The first two questions examined how the student perceived their current ability to obtain their allotted 14 meals per week from the dining facilities. Nearly all students agreed that having a specific number of meals available per week affected their food choices in some way. Every student interviewed stated using all 14 meals they were allotted every week and also agreed that this was enough food for them to feel physically satiated. Questions three through five asked the students to describe the internal factors that affected their food choice. These internal factors included the students' knowledge about food and nutrition, their motivation to eat nutritiously, their feelings and considerations when choosing foods at the dining facility, and what they would think about when they chose their foods, including sensory factors. Questions six through thirteen asked the student to describe the external factors that affected their food choice. These questions included probing about their school and extracurricular schedules during their freshman year, the foods available to them on-campus, their typical meal choices, cost, and other external factors that were discovered in previous research. Over half of the students agreed their school schedules and family's habits

affected their food choices when choosing food. Nearly all stated they were able to choose the foods they wanted at the dining facilities, and that those choices were more often than not affected by the cost of the food items. After question thirteen, the students were asked to reflect on the food choices they made before college. This section of questions was established to introduce factors students might not have considered affected their food choice during their freshman year at college. When the students were able to tell their personal story about their transition from high school to college and how their food choices and overall thinking about food had changed, they described more examples of internal and external factors associated with their food choices. The interview concluded with a question asking the students what the greatest challenge was, pertaining to the food choices they made, when transitioning from living at home to moving to college and getting food from the dining facilities. All students agreed that there was a difference in how they chose their meals in high school compared to how they choose their meals now in college.

The following sections include the themes that were extracted from the students' interviews. These themes were completed by developing a Primary and Secondary Themes Table (Stockdale, 2002). Criterion for identified themes included at least half of the students explaining that the theme affected their food choice. Within each theme of both the internal and external factors, subthemes emerged. The understanding of current factors, themes, and subthemes were then illustrated using mind-mapping software to exemplify the findings (Appendix E). Each theme explained described the students' perception of both internal and external factors affecting their food choice as well as including direct quotations from the interview showing an example of the students' perception. These direct quotations can be fully comprehended by viewing the direct question asked from the researcher and the students' answers in Appendix D. The

students' names have been changed to pseudonyms to ensure confidentiality but also to show personalization within each student's response.

Internal Factors

Within the broader category of factors affecting college freshman food choices, there were three themes identified. The themes identified that internally affected freshman students' food choices included the student having some sort of knowledge about choosing and eating healthy foods, choosing foods based on their familiarity within their daily routine, and their ability to manage their time to be able to choose their pursued food choices. The most common descriptions in each theme associated with internal factors are also highlighted below thus revealing subthemes.

Knowledge About Choosing Healthy Foods

The internal factor representing the largest number of comments was the students' knowledge and understanding about choosing foods that were healthy and nutritious. Nicole stated that, "You need fruits and vegetables for vitamins and minerals for your body." Every student had some sort of knowledge about healthy food choices. Students most often stated that eating fruits and vegetables every day was important. Other comments included the students describing healthy foods including whole grains, lean protein, low-fat options, smaller portions, and fewer calories. Charlie shared, "I started getting wheat bread instead of white bread for sandwiches at lunch. I tried to stay away from the pastas and the mac and cheese and mashed potatoes because those are just really high in carbs." Over half of the students stated they typically chose a salad once per day at the dining facilities, normally during lunchtime. Some students appeared unsure about their specific answers when describing their knowledge about healthy foods. When asked about his knowledge of healthy eating, Jason stated, "That you're not

supposed to eat a lot of bad fats and sugars and that's essentially it. Like eating veggies and fruit and stuff.”

A subtheme identified within the theme of students' knowledge included some students acknowledging the possibility of weight gain during their freshman year of college. Six students included comments that contributed to this subtheme, but the students who commented repeatedly spoke about weight gain throughout their interview. Some students appeared worried or nervous about gaining weight during their freshman year. There were two students' that spoke about the concern of gaining the “Freshman 15” when they started college. Lisa shared, “I kind of knew about the freshman 15 at the beginning of the year; it scared me.” Two other students spoke about losing weight while they were in high school and stated their fear about gaining that weight back. These students were influenced by these experiences when choosing healthier food options at the dining facilities. Jason shared, “I binged ate and wasn't very active in middle school so I gained a lot of weight. Throughout high school I slimmed down and started eating really healthy. I think my family partly helped me through that and I actually have felt better. I don't want to gain that weight back.” Sarah talked about gaining weight easily all her life and being conscious of what she ate, thus she felt she had the motivation to choose healthier food options during her freshman year. A few students stated that they never thought about gaining weight until they came to college. These students shared feeling oblivious to weight gain during the first few months of school and acknowledging the need to change their eating habits and food choices when they realized they had gained weight. Charlie shared, “So at the beginning of the year I probably didn't choose healthier foods, and so I started gaining weight. I gained about 10 pounds.” When asked if there was a difference in how she chose her foods in high school compared to college she stated, “Yes, I think now that I gained the weight I realize that I wasn't

eating healthy and I wasn't thinking about how the food would affect me. So now I try to make healthier choices.”

Familiarity With Food Choices

Half of the students stated that how familiar they were with a food item throughout their life affected how they chose their foods at the dining facilities. These students picked familiar items that they had tried at the beginning of the semester as well as foods that they had had at home before coming to college. Emily shared, “I like consistency in my life. I think that's why I do the same things almost every single day.” Kyle shared that he didn't try new things that often because he knew what was “good” and what he liked. Lisa described eating mostly the same thing every day: a granola bar in her room for breakfast, a salad for lunch, and either pasta or stir-fry for dinner. Nicole was asked if her family affected her food choice and she shared, “The different types of foods I had growing up is what I'll choose most often, like I'll go get the baked spaghetti because I have had baked spaghetti before.” All students interviewed agreed that the food available at the dining facilities was substantial enough and met their dietary needs; therefore not many recommendations about adding new foods to the dining facilities were introduced.

Students' Ability to Manage Time to Enable Pursued Food Choices

Every student described their food choices being affected by their schedule or other extracurricular responsibilities they were required to attend during their freshman year. Within being categorized as an internal factor, students mostly described their time management skills in terms of deciding whether or not to eat breakfast as well as their breakfast choices.

Due to the students interviewed having the 14 meal per week meal plan, choosing to eat breakfast was commented on by all eight students. The university allows students to purchase up

to \$8.20 in food to equal one of the 14 meals provided throughout the week. Students are allowed to use their meals for breakfast, lunch, and dinner. Two of the eight students stated skipping breakfast everyday and just consuming two meals per day. One of these students included Kristen, who shared, “One of my biggest challenges from transitioning from high school to college was skipping breakfast. With only 14-meals [on meal plan] and night classes, I normally skip breakfast.” Kristen also discussed how she personally decided to skip breakfast during her freshman year due to her conflicting schedule and not finding breakfast food appealing.

Six students described eating breakfast in their room. Emily described this as, “Usually only having two meals per day [at the dining facilities], so I eat breakfast in my dorm.” These breakfast choices included portable food items that were purchased from on campus convenient stores as well as grocery stores off campus. The food choices were normally quick “grab and go” food items so that students could eat them in their dorm rooms or on their way to classes to effectively manage their time. Sarah explained having a bowl of cereal in her dorm room for breakfast. Her and another student showed negative concern about having the ability to have another meal per day meal plan so that they could choose food for breakfast from the dining facilities. She said, “If I went out and got breakfast I’d probably get like bacon and all that kind of [unhealthy] stuff I don’t want to eat every day.”

