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Experiences of College Freshmen Women Who Eat in a Social Environment

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2020

Abstract

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MS, University of New Hampshire, 2015

MS, University of Michigan, 2011

BS, Norwich University, 2010

Dissertation Submitted in Partial Fulfillment

of the Requirements for the Degree of

Doctor of Philosophy

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Abstract

The social cognitive theory suggests that social surroundings influence health behaviors, and social modeling literature supports that eating behaviors are influenced by social norms. Eating decisions are especially vulnerable to social influence during the transition to college, although current interventions do not address social influence in the context of the eating environment itself or consider how men and women may experience this environment differently. This generic qualitative study explored how freshmen women perceived their experiences eating in a cafeteria setting. The research questions investigated freshmen women's perceptions about social influence on self-efficacy, self-regulation, outcome expectations, and modeling of normative information during mealtime in the cafeteria. A purposeful sample of 13 freshmen women non-health majors who lived on campus at a small liberal arts college were interviewed. Inductive coding founded in social cognitive theory and social norms constructs guided thematic analysis. Developing themes were assessed in light of original data and triangulated using direct observations and reflexive memos. Friends were valued as a source of support and increased self-efficacy, facilitating self-regulation and identification of outcome expectations through modeling of descriptive norms. The larger social environment increased fear of judgement, decreased self-efficacy, and lowered prioritization of self-regulation and outcome expectations. These findings can be used by campus stakeholders to help facilitate health promotion strategies on campus that create positive social change by facilitating social support for freshmen women in the cafeteria and empowering them to develop healthy behaviors in a vulnerable and uncomfortable social environment.

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Dedication

This dissertation is dedicated to the most important women in my life: to my mother, who modeled what it means to be a strong, articulate, kind woman; to my sister, who continues to teach me how to be passionate and fight for what I believe in; to my daughter, who has taught me patience and a new depth of love. Because of you, I have hope. For you, I want to contribute to the creation of a better world.

Acknowledgments

I would like to thank my husband and my parents for their consistent support throughout this journey. My husband's dedication to our daughter, family, and home has allowed me to spend countless uninterrupted hours on this work. My Mom and Dad are, and have always been my greatest cheerleaders, and have helped tremendously with childcare as well. Together, they are the backbone of my success. I would also like to thank Dr. Holly Godwin and Dr. Lara Latimer who provided incredible guidance throughout the evolution of my writing and research. Finally, I would like to acknowledge the critical role of Dr. Michael McGinnis, Dr. Amy Welch, Dr. Addie Armstrong, and Kim Healy in providing encouragement, advice, and resources throughout the dissertation process.

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Chapter 1: Introduction to the Study

Introduction

Health behaviors change in college (Hilger, Loerbroks, & Diehl, 2017) and tend to persist into later adulthood, potentially influencing acute health as well as chronic disease risk (Plotnikoff et al., 2015). These behavior changes may be partially explained by increased individual autonomy and changes in the social environment. Indeed, many quantitative studies have suggested that college students model their eating behaviors after their eating companions and that this phenomenon is fairly stable, even if students are unfamiliar with their eating partners or are eating different types of foods (Kaisari & Higgs, 2015). Despite this evidence, most studies have attempted to control the eating environment, leaving a lack of clarity in understanding how the natural social setting during college influences eating choices. This information is valuable in understanding how best to address the social causes of poor eating behaviors in college students and promote the development of short- and long-term healthy eating behaviors in this population. In this chapter, I introduce the problem of social influence on eating behaviors in college students and identify the gaps that exist in our understanding of this problem. I use this background to frame my research questions and tradition, as well as identify and explain the theoretical underpinnings of my research. I also set-up the scope and limitations of the study and provide insight into the significance of the findings.