External Factors

Within the broader category of factors affecting college freshman food choices, there were four themes identified. The themes identified that externally affected freshman students’ food choices included the students’ school schedules and extra curricular responsibilities, the crowdedness and lengthy lines within each dining facilities, food availability at on-campus

dining facilities, and the people they had interacted with before and during their freshman year of college. The most common descriptions in each theme are highlighted below thus revealing the subthemes.

Students' School Schedules and Extra Curricular Responsibilities

One of the hardest transitions that students described affected their food choices was managing their time around their class schedules and other activities. Nearly all students shared incidences where their school schedule affected what they chose to eat. Classes during breakfast, lunch, and dinner affected the students' perceptions of food choice. One student had classes so early that she ended up skipping breakfast due to her not yet being hungry. Many students had classes through their lunch period and would have to skip or wait extended hours to consume lunch. Emily shared, "My classes are jammed packed right in the middle [of the day] so I don't have time to get much of anything, so I'll usually bring a snack from my dorm to eat if I remember." Many students had classes in the middle of the day and discussed this type of food planning. One student described her school and band practice schedule as being later in the evening, and not being able to choose the foods she wanted due to certain dining facilities being closed for the evening.

Over half of the students interviewed shared they had started eating more quickly and more "on-the-go" compared to when they were in high school. While many students had classes and meetings to attend, food was described as being lower on students' priorities. Some students described these fast choices they made as being sometimes unhealthy. Kyle stated, "If I don't have a lot of time between classes I tend to get something that's faster, and sometimes not as healthy." Students described these unhealthy food choices being made in the university's

“Atrium” dining facility which included food vendors Papa Johns Pizza®, Chick-fil-A®, and other fast food entities.

Along with choosing healthier foods, not one student ate their dinner every night while sitting at a table during their freshman year at the dining facilities, but all students stated that they would usually sit down and eat together as a family during their high school years before they came to college.

While on their way to class, students would usually purchase portable food items that were easy to carry with them. Lisa shared that she had to get “something fast before [her] classes started” or she wouldn’t have time to eat. Nicole shared that she had a laboratory class that began at 12:00 AM and didn’t end until 3:45 PM. Therefore she would bring a granola bar to class if she remembered, so she would not feel like she was “starving” when she got out of class at 3:45 PM.

Crowdedness and Lengthy Lines at the Dining Facility

Over half of the freshman students interviewed shared a story about how long some of the lines were at the dining facility during their first year in school. These long lines would act as a barrier to students trying to choose the foods they wanted. There were no specific comments about which lines were long. Therefore the researcher was unable to fully distinguish which foods (healthy versus unhealthy foods) being chosen were not able to be acquired. Students who described their decision to eat or not certain foods resulted in eating a smaller meal when the lines were extensive. Emily stated, “Sometimes the lines are too long so I’ll just get a little snack because I don’t want to wait in any of the lines,” therefore she chose to eat just a snack for her meal due to the lines at the dining facilities. Kristen shared that she “always looked at the lines first” because if they were too long she normally did not have time and would not wait in a long

line. Some students agreed that the length of the line as well as how crowded the dining facility was most often externally determined the choices they made compared to the foods that they internally wanted to choose. Kyle stated, “I never use the sandwich place [line] and whenever I try to there are too many people and I don’t feel like waiting in the line.”

Food Availability at the Dining Facilities

The students interviewed obtained the majority of their meals from the dining facilities. Within these dining facilities, students described the foods that were available to them and the factors that were associated with how they chose their food. All freshman students interviewed agreed that the university provided sufficient food for them and had few recommendations based on adding different food items to the dining facilities.

Half of the students interviewed discussed an emerging subtheme regarding the large selection of food being available to them at the dining facilities compared to when they were in high school. Emily shared, “There was so much more food here than there was in high school.” Some of these students even felt overwhelmed by all the food choices that were available. Lisa stated, “I am overwhelmed here because there are so many options, so immediately I have to start narrowing.” Before college, students explained that it was easier to choose foods at home due to having less options and not feeling overwhelmed with making a food decision. Jason shared that the biggest transition for him from high school to college was the food selection: “My family would just select something easy and quick and think that’s fine. Here it is such a large selection of food!”

The university’s dining facilities offer a wide variety of fruits, vegetables, and other nutritious options for students on campus. Students who participated in this study felt that the healthier foods offered at the dining facilities were overpriced or too expensive, which became

an additional subtheme as an external factor. Nicole's one recommendation for the dining facility asked in question 12 included, "Either up the quality or lower the prices of the boxed fruits and vegetables." Lisa agreed by sharing, "Just basically I just feel like healthy things are way overpriced here. Especially with fruit and vegetables." Some students even acknowledged the fact that they would choose unhealthier food items so that they could get more food within their \$8.20 meal allowance due to the healthier foods being more expensive than the unhealthier ones. Kyle stated, "I'll get stuff that's cheaper usually compared to stuff that's healthier just because I can get more of it." Some students commented on having to put food back if they went over the price allowance for the meal. Those foods most commonly tended to be a piece of fruit or other side option.

Another subtheme emerged with nearly all students commenting on the prepackaging of fruits and other healthful foods at the dining facilities. The students interviewed described these packaged items as "on-the-go" prepackaged foods that were quick and easy to choose and seemed to be a "fairly healthy" food option. Most dining facilities on campus prepare and sell these sorts of items. There are expiration dates on each container to assist dining facility staff in meeting food safety regulations. Students had many negative comments about choosing these types of food options due to their taste and appearance, as well as the foods' elevated prices. Emily believed the "fruit in the package containers is like preserved by lemon juice or something and I ate it one time it made my stomach hurt and so I don't really get the packaged fruit and vegetables anymore." Nicole explained that she would never choose pineapple because of its appearance and looking "super pale" at times and she could tell, "It was not going to be good." Other students, such as Nicole, bluntly shared, "It's kind of harder to get the little cups of fruit because they are so expensive." A pattern emerged revealing that students who had tried and had

a bad experience with packaged fruit or other foods would rarely try those types of foods again.

Kyle explains this scenario further, “The first thing I got that was packaged was hard boiled eggs, and I’d say they were the most disgusting eggs that I’ve ever had in my life. So I thought to myself ‘I will never get anything packaged again [at the dining facilities].’ ”

People the Student Interacted with Before and During Their Freshman Year of College

Students were asked a series of questions, which involved them sharing any factors related to the people in their lives that affected their food choice. These different people were categorized into questions about their friends during their freshman year at college and their family before coming to college. Question nine of each student’s interview asked whether the student thought that their friends, or family, affected the way they chose their food. Nearly all students stated they did not believe their friends affected their food choices at that time in the interview. The students who stated this, all later explained how their friends assisted them in deciding what to eat based on these friends’ previous food choices, positive or negative.

Therefore, friends were shown to have an indirect affect on the food decisions that were made amongst the students interviewed. Emily shared, “Like sometimes my friends will be like, ‘Hey let’s try this thing’ and I’ll get it and me and my friend will try it together.” While Kyle shared that his friend’s would show him different food options that they had tried before and he would then choose those options. Students shared that they also felt more comfort in trying new things if their friends had tried them previously. Nicole stated, “A lot of times I will be more willing to try something new if I’m with a friend and they say, ‘This is good, let’s get it.’ ”

Students also shared that their food decisions to eat off-campus, away from the dining facilities, were usually affected by their friends as well. Freshman students at this selected university were not allowed to have their vehicles on campus, therefore making a barrier for

freshman students to go off-campus to obtain food. Some students interviewed had friends that would take them to grocery stores and restaurants to get food. One student described having the ability to borrow a friend's vehicle to go off-campus and purchase fruits to keep in her dorm room so that she would not have to purchase them at the dining facilities. Another student described her friends affecting her food choice in an unhealthy manor due to being invited to go off campus and partake in unhealthy restaurants that served pizza and tacos.