Background

Recent evidence suggests that the transition to college is associated not only with weight gain (Darling, Fahrenkamp, Wilson, Karazsia, & Sato, 2017; de Vos et al., 2015;

Fedewa, Das, Evans, & Dishman, 2014), but also with changing eating habits, such as decreased intake of vegetables, fruits, and whole grains, and increased intake of sweets and fast foods (Hilger et al., 2017). Women are more likely to report barriers to healthy eating on college campuses (Wang, 2018), and cluster analysis of college students by health-related behaviors supports that freshmen women who live on campus are the most at risk for poor health behaviors such as decreased intake of vegetables, fruits, and whole grains (Colby et al., 2017). Further evaluation of the literature reveals that women may be more susceptible to social influence on eating behaviors. Meta-analytic data suggest that women are more likely to model their eating behaviors after those with whom they are eating (Vartanian, Spanos, Herman, & Polivy, 2015). Women are also more likely to be aware of situational cues when eating (Chansukree & Rungjindarat, 2017) and report that the social environment influences their eating choices (Das & Evans, 2014). This suggests the social environment during the transition to college may have an important impact on women's eating behaviors.

Social cognitive theory (SCT) suggests that there is a critical and reciprocal interaction between personal and environmental factors, and this interplay is important in driving eating behaviors. Self-efficacy is a key personal factor that drives behavior, and research suggests that interventions that are effective at increasing self-efficacy in choosing healthy dietary behaviors are often delivered in a social setting (Annesi, Howton, Johnson, & Porter, 2015; Bernardo et al., 2018; Ellis, Brown, Ramsay, & Falk, 2018; Johnson & Annessi, 2017;). There is also evidence to support that self-efficacy may mediate the relationship between social norms and vegetable intake, highlighting the

potential important interactions between self-efficacy and social environment. Additional studies have found that self-regulation of personal behaviors may (a) interact with self-efficacy (Sriramatr, Silalertdetkul, Wachirathanin, 2016), (b) positively influence dietary behaviors (Annesi et al., 2015; Ellis et al., 2018; Johnson & Annesi, 2017), and (c) be affected by social support (Kies, 2016) and collective social monitoring (Meng, Peng, Shin, & Chung, 2017). Another key construct, outcome expectations, may be situational based on descriptive or injunctive social norms (Meng et al., 2017), further illustrating an interaction between personal and social factors.

Although social influence may not always play a direct role in moderating eating behaviors, college women are likely to model their eating choices after relevant social norms (Vartanian et al., 2015). These social norms may be descriptive or injunctive, and are a potential source of social influence on eating behaviors such as snack or meal choices (Christie & Chen, 2018; Perry & Ciciurkaite, 2019; Perry, Ciciurkaite, Brady, & Garcia, 2016; Robinson & Field, 2015) and how much individuals choose to eat (Vartanian, Spanos, Herman, & Polivy, 2017). Social norms have the potential to influence these choices directly, or perhaps mediate eating behaviors by influencing self-efficacy, self-regulation, and outcome expectations.

Both social modeling and SCT literature support the relevance of social norms. However, most social modeling studies have attempted to control situations and measure modeling quantitatively (Stok, Mollen, Verkooijen, & Renner, 2018), losing sight of the relevance of the real eating environment. Additionally, SCT studies support the relevance of social factors, but have failed to address implementation within the eating setting.

These findings demonstrate a need to qualitatively understand the direct and indirect influences of social norms on eating behaviors in young women during the transition to college to understand how the experience of eating in a social setting influences eating choices and the development of behaviors. This information is critical if we are to develop adequate, gender-targeted programs that promote healthful eating behaviors on college campuses.

Problem Statement

Social environment affects eating behaviors in adolescents and college students (Banna, Buchthal, Delormier, Creed-Kanashiro, & Penny, 2016; Deliens, Clarys, De Bourdeaudhuij, & Deforche, 2014;), potentially through relevant social norms (Liu & Higgs, 2019; Perry et al., 2016; Plows et al., 2017; Schuz, Papadakis, & Ferguson, 2018). The transition to adolescence is associated with increased autonomy in dietary choices (Banna et al., 2016). The transition to college affords further autonomy in dietary choices (Morrell et al., 2014; Mueller et al., 2018) in the context of a changing social environment (Deliens et al., 2014). Hilger et al. (2017) found that eating behaviors change upon matriculation into a post-secondary institution, and that freshmen in college are a subgroup particularly predisposed to the barriers of healthy eating on a college campus. Further, college women may be vulnerable to the influences of the social environment because they are more likely than college men to model their behaviors after their eating companions (Wang, 2018). There is an identified need to address gender differences in eating behaviors (Mueller et al., 2018), and to qualitatively explore the influences of social pressures in the college eating environment from the perspective of

college students themselves (Sogari, Velez-Argumedo, Gomez, & Mora, 2018). My research addressed this gap in knowledge by exploring the perceptions and experiences of women college freshman who had recently transitioned into the college environment and frequently ate in the presence of peers. The findings could help to inform the development of comprehensive health promotion programs that are sensitive to gender-specific, socially driven eating behaviors on college campuses.