After probing questions about how the students' friends had affected their food choice this year, questions were asked discussing how the students' families affected their food choice before they came to college. The external factor that emerged, which represented the largest number of comments throughout each interview, was each student solely describing their mother as being a major factor in how they chose their foods during their freshman year in college. This was the most commented theme throughout each interview with each student. Students described their mother's cooking and preparing food using both healthy and unhealthy approaches. Sarah was one of the students who described her mother as not preparing very healthy food by sharing, "My mom would always buy junk food and she rarely cooked healthy foods. I don't know why, it just wasn't her thing." Sarah, like other students whose mothers prepared unhealthy food, described a positive experience in transitioning to college and being able to choose healthier food items. She stated, "She [her mother] just bought a lot of junk food all the time, never really cooked. So when I got here it influenced me to go the opposite way." On the other hand, some students praised their mothers for their ability to prepare balanced meals for lunch as well as dinner for the family during their high school years. Charlie stated, "My mom was a really good cook so she always tried to have a balanced meal for dinner so I think she influenced me in how I choose my foods now to think about what I'm eating."

Nearly all of the students stated that their mother affected their food choice by eliminating the demand to contemplate about what they would choose to eat when living at home. Charlie stated that she never had to think about the food that she had in high school because her mom always packed her lunch for her everyday and had dinner prepared when she arrived home. When describing this regimen, Charlie showed nonverbal expressions including sounding comical about her mother preparing her foods for her at such an older age. Nicole also shared, “I didn’t think about eating healthy as much in high school just because I ate fruits and vegetables at lunch and mom had fruits and vegetables at dinner so it wasn’t that important to factor in myself.” Students’ ability to choose foods and make personal decisions based on larger selections of food and personal choice rather than their mother providing the food that they chose was a popular theme.

Students also described their mother many times by sharing that they felt they could hear their mother in the “back of their mind” telling them not to eat “sugar every single day and don’t eat candy bars every single meal” (Emily). Three students revealed this type of comment showing that their mothers affected the way they chose their foods based on what their mother thought was healthy versus unhealthy. All students agreed that they would choose to eat the foods their mothers prepared before they came to college. Now, though, not all students stated they would choose the foods their mothers would prepare when they visited home this year after attending college as a freshman and being able to personally choose the food they wanted at the dining facilities.

Summary

To better understand the reasons freshman college students choose certain foods, two research questions were tested to analyze students’ perception of the internal and external factors

that may affect their decisions. Eight freshman students were recruited and interviewed by the primary researcher. The interviews were then transcribed and analyzed to show related themes that affected their food choice their freshman year of college. Seven overarching internal and external themes emerged from students' perceptions when they chose their food at the dining facilities.

Questions one and two of the interview helped prepare the student to speak about their food choices by asking them about their 14 meal per week meal plan. They were prompted to speak about the transition of having a meal plan for the first time in their lives and how their meal planning occurred. Nearly all students stated feeling that they were provided enough food to be satiated and all of the 14 meals were used by the end of each week. Questions three through five helped prompt the students to become aware of the internal factors that may have affected their food choices. Questions regarding their knowledge and motivation to choose healthy foods were asked. Three internal factors emerged regarding how students choose their foods at the dining facilities. These included the students' knowledge about food choice and freshman student weight gain, choosing foods that they were familiar with in the past, and being able to manage their time so that they could choose their pursued food choices, especially breakfast choices. Questions six through thirteen asked students about their environment and the external factors that could be affecting their food choices. The themes that emerged from these questions regarded the students' school schedule, the crowdedness of the dining facilities, the food available to them, and the people in their lives who may have or currently do affect their food choices. The last section of questions helped the students acknowledge any key factors that affected their transition from high school to college pertaining to their food choice. Within this section, the interviewer asked the student to speak about their food choices in high school and

how these choices changed when coming to college. This assisted the student in remembering their transition and helped them describe even more examples of internal and external factors that affected their food choices.

The next chapter will discuss these results in further detail and recommend further research to be completed in this area of study.

CHAPTER FIVE: DISCUSSION

After interviewing eight freshman college students, this study revealed both internal and external factors that may be affecting them when choosing their food at university dining facilities. These perceived factors affecting their food choices were experienced in high school and while transitioning to college. Studies have shown that students experience many changes when transitioning from high school to college and that their overall health and wellbeing can be influenced by many factors throughout this transition. These factors can directly and indirectly affect the way they choose their foods during their first year at college.

All of the students interviewed revealed both internal and external factors that affected their food choices during their freshman year. Within each factor shared, several themes and subthemes emerged which were consistent with current literature regarding factors affecting college students' food choices. These factors, themes, and subthemes were illustrated using mind-mapping software to illustrate the findings (Appendix E). This chapter combines the results of this study with previous research to discuss

1. What are the internal factors that affect students when making food selections at university dining facilities during their freshman year?
2. What are the external factors that affect students when making food selections at university dining facilities during their freshman year?

All students interviewed provided various factors that contributed to their food selection during their freshman year of college. Every student stated having some sort of knowledge about choosing healthier food items and shared how this knowledge affected their food choices. This was the most discussed internal factor among the students interviewed which coincides with current findings in research (Childers et al., 2011; Silliman et al., 2004). The external factor most discussed also included the students revealing their mothers affecting the way they choose their foods at the dining facilities. Current research shows recognition of parents and families affecting students food choices (Childers et al., 2011; Holm-Denoma et al., 2008), but not specifically mothers alone. Along with categorizing the two internal and external factors that affected students' food choices, seven themes emerged which will be briefly discussed. Various subthemes were also identified due to consistent commenting on a specific theme from student participants during their interviews. The following discusses the seven themes identified in association with preexisting research and current health and wellness education.

Courses teaching students about food and nutrition is standardized in secondary and post secondary schools today via health, physical education, and wellness courses. Many students are expected to take some sort of health or physical education class in college, and some studies show that these mandatory classes may assist students in choosing healthier food options (Ha & Caine-Bish, 2009; Matvienko et al., 2001). This study revealed similar findings with preexisting research in which students do know what foods they should choose to obtain a healthy diet, but that does not mean that they will factor in this theme while choosing food (Childers et al., 2011; Kolodinsky et al., 2007). Previous studies have shown college students having high energy dense diets with increased amounts of saturated fat, sugar, and sodium (Deliens et al., 2014; Holm-Denoma et al., 2008). Student interviewed in this study stated trying to choose foods with lower

fat and choosing to eat less sugar options during their freshman year. Other students shared they based their choice mostly on taste enticement, appearance, and the familiarity the student had with the food. Students also showed awareness of the term “Freshman-15” and two students showed concern about weight gain as previous studies had revealed. The findings of this study were consistent with previous research showing that students are aware of the concept of weight gain during the first year of college. Though this awareness is present, students are realizing the reality of personal weight gain only after the weight gain has already occurred. This suggests they don’t have an understanding of how weight gain can occur so rapidly during their first couple months at college (Holm-Denoma et al., 2008). Students also shared that they were more likely to choose foods at the dining facilities that they were familiar with. Whether they were familiar with the food from high school or having it be a food item they had grown up eating, students stated more likelihood of choosing foods they were familiar with and then keeping their food choices consistent due to class scheduling factors and having consistency in their lives.