Purpose of the Study

The purpose of this general qualitative study was to explore perceptions of freshmen women to understand how eating behaviors in women are influenced by the transitioning social environment during freshmen year of college. College women tend to be more interested in health-moderating behaviors and the maintenance of overall health (Hilger et al., 2017; Plotnikoff et al., 2015; Wang, 2018) but are also more likely than college men to model their behaviors after others (Motteli, Siegrist, & Keller, 2017) and perceive that maintaining healthy behaviors is difficult in an on-campus environment (Wang, 2018). This suggests that the desire to maintain health in college women is juxtaposed with significant perceived barriers to health-supporting behaviors. Understanding how the cafeteria-based social setting influences eating behaviors of women during the transition to personal autonomy is important to help clarify the role of the social environment and social support in the development of both short- and long-term health-related behaviors. It has been suggested that health promotion efforts focused on dietary behaviors in college students may need to address specific gender differences in perceived barriers and eating behaviors (Mueller et al., 2018), and this research can

help guide the development of interventions that promote healthy eating behaviors in women, based on their specific experiences.

Research Questions

1. RQ1: What are the perceptions of freshmen women about how the social environment influences their eating behaviors on a college campus?
2. RQ2: What are the perceptions of freshmen women about how social norms influence their eating behaviors during a meal in the cafeteria?
3. RQ3: What are the perceptions of freshmen women about how the social environment influences their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors?
4. RQ4: What are the perceptions of freshmen women about how their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors influence their susceptibility to the social environment?

Conceptual Framework

This research aimed to address the phenomenon of social influence on eating behaviors and was grounded in a social lens that consisted of theoretical underpinnings from social modeling of eating and the SCT. Social modeling was first considered in the context of eating behaviors in the 1970s by Nisbett and Storms, who described their accounts of social influence on eating behaviors in a psychology textbook (Cruwys, Bevelander, & Hermans, 2015). Current data on social modeling of eating suggest that individuals will mimic eating patterns they perceive to be socially acceptable, based on relevant social norms (Higgs & Thomas, 2016). These norms can be based on what others

are doing, described as descriptive norms, or based on the perceptions of what others value as acceptable, referred to as injunctive norms (Stok, de Vet, de Ridder, & de Wit, 2016). Although there is ample evidence to suggest that descriptive norms have a powerful influence on eating behaviors within controlled settings (Christie & Chen, 2018; Kaisari & Higgs, 2015; Perry & Ciciurkaite, 2019; Perry et al., 2016; Robinson, Thomas, Aveyard, & Higgs, 2014; Robinson & Field, 2015), it may also be important to consider the influence of injunctive norms, in light of evidence suggesting that individuals often model the norms that present the most relevant cues about appropriate behavior (Schuz et al., 2018). Furthermore, it is likely important to consider situational characteristics, such as the proximity of the norm referent group and how the closeness of eating partners influences eating choices (Liu & Higgs, 2019; Perry et al., 2016; Plows et al., 2017).

In this study, social modeling was considered in the context of the SCT. Bandura originally proposed the SCT in 1986 as an extension of the social learning theory, and this framework suggests that behavior is a result of reciprocal interactions between cognitive, environmental, and behavioral determinants (Bandura, 1989). In 2004, Bandura explicated how he envisioned the SCT could be applied to health education and promotion efforts. He identified key constructs to be knowledge, self-efficacy, outcome expectations, self-regulation, and barriers and facilitators, and explained that these constructs were important to achieve healthy behaviors and were influenced by environmental as well as individual determinants (Bandura, 2004). One key environmental determinant in the application of the SCT is the social environment, which can provide opportunities for support and learning via observation, which is similar to

social modeling. Both of these social outcomes have the ability to influence individuals' outcome expectations, knowledge, self-efficacy, barriers and facilitators to proper eating behaviors, and self-regulatory behaviors (Bandura, 2004). It is therefore not enough to seek to understand social modeling, but to understand the other social cognitive determinants that may facilitate modeling of eating behaviors. The importance of social norms on modeling of eating behaviors and the interaction of these norms with social cognitive determinants were focal points of the research questions for this study. Furthermore, these theoretical foundations together with the research questions reflected the need to understand how college women experience the eating environment to best understand how that social environment interacts with social cognitive factors to affect eating behaviors. The importance of understanding the experiences of these women was a key underlying factor promoting the need for this qualitative study grounded in social constructionism. I provide a more in-depth review of the current state of the literature on these theoretical models in Chapter 2.

Nature of the Study

This study was qualitative in nature and followed a general, pragmatic qualitative approach. The philosophical underpinnings of this approach support the need to understand experiences and outcomes related to real-world problems to help provide practical insights important in addressing such issues (Patton, 2015). Focusing on freshmen women's experiences eating in a social environment helped to provide a deeper understanding of how social influences affect eating behaviors in a college cafeteria, a real-world concern that may contribute to persistent poor eating habits and increased

chronic disease risk (Morrell et al., 2014; Patton, 2015). Semistructured interviews were the main source of data, based on their alignment with the exploratory nature of the current study, which sought to explore perceptions in the context of a very specific type of experience (DeJonckheere & Vaughn, 2019). The semistructured and open-ended nature of this method allowed me to encourage open and honest sharing while probing for further depth when necessary (Moser & Korstjens, 2018). Data were analyzed thematically based on the alignment of thematic analysis with inductive thematic discovery founded in social constructionist and theoretical underpinnings (Braun & Clarke, 2006).

Definitions

I operationalized the following terms in the context of this study to increase clarity and alignment.

Self-efficacy: a young woman's belief in her ability to exercise control of or be in charge of her own eating habits (Bandura, 2004).

Self-regulation: a young woman's personal process of self-evaluation of eating behaviors that gives meaning to those behaviors (Bandura, 2004). Often, this comes in the form of personal goals that put eating in the context of personal values and provide incentives and motivation for attaining certain behaviors (Bandura, 2004). Although these goals may be personal, they are often influenced by social and cultural influences (Bandura, 2004).

Outcome expectations: the outcomes that young women expect to be associated with their eating behaviors. These could be personal outcomes such as physical

enjoyment of food or weight loss. They could also be social outcomes, such as approval or disapproval from others whose relationships are valued by the individual (Bandura, 2004).

Descriptive social norms: standards created by the social environment that reflect what others are doing at meals (Stok et al., 2016). This includes what, how much, and when eating partners are eating, as well as what and how much those in the surrounding environment (i.e., the cafeteria) are eating. These standards usually provide informational guidance about appropriate eating behaviors (Stok et al., 2018).

Injunctive social norms: standards created by the social environment that reflect what eating behaviors others think are appropriate (Stok et al., 2016). This may include perceived level of acceptance or judgement of eating behaviors stemming from direct eating partners or those in the surrounding eating environment (i.e., the cafeteria). These standards are thought to provide normative guidance about appropriate eating behaviors (Stok et al., 2018).

Social influence: the effect of the surrounding social environment on the decisions of young women regarding their eating choices and behaviors (Cruwys et al., 2015).

Social environment: This term is being operationalized as a two-tiered system that affects women while they are eating. The first tier is direct eating partners, or those people that young women choose to converse and engage with while they are eating (Cruwys et al., 2015). The second tier is the larger environment, the cafeteria, that young women are eating in (Christie & Chen, 2018). This includes the people that they interact

with during food selection, as well as the people that are surrounding them but not engaging directly with them, during mealtime.