As previous research suggested, college students are continuing to have over amplified schedules due to academic courses and extracurricular responsibilities (Childers et al., 2011; Lacaille et al., 2011). When students transition from high school to college they are faced with many challenges, especially managing their time wisely all while trying to obtain a healthy school-work balance in their lives. Time management was an emerging theme that nearly all students interviewed discussed affecting their food choices. While having an altered breakfast in their dorm room was described by most, two students stated they completely skipped breakfast due to having early morning classes and only 14 meals available at the dining facilities. Similar findings reported that breakfast was the meal skipped most often as well as being the most important meal for nutritional purposes (Silliman et al., 2004). Although students showed having

some knowledge about healthy eating as previously stated, the importance of consuming breakfast and knowing that this meal is the most important was absent due to not being able to properly manage their schedules to allow time for it.

Freshman students' ability to manage time is a key when influencing both the internal factors which can affect their food choices, such as managing time to eat breakfast or not and what to eat for breakfast. Management of time was also shown as an external factor where students' school schedules directly affected the foods they chose to eat. Coincidence with research completed by Greaney et al. and Lacaille et al, students' college schedules greatly affected the food decisions that they made due to limited dining facility-operating hours as well as needing to consume food quickly so they could attend class. Some students even stated skipping meals due to having classes during lunchtime hours. The students interviewed also factored what types of food they would choose based on its portability and how quickly they could consume it. Many students stated eating a "protein-bar" or something from a fast-food dining spot on campus so that they could arrive to class on time. Another external factor in relation to time management included students making their food choices based on how long the line was at each dining facility station and how crowded each facility was at the time the student wanted or had time to eat. One student shared going to a dining facility and it being so busy that as him and his friends walked in and saw the long lines and crowdedness, they decided to walk out and eat snack-type foods in their dorm rooms. The theme showing dining facilities having too long of lines and being too crowded is an emerging finding in this research. Some research has shown that by designing college dining facilities so students see the healthier options first can assist in students choosing healthier foods. Brian Wansink studied the theme of "Slimming by Design" which incorporated displaying the healthier items first in a buffet followed by the

unhealthier items. This “first foods first” operation revealed that over 75% of individuals selected the first food they saw: the healthier foods (Wansink & Hanks, 2013). The results of this study revealed that students did know where the healthier food options were in the dining facilities but at times were unable to obtain the food due to long lines and needing to attend class.

Another external factor that emerged from the interviews included the students speaking about the availability of food at the dining facilities. Within this availability theme there surfaced three separate subthemes: having such a large selection of food that students felt overwhelmed at times, thinking that healthier food items were too expensive, and portable, packaged foods were at times unappealing and overpriced. Half of the student interviewed described having such a large selection of food available to them at the dining facilities. Many of them at times felt anxious or overwhelmed when thinking about which foods they would have to choose. Barry Schwartz’s research has proven that individuals who live in the United States that have excessive choices and “increased influences” have feelings of decreased wellbeing in life. Therefore, Schwartz’s research suggests that more choices are not always seen as beneficial to individuals (Schwartz, 2004). When choices have to be made where excessive options are present, individuals start thinking about the opportunity cost of their decisions. Like many students shared, if they would get one food item, they could not get the other due to having to stay within their price allowance for that meal. Student stated in the interviews that if they got expensive entrées, such as stir-fry, than they couldn’t get fruit or another side they might have wanted. The student was put in a position where they had to choose not to purchase items for fear of exceeding their cost per meal allowance

Previous studies have shown even though students have excessive meal options to choose from, they also sometimes choose unhealthier food items based on the prices of these items

(Brown et al., 2005). Seven of the eight students interviewed discussed healthier food at the dining facilities being overpriced or expensive which was the reason why they would not choose them. One student stated wishing that “it was cheaper to eat better.” The topic of healthy food being too expensive is a large dilemma in our society today. After speaking with a food service employee at the dining facility where students were recruited from, more insight on students’ perception of healthy food being too expensive was discovered. This employee stated, “In comparison to unhealthy food items, the healthy food is not that expensive. I mean, a grilled chicken breast is one dollar cheaper than chicken tenders.” Having students understand what foods are available and the direct price of those foods in combination together may help alleviate this factor of perceiving healthy food as being too expensive. The food service employee also stated, “It’s about making the right choices because the options are available. Students need to learn how to combine healthy foods together so that they can have a healthy meal, while saying ‘no’ to some of the things they don’t really need, like dessert at every meal.” This type of understanding about decreasing or eliminating the amounts of unhealthy food purchased and substituting those foods with healthier options may assist in the perception of healthier food items being more expensive in the students’ and our society’s perceptions.

Along with healthy foods being suggested as overpriced, students interviewed commented on portable foods that were prepackaged by the dining facilities being too expensive as well as unappealing at times. As previously mentioned, college students today have full schedules due to class and extracurricular responsibilities. Along with this comes the responsibility for students to manage their time so healthy food choices can be made. Nearly all students stated they had to choose portable lunch items due to having such busy schedules so they could eat quickly before class or eat while on their way to class. Some students stated they

purchased these types of food items a couple times but felt they were too expensive and poorly presented. Therefore, when students would not choose the healthier options of prepackaged fruits and vegetables, they would sometimes turn to unhealthier options such as fast food dining spots on campus and vending machines that contained unhealthy options as well. To diminish this negative attitude towards healthy foods in the dining facilities, universities may choose to purchase and provide fresh foods that are in-season, therefore being able to sell these items at a lower price. Dining facility staff may also need to be trained to understand why packaged foods' appearance and taste is so important to freshman students' food choices as illustrated in this study.

Students revealed a fourth external factor: the people who affect their food choices. The people who emerged throughout each interview that affected their choices included the students' friends as well as their mothers. This coincides with other studies showing that people students interact with can have a healthy or unhealthy impact on their food choices (Lacaille et al., 2011). At the beginning segment of the external portion of the interview, students were asked if they felt their friends affected the way they chose their food. All students stated at that moment in the interview that they did not think their friends affected their food choices. Although later in the interview those students admitted taking their friends advice in trying new food items. Therefore showing a possibility of students not being aware the impact their friends may actually have on their food choices during their freshman year at college.

When asked a similar question about whether their family affected their food choices, every student interviewed acknowledged that their mother had some type of affect on the way they chose their food during their first year at college. Previous studies have recognized families affecting students' food choices (Childers et al., 2011; Furia et al., 2009), but no current research

was available to show that mothers specifically affect the way freshman students choose their foods. Various research suggests that it is particularly the mother's and father's roles to choose and prepare the foods as well as teach their children how to eat in a healthy or unhealthy manner (Childers et al., 2011). In the present study, the mother affected the student more than any other external factor perceived. Some students shared that their mothers would provide a balanced meal for their lunch they would take to high school and at home for their family meals. This study helps to present an emerging theme, which could affect freshman students' food choices.

It is standardized to teach health and nutrition classes in secondary and post secondary schools today. However, it is uncommon to provide these types of nutrition and health courses to families and specifically to the mothers of various communities. This study could assist with showing possible success in helping students choose healthier foods when they leave home and attend college by creating programs that will support the mothers of various communities to improve their knowledge on food and nutrition. Along with learning what types of foods they should or should not eat at home, half of the students stated having an association between the familiar foods that their mothers' provided to them and what they chose at the dining facilities during their freshman year. This also reveals the importance of mothers introducing healthy food behaviors before college due to students choosing foods that have been familiar to them, and then keeping these choices consistent with their daily student life routines.

Limitations of the Study

A number of considerations need to be made when viewing the results of this study. First, this study utilized personal interviews with college freshman students for data collection. Some students may have been hesitant to share all of their thoughts due to speaking face-to-face with the researcher. Students may also have not thought about some of the factors throughout the

interview due to using a semi-structured interview guide where ideas of the factors were presented to the students. Second, the small sample size was observed from a mid-sized midwestern university and may not be indicative of freshman students at other sized universities. Also the results should not be indicative of every freshman student on the campus where students were recruited. Recruitment was finished when the transcribed interviews showed redundancy in emerging themes. Third, the results of this study are specific to on-campus students who obtained majority of their meals from on-campus dining facilities. Majority of these facilities used an a la carte style of choosing foods, rather than an all-you-can-eat buffet style of dining court as some universities provide.

Implication of Research

The findings of this study should be used, in conjunction with preexisting research, to observe how students choose their food during their first year of college. Previous studies have revealed many challenges students face when transitioning from living at home to living on a college campus. Many students are influenced by negative factors, which can alter their health and growth development due to the affect of the foods that they choose to consume their first year of college. These factors can also be represented as barriers that students can experience when trying to choose their foods at the dining facilities on a college campus. Several areas emerged in this study, which will be important to carry forward in helping high school and college freshman students become aware of potential factors they may experience when choosing their food in college. The most commented-on theme, which emerged as an internal factor, included the students' preexisting knowledge of healthy food choices as well as their consistency in a food choice throughout their freshman year. The external factor that was commented on the most included mothers having a major impact in what foods the students decided to choose.

The context of this research on factors affecting college students is broad but unformed throughout this study's findings. College students do have the knowledge about healthy and unhealthy food options and are aware of freshman student weight gain. Even though some of these students are aware of these items, they still had chosen to consume unhealthy food items at the beginning of the school year as similar studies revealed (Childers et al., 2011; Kolodinsky et al., 2007). It is not until their weight gain is acknowledged before the students start thinking about how they can eat healthier to try and lose weight. This could be the reason why individuals in their twenties gain weight more rapidly than any other age group (Holm-Denoma et al., 2008). Teaching students about how weight gain can occur and how important it is to choose healthier food options may assist students in trying to have a more varied diet in the first few months of their freshman year. Students today know what foods they should be eating, but may be confused about how important these food decisions are to maintain a healthy weight and high functioning physical wellbeing.

Students commented on the importance of having consistency in their lives during their freshman year, which included the types of foods that they chose. They also commented on choosing familiar foods that were eaten before college more often than trying newer items in college. Results of a study, which included over 7,000 participants between the ages of 18 and 99 years old, revealed a link between having consistency and regular rhythm in their life with having better mental health. The study's purpose was to research the association between "everyday lifestyle behaviors and mental health" (Velten et al., 2014). This current study shows possible positive impact of providing support to freshman students so they can experience consistency in their lives, especially by providing them with the ability to choose familiar food

options, therefore possibly assisting in improving their mental health during their freshman year at college.

Students also acknowledged their schedules being very busy and commonly choosing familiar foods or foods they could obtain and consume quickly. Less than half of the students interviewed described having motivation to eat healthier. The association of knowing what healthy foods to choose and not choosing these food options could be due to freshman students not being able to sufficiently manage their time so that healthy foods can be obtained and eaten. In relation with this topic, this study suggests that it may be effective if college dining facilities' will work together with university engineers and health promotion educators to develop a facility structure where it is easier to obtain healthier food choices. Dining facilities can also assist students in choosing healthier food options by ensuring healthy options are fairly priced, appealing to the eye, and well monitored for spoilage and tastefulness. Helping students to better understand how they can manage their schedules to enable having three nutritious meals per day, while assisting the students by developing a plan for the dining facility which allows these healthy habits can assist students in choosing the foods they know they should consume during their freshman year to prevent weight gain and better health. From comments within the interviews, these healthy habits can then be achieved every day due to students having consistency in their lives as well as choosing familiar foods.

Four major external factors emerged in this study, which again associated students' time management skills with their decision of choosing certain food options. First, students' schedules were a large factor in how they chose their food, which is why students perceived long lines and the crowdedness of dining facilities to be a major factor of their food choices. Some research suggests that individuals select food items based on the environment around them, therefore

tactfully designing the dining facilities as described before by having the healthier food options more readily available may be effective (Wansink & Hanks, 2013). Within this design, dining facility staff may benefit from fully understanding the facility's implications it has on the students' food choice from the findings in this study. Having in-season, prepackaged foods, at a discounted price can assist students in wanting to choose these healthier, and portable, food options, which will alleviate the need to skip meals or obtain food from unhealthy fast food facilities and vending machines.

Having health educators show continued support to the community, specifically the mothers of the community, through health and nutrition classes and seminars so that they can understand and practice healthy habits at home with their children may show benefit to how children choose foods as they age. Friends and families have been shown to affect students' food choices during their freshman year, and sometimes so scarcely that students are unaware of the affect. Having this support can assist mothers in choosing and preparing healthier food items at home so that their families become more familiar with these types of healthy habits. The assumption then is that these students who were shown healthy habits at home will continue healthy habits when they transition from high school to college, and while choosing their foods at the on-campus dining facilities.

Summary of Implications

Individuals in their twenties have a greater and more rapid weight gain than any other age group (Greaney et al., 2009). This weight gain may cause an increased risk for chronic diseases later in life. Since this risk is more commonly distributed later in life, freshman students may overlook the importance of physical health, specifically food choice, while they attend college. While this understanding may be helpful to present to freshman students, it may also be helpful

for health professionals to understand any perceived factors, or barriers, that can affect a student from choosing healthier foods in college.

Freshman students are experiencing both internal and external factors when choosing their meals at on-campus dining facilities. These internal factors include having the knowledge about food and nutrition but lacking in the understanding of why it is so important to choose healthy food options once transitioned to college and having to obtain food on their own. Additionally, students are consistently choosing their foods based on familiarity of the food and the amount of time they are able to choose food and consume it throughout their daily schedules. These full schedules freshman students have emerged within each student's interview. Currently, students are not showing the ability to manage their time so that food choices can be made properly and healthfully. Food availability, including large selections of foods as well as placement and quality of food also affects freshman students' food choices. University employees should have the understanding and disposition to support students in obtaining healthier food options by making it easier to acquire them. Additionally, health professionals should continue to support the mothers of the community to assist them in better understanding how to instill healthy habits in their households as well as teach them about their implications of their food choices. This can therefore assist students in learning about healthy food choices before college and the importance of healthy habits as they age.

Recommendations for Future Research

Freshman student weight gain continues to be a problem in universities nationwide. Continued research is needed in order to expand on the findings of internal and external factors that affect college freshman food choices, in association with unhealthy food choices. Several areas of research may be helpful in assisting freshman students overcome these obstacles of

choosing healthy foods. First, students are aware of which healthy foods to choose, but are unaware of how weight gain occurs so rapidly during the first few months of their freshman year in college. Future research helping students bluntly understand the consequences of unhealthy habits before college may be helpful in assisting them in understanding the importance of healthy food choices when they attend college. Second, assisting freshman students in time management skills and developing a program which can help students efficiently manage their time and understand the importance of eating full and nutritious meals can assist in the factor of school schedules not allowing healthy food choices to be made. Third, studies regarding the effectiveness of designing the dining facilities so that the healthier food items are easier to obtain may assist other similar sized universities to help their students choose healthier items. Also, engineering dining facilities to support students to be able obtain to and consume healthy meals in their dorm rooms or on their way to class would be research needed to reveal whether students would choose healthier options if they were more easily attainable. Lastly, future research and understanding about the mother's role in their child's food choices when they attend college would be beneficial. Additionally, this research could reveal the best ways to support and educate mothers as it relates to their food choices for their children and the impact it has on them upon attending a college or university.

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Appendix A: Recruitment Tool

Food Factors Recruitment Tool

1. What year of college are you currently in?
 - Freshman
 - Sophomore
 - Junior
 - Senior
 - Graduate Student
 - Continuing Education Student

2. Do you live in on-campus housing?
 - Yes
 - No

3. What meal plan do you have at Ball State University?
 - 21 Plus Meal Plan
 - Any 18 Plus Plan
 - Any 14 Plus Plan
 - Any 10 Plus Plan
 - I don't know

4. How often do you come to the Woodworth Dining Facility?
 - Every day, every meal
 - Every day for at least two meals
 - Every day for at least one meal
 - Once every couple of days
 - Once a week
 - Not often

Name: _____ Phone: _____

Email: _____

Appendix B: Information Guide and Consent Form

Study Title Perceived Factors That Affect Freshman College Students When Choosing Foods From University Dining Facilities

Study Purpose and Rationale

The purpose of this research study will be to observe and present the current factors students perceive affect their food choices in their first year at college while living on-campus. This study will present information for university health educators to effectively teach on health and wellness and provide holistic health and wellness services based on college students' perception. This study will also present information to university dining services about students' perceptions of how they choose foods at a dining facility. This information will be helpful for similar sized universities who seek to understand and overcome the obstacles dining facilities and on-campus food stores have in assisting students to be able to choose healthful food options while living in residential housing.

Inclusion/Exclusion Criteria

To be eligible to participate in this study, you must be between the ages of 18 and 21, be a traditional freshman college student, and currently living in a university residence hall. You must also need to have a 14-meal per week meal plan during the first two months of your freshman year and primarily obtained the majority of your meals from the Woodworth dining facility.

Participation Procedures and Duration

For this project, you will be asked to answer a series of questions during a one-on-one interview with the principle investigator. It will take approximately 90 minutes to complete the interview.

Audio Tapes

For purposes of accuracy, with your permission, the interviews will be audio taped. Any names used on the audiotape will be changed to pseudonyms when the tapes are transcribed. The tapes will be stored in a locked filing cabinet in the researcher's office for three years and will then be erased.

Data Confidentiality or Anonymity

All data will be maintained as confidential and no identifying information such as names will appear in any publication or presentation of the data.

Storage of Data

Paper data will be stored in a locked filing cabinet in the researcher's office for three years and will then be shredded. The data will also be entered into a software program and stored on the researcher's password-protected computer for three years and then deleted. Only members of the research team will have access to the data.

Risks or Discomforts

There are no perceived risks for participating in this study.

Who to Contact Should You Experience Any Negative Effects from Participating in this Study

Should you experience any feelings of anxiety, there are counseling services available to you through the Ball State University Counseling Center in Muncie, 765-285-1736.

Benefits

There are no perceived benefits for participating in this study.

(Voluntary Participation)

Your participation in this study is completely voluntary and you are free to withdraw your permission at anytime for any reason without penalty or prejudice from the investigator. Please feel free to ask any questions of the investigator before signing this form and at any time during the study.

IRB Contact Information

For one's rights as a research subject, you may contact the following: For questions about your rights as a research subject, please contact the Director, Office of Research Integrity, Ball State University, Muncie, IN 47306, (765) 285-5070 or at irb@bsu.edu.

Study Title Perceived Factors That Affect Freshman College Students When Choosing Foods From University Dining Facilities**Consent**

I, _____, agree to participate in this research project entitled, "Perceived Factors That Affect Freshman College Students When Choosing Foods From University Dining Facilities." I have had the study explained to me and my questions have been answered to my satisfaction. I have read the description of this project and give my consent to participate. I understand that I will receive a copy of this informed consent form to keep for future reference.

To the best of my knowledge, I meet the inclusion/exclusion criteria for participation (described on the previous page) in this study.

Participant's Signature

Date

What semester in school are you in (please check one)?

- 1st semester Full-Time Undergraduate Freshman Student
- 2nd semester Full-Time Undergraduate Freshman Student
- 1st semester Part-Time Undergraduate Freshman Student
- 1st semester Part-Time Undergraduate Freshman Student

What is your age? _____

What is your gender (please circle)? Male Female

Which meal plan do you have?

- 10 meals/week plan + \$100 Dining Plus
- 14 meals/week plan + \$100 Dining Plus
- 18 meals/week plan + \$75 Dining Plus
- 21 meals/week plan + \$75 Dining Plus

Researcher Contact Information

Principal Investigator:

Brittany S. Wonnell, Graduate Student
Wellness Management
Ball State University
Muncie, IN 47306
Telephone: (765) 285-8259
Email: bswonnell@bsu.edu

Faculty Supervisor:

Dr. Jane Ellery
Coordinator of Wellness Management Program
Ball State University
Muncie, IN 47306
Telephone: (765) 285-8119
Email: jellery@bsu.edu

Appendix C: Interview Guide

Interview # _____
 Date _____/_____/_____

Interview Protocol

Script

Welcome and thank you for your participation today. My name is Brittany Wonnell and I am a graduate student here at Ball State studying Wellness Management. In partial fulfillment of the requirements to fulfill by degree, I am completing a research study. Thank you for completing the consent forms and providing me with your contact information, which made it easier to set up this interview with you. This interview will take about 60-90 minutes and will include questions regarding the factors you have experienced when choosing food this school year so far.

I would like for your permission to tape record this interview so I may accurately document the information that you convey. If at any time during the interview you wish to discontinue the use of the recorder or the interview itself, please feel free to let me know. All of your responses will be confidential with using a coding system and keeping all information under lock. Your responses will remain confidential and will be used to develop a better understanding of how you and other students view the factors associated with food choice.

Your participation in this interview is completely voluntary. If at any time you need to stop, take a break, or return to a question, please let me know. Do you have any questions or concerns before we begin?

1. Think about your 14-meal plan you use at the dining facilities. How does this “number” of meals per week affect your food choices, or perhaps how does it affect your overall thinking about food? (*Probe: Well what if you had more meals per week on your plan? How would that affect your food choices?*)
2. Do you normally use all of the meals provided to you throughout the week from your meal plan? Is this enough food for the week or do you have to obtain your meals from another location (i.e. grocery or convenient store)? (*If yes, probe: Do you enjoy obtaining your meals from those other locations? Where do you go and what foods do you buy?*)
3. So, previous studies have looked at what affects college students’ when choosing food. These factors are lots of times sorted as **internal** and **external**. Internal factors can affect the reasons you choose your food based on your personal behavior, or simply include the reasons as to why you personally may choose the foods that you choose. External factors include the environment, for example the people or items around you and how those influence your food choice.

The next few questions are about these internal and external factors. If you have any question about the difference between the two factors when going through these questions, please don’t hesitate to ask me.

So first,

- a. Internal Factors: Think about what you know about food and nutrition. How does this affect your food decisions that you make at the dining facilities? (*Probe: What are some things you know about healthy eating?*)
- b. Internal Factors: Try imaging yourself on a usual school evening in Woodworth dining facility about to get your dinner. Can you tell me a little bit about this experience? What types of things do you think about when choosing your foods? (*Probe: Do you feel that you have any interest or perhaps motivation in choosing healthier items?*)
- c. Internal Factors: Going off of the last question, what do you think of **most** when you choose your foods at the dining facilities? Please explain. (*Probe: Cost? Nutrition content? Taste? Smell? Appearance?*)

Now that we've looked at some of the internal factors, lets take a look at some of the external.

- d. External Factors: First, I'd like for you to think about your school schedule, as I'm sure it's very busy. How would you say that your schedule might affect the foods that you choose to eat? (*Probe: Have you ever felt that you had been in a "time crunch" to choose food and eat quickly?*)
- e. External Factors: I want to ask you a little bit about the things around you when you are choosing your foods or eating. When thinking about all the meals that you eat at the dining facilities, try and describe a normal mealtime for me. (*Probe: Do you eat with friends? Do you eat alone? Do you sit down and eat?*)

What types of things do you hear while eating? What do you see? Are there any smells?

- f. Do you think your friends (or family) affect the way you've chosen your food during this school year? Why or why not? (*Probe: Do you normally eat with friends or buy yourself? Did you eat together as a family?*)
- g. External factors: Are you able to get the foods you want at the dining facilities? Why or why not? What other kinds of food would you like as an option?
- h. On-campus Dining Facility: Think about your typical meal choices. What are they? (*Probe: How often do you eat these foods? Do you ever try new things that are available?*)
- i. On-campus Dining Facility: If you could make one recommendation to dining services, what would it be?

How are your choices at the dining facilities affect by price?

4. Thank you for sharing about the food choices you've made this year. Now I want to take you back to thinking about the food choices you made **BEFORE** college. So thinking about your

high school years, what types of food choices did you make normally at school and then at home? (*Probe: Did you have any of the things affect your choice that you described before like _____ & _____ during high school?*) (*Probe: What types of people did you eat with? Did you eat alone? Where did you eat?*)

Can you tell me a little bit about the flexibility that you had when choosing your own foods.

Do you think there was a difference in how you chose your food in high school compared to how you choose your food now?

5. What was the greatest challenge, when pertaining to the foods you eat, when transitioning from living at home to moving to college, living on-campus, and getting food from the dining facilities?

6. Before we conclude this interview, is there anything else you would like to share about how you've selected your food during this school year?

***** If participant wishes to discontinue study, ask if they would be willing to share why:**

Thank the participant for his/her participation

Appendix D: Summary of Themes Discussed in Results

The following tables reveal the interview answers shared in the results section of this study. Each theme is represented by a key word shown in the following parentheses.

The first table (a) represents the themes of internal factors that students perceived to affect their food choices during their freshman year of college. These themes included 1) the students' knowledge about choosing healthy foods (Knowledge), 2) the students' familiarity with food choices (Familiarity), and 3) the students' ability to manage time to enable pursued food choices (Time Management). The second table (b) represents the themes of external factors that students perceived affected their food choices during their freshman year of college. These themes included 4) the students' school schedules and extra curricular responsibilities (Schedules), 5) the crowdedness and lengthy lines at the dining facility (Crowdedness), 6) the availability of food at the dining facilities (Availability), and 7) the people the student interacted with before and during their freshman year of college (People).

The sequences illustrated in the tables represent the question-number that was being asked when the student commented on the specific theme. The students' names have been changed to pseudonyms to ensure confidentiality but also to show personalization within each student's response. The responses are organized in descending order from when they were presented in the results section to assist viewers in following along with the written script.

a. Internal Factors

| Sequence | Student | Question | Comment | Theme |
|----------|---------|--|--|--------------|
| 3.1 | Nicole | What are some things you know about healthy eating? | You need fruits and vegetables for vitamins and minerals for your body. | 1) Knowledge |
| 3 | Charlie | How does what you know about food and nutrition affect your food decisions that you make at the dining facilities? | So the beginning of the year I probably didn't choose healthier foods and so I started gaining weight so now I try choose to more healthy foods. But at the beginning of the year I probably ate from the comfort zone. That little section of Woodworth. They have real fatty foods there and mashed potatoes and mac and cheese. I'd eat that a lot. I gained about 10 pounds. So I was like I started getting wheat bread instead of white bread for sandwiches for lunch and I tried to stay away from the pastas and the mac and cheese and the mashed potatoes because those are just really high in carbs. So now I try and eat more salads and protein and healthier things. | 1) Knowledge |
| 3.1 | Jason | What do you know about food and nutrition? | That you're not supposed to eat a lot of bad fats and sugars and that's essentially it. Like eating veggies and fruit and stuff. | 1) Knowledge |
| 3.3 | Lisa | What are some things you know about healthy eating? | I kind of knew that at the beginning of freshman year but I didn't really care. It's just like the freshman 20 kind of scared me into being like "ok reevaluate." | 1) Knowledge |

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|------|---------|--|--|--------------|
| 9 | Jason | Do you think your friends or family affect the way you've chosen your food during this year? | Probably growing up what I've chosen to eat. But when I was younger I used to binge eat because I moved like 5 times in middle school. So I binged ate and wasn't very active so I gained a lot of weight throughout high school I slimmed down though and started eating really healthy so I think the family part has helped me through that and I actually have felt better about myself by choosing what I eat. It's not really friends but it's more like my personal and family. | 1) Knowledge |
| 3 | Charlie | How does what you know about food and nutrition affect your food decisions that you make at the dining facilities? | So the beginning of the year I probably didn't choose healthier foods and so I started gaining weight so now I try to choose more healthy foods. But at the beginning of the year I probably ate from the comfort zone. That little section of Woodworth. They have real fatty foods there and mashed potatoes and mac and cheese. I'd eat that a lot. I gained about 10 pounds. So I was like I started getting wheat bread instead of white bread for sandwiches for lunch and I tried to stay away from the pastas and the mac and cheese and the mashed potatoes because those are just really high in carbs. So now I try and eat more salads and protein and healthier things. | 1) Knowledge |
| 14.3 | Charlie | Do you think there is a difference in how you chose your foods in high school compared to how you choose your foods now? | Yes, I think now that I gained the weight I realize that I wasn't eating healthy and I wasn't thinking about how the food would affect me. So now I try to make healthier choices. | 1) Knowledge |

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|-----|---------|---|---|--------------------|
| 18 | Emily | Is there anything else you would like to share about how you've selected your food during this school year? | I like consistency in my life. I think that's why I do the same things almost every single day. I just get the same thing everyday because I just, I don't like change that much and just finding my way around stuff, and sticking to that has made me less like, I guess anxious about different things in college. | 2) Familiarity |
| 3.2 | Lisa | So that was at the beginning of the semester and then you kind of just learned things? | Ya so usually I always have the grains in the morning and maybe a salad, but if I'm craving protein I'll get a sub with meat or a protein bar pretty much ever day. | 2) Familiarity |
| 9 | Nicole | Do you think your friends or family affect the way you've chosen your food during this year? | Ya. Well friends make recommendations but also my family always ate healthy so that influences it so they help me to know to eat well and stuff. The different types of foods I had growing up, like I'll go get the baked spaghetti even if my friend never told me about it because I had baked spaghetti before. | 2) Familiarity |
| 17 | Kristen | What was the greatest challenge, when pertaining to the foods you choose, when transition from living at home to moving to college and getting food from the dining facilities? | Well it was kind of weird not eating breakfast everyday because like you get in the habit of that and I don't do that so that was a big thing for me. Having to go get my food is kind of a pain too. I live in DeHorty [Residential Hall] and we don't have a dining court so sometimes I even skip my meal because I don't want to walk across to Woodworth when it's really cold outside. So sometimes I'm just like it's too cold I don't want to go outside. So that's kind of a pain. | 3) Time Management |

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|---|-------|--|---|--------------------|
| 1 | Emily | Think about your 14-meal plan you use at the dining facilities. How does this "number" of meals per week affect your food choices or overall thinking about food? | Usually I only have two meals per day [at the dining facilities], so I eat breakfast in my dorm. | 3) Time Management |
| 1 | Sarah | Think about your 14-meal plan you use at the dining facilities. How does this "number" of meals per week affect your food choices or overall thinking about food? | It wouldn't honestly because if I had more meals the only way I could use them is if I ate breakfast and I just have breakfast in my room and I just get a bowl of cereal, rather than. Because if I went out and got breakfast I'd probably get like bacon and all that kind of stuff and I don't want to eat that everyday. | 3) Time Management |

b. External Factors

| Sequence | Student | Question | Comment | Theme |
|----------|---------|--|---|--------------|
| 6 | Emily | How does your school schedule affect the foods that you choose to eat? | My classes are jammed packed right in the middle [of the day] so I don't have time to get much of anything, so I'll usually must bring a snack from my dorm to eat if I remember. | 4) Schedules |

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|----|---------|--|--|----------------|
| 6 | Kyle | How does your school schedule affect the foods that you choose to eat? | If I don't have a lot of time between classes I tend to get something that's faster. Like there would be times where I would have 10 minutes between classes to just grab something. So I would go to the Atrium and grab Chick-fil-A because it's just fast. But if I had the time I would usually just find something that sounded good. | 4) Schedules |
| 6 | Lisa | How does your school schedule affect the foods that you choose to eat? | It affects it a lot actually. Because my breakfast meal gets cut off after 10:30 I found and so I have to get something before my classes start and I don't have enough time to eat some things so I might eat it after my classes. | 4) Schedules |
| 11 | Emily | What are your typical meal choices? | Umm, usually Mondays, Wednesdays, and Fridays I go to the Atrium for lunch because I meet my friend there. Sometimes I get Chick-fil-A. Sometimes the lines are too long so I'll just get a little snack because I don't want to wait in any of the lines. I've only gotten Papa Johns once because it was a short line. | 5) Crowdedness |
| 4 | Kristen | What do you think about when choosing food during a usual school evening in Woodworth dining facility? | Well I always look at the lines because if it's a long line I'm not going to wait. So I usually never get stir-fry because the line is always way too long. | 5) Crowdedness |

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|------|--------|---|---|----------------------|
| 4 | Kyle | What do you think about when choosing food during a usual school evening in Woodworth dining facility? | Usually I get the pasta because I think it's pretty good and I know I like stir-fry but that's really unhealthy compared to the other things. I never use the sandwich place and whenever I try to there are too many people and I don't feel like waiting in the line. | 5) Crowdedness |
| 17 | Emily | What was the greatest challenge, when pertaining to the foods you choose, when transition from living at home to moving to college and getting food from the dining facilities? | It wasn't really like a challenge, I guess it was just the biggest shock for me was that there was so much more food here than there was at home or at school. And I was just like "oh my gosh what am I going to choose." | 6) Food Availability |
| 10 | Lisa | Are you able to get the foods that you want at the dining facilities? | Yes, I feel like they have everything. I just get overwhelmed easily but I feel like that is just a personal problem. I just feel like there is a lot of choices so it's just hard for me to narrow it down. | 6) Food Availability |
| 17.1 | Jason | Was there any other challenges you could think of in differences. | Probably the selection. My family would just select something and it would be like something obscene and they'd be like that's fine. Here it is such a large selection of food! | 6) Food Availability |
| 12 | Nicole | What is one recommendation you would make to dining services? | Either up the quality or lower the prices off the boxed fruits and vegetables. | 6) Food Availability |

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|------|--------|--|--|-------------------------|
| 13 | Lisa | How are your choices at the dining facilities affected by price? | Just basically I just feel like healthy things are way over priced here. So if something is more than \$5 I'll just be like "that's a waste." Especially with fruit and vegetables. | 6) Food Availability |
| 5 | Kyle | What do you think of MOST when you choose your foods at the dining facilities? | Usually first I go by what sounds good at the time and then I go by price. I usually try and get the most out of my money that I can. So I'll get stuff that's cheaper usually compared to stuff that's healthier just because I can get more of it. | 6) Food Availability |
| 10 | Emily | Are you able to get the foods that you want at the dining facilities? | Most of the time, so I'm just like I'm sick of dorm food its just like it's the same thing over and over again. I learned that the fruit in the package stuff is like preserved by lemon juice or something and I ate it one time and it made my stomach hurt and so I don't really get the packaged fruit and vegetables anymore | 6) Food Availability |
| 12.1 | Nicole | What do you mean by up the quality of the fruits and vegetables? | Well you get it by ounce. But sometimes you look at the pineapple and you're like "you're not going to get pineapple because it's super pale and you can just tell it's not going to be good." I've had, you can get 4 oz tubs of grapes, and I've had them before when they've tasted like they had almost fermented. So just checking, general check every now and then would be nice. | 6) Food Availability |

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|------|--------|--|--|-------------------------|
| 3 | Nicole | How does what you know about food and nutrition affect your food decisions that you make at the dining facilities? | It's kind of harder to get the little cups of fruits because they are just expensive. So it's easier to find it with the vegetables that they serve, it's a little cheaper than the prepackaged. | 6) Food Availability |
| 10.1 | Kyle | Are there any foods you wish were an option which aren't? | I've only gotten fruit a few times that was packaged. The first thing I got that was packaged was hard boiled eggs, and I'd say they were the most disgusting eggs that I've ever had in my life. So I thought to myself "I will never get anything packaged again." | 6) Food Availability |
| 11.2 | Emily | Do you ever try new things that are available? | Like sometimes my friends will be like, 'Hey let's try this thing' and I'll get it and me and my friend will try it together | 7) People |
| 5 | Nicole | What do you think of MOST when you choose your foods at the dining facilities? | Probably familiarity actually. My familiarity or someone that I'm with familiarity. So a lot of times I will be more willing to try something if I'm with a friend and they say "This is good let's get this." | 7) People |
| 3 | Sarah | How does what you know about food and nutrition affect your food decisions that you make at the dining facilities? | Well this is one of the reasons I usually go to Woodworth because of their really awesome salad bar. Just because, back at home my mom would always buy junk food and she rarely cooked healthy foods. I don't know why, it just wasn't her thing. But I was just tired of it and when I got to college and saw that they had like healthy choices and stuff that's what I went for. | 7) People |

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|------|---------|---|--|-----------|
| 9 | Sarah | Do you think your friends or family affect the way you've chosen your food during this year? | The family influence. Well I mean they've influenced me the opposite like I said. I primarily lived with my mom and she just bought a lot of junk food all the time, never really cooked, so when I got here it influence me to go the exact opposite way. | 7) People |
| 9.1 | Charlie | Do you think your family or your support system at home has affected the way you choose your foods now? | My mom was a really good cook so she always tried to have a balanced meal for dinner so I think she influenced me in how I choose my foods now to think about what I'm eating. | 7) People |
| 17 | Charlie | What was the greatest challenge, when pertaining to the foods you choose, when transition from living at home to moving to college and getting food from the dining facilities? | In high school I never had to think about the food that I had to eat because my mom always made dinner for me and then lunch I never really had to think about it. And so now I have to think about the foods that I'm eating. I think that's the biggest change/transition. | 7) People |
| 14.3 | Nicole | Was there anytime that you were able to go to the cabinet or fridge and get what you wanted and how did you choose your foods then? | Ya, I didn't think about eating healthy as much in high school just because I ate fruits and vegetables at lunch and mom had fruits and vegetables at dinner so it wasn't that important to factor it in myself. So cookies, stuff like that for snacks. Sometime grapes, lots of grapes. Depended on the day. | 7) People |

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|---|-------|--|--|-----------|
| 3 | Emily | How does what you know about food and nutrition affect your food decisions that you make at the dining facilities? | Well it sometimes affects me because I that if my mom was here she would be like don't eat sugar every single day and don't like get candy bars every single meal. | 7) People |
|---|-------|--|--|-----------|

Appendix E: Mind Map of Factors, Themes, and Subthemes