Assumptions

A key assumption based on the nature of the qualitative research was that participants were honest throughout the process. This included assumptions that they were honest about inclusion criteria regarding their age, living status, on-campus eating patterns, and major. In addition, it was assumed that participants were honest about their experiences with eating in the cafeteria and the influence that friends and the larger social environment had on their eating choices. Finally, for the purpose of triangulation and data credibility, I conducted member checks using verbatim transcripts. I assumed that participants were honest in their choice not to send feedback due to their agreement with their original responses. These assumptions were important to protect the autonomy of participants and develop mutual respect between researcher and participants.

Scope and Delimitations

The scope of this study was focused on young women who lived on a small, rural military campus during their freshman year of college. It has been suggested that young adults (Stok et al., 2018), and particularly women (Vartanian et al., 2015), are most susceptible to peer influence on personal behaviors, and the transition to college may be a particularly vulnerable time (Hilger et al., 2017), which supports the decision to focus this study on freshmen women. I teach at the partner institution, which is a private undergraduate institution with military affiliations, and therefore had access to this population of women. Although the military aspect of the institution limited the

transferability of the study findings, one of the inclusion criteria for the study was civilian student status. Freshmen in the corps of cadets eat in strictly controlled settings, which is why they were excluded from the study. Even though the campus has the military component unlike most other small campuses, freshmen civilian students eat in a cafeteria setting that is much like that of other small colleges, with services provided by Sodexho, buffet-style food options, and community-style seating. These similarities allowed for reasonable transferability of experiences to other similar-sized college campuses.

In defining the scope, I chose social modeling and SCT as theoretical foundations. Social modeling is often based on perceived descriptive or injunctive social norms, and the SCT suggests that social outcome expectations can influence behavior and are driven by prevailing social norms (Glanz, Rimer, & Viswanath, 2015, p. 167). Although social norms provided a relevant focal point of this research, social norms theory itself was not chosen as a theoretical focus for several reasons. In practice, social norms theory is applied in a way that suggests individuals base their behaviors on misperceptions of descriptive and injunctive social norms, which may not always be true (Cislaghi & Heise, 2018). Indeed, based on research illustrating that BMI between friends tends to converge over time (Bruening et al., 2018), it may be that individuals are aligning their health behaviors with very real norms that are more important to address than purported misperceptions of the norms. Social norms theory also focuses on social norms as the driver of behavior, failing to adequately consider the relevance of other factors that may influence personal behavior (Cislaghi & Heise, 2018). As suggested by the SCT, there is

likely interaction of personal and environmental factors and social norms theory does not clearly address those other factors. Moreover, social norms theory does not identify a clear distinction between the prevalence of social norms and their actual influence or consider that social norms may have an indirect rather than a leading role in driving personal behaviors (Cislaghi & Heise, 2018). It is certainly possible that individuals may identify their personal goals or self-efficacy as primary drivers of their behavior, but social norms may influence how they choose to identify their goals or how confident they feel in changing their behaviors. Together, these shortfalls suggested that social norms theory would not provide a broad enough theoretical lens to understand the personal and social interactions that occur at mealtime during this vulnerable transition for young women.

Limitations

Qualitative researchers working in adolescent and college populations and focusing on health-related behaviors have noted that generalizability is a critical limitation (Banna et al., 2016; Deliens et al., 2014; Sogari et al., 2018), often because samples are small and studies are conducted on only one campus, which may contribute to a lack of diversity within the sample (Ashton et al., 2015). These limitations applied to this research as well. In addition, focus on this campus may further influence generalizability due to the rather unique campus environment with a majority of students being male and wearing a military uniform as part of the corps of cadets. To address these limitations, civilian women were recruited to represent experiences that could more similarly represent experiences eating in an ad libitum environment during the transition

away from home at other small institutions. Additionally, participants were recruited beyond saturation and beyond the proposed number to support a more robust representation of diversity of experiences.

Furthermore, a key limitation in this type of qualitative work is often the probability of selection bias, leading to inclusion of participants who have an increased interest in personal health and may not reflect the perceptions, attitudes, or behaviors of the general college population (Deliens et al., 2014; Motelli, et al., 2017; Sogari et al., 2018). To address this potential shortcoming, I recruited non-health majors, although selection-bias may be difficult to tease out because of the inclusion of athletes in the study. Although freshmen athletes may have similar eating experiences to other freshmen women, they may also eat with a different group of people and have a pre-established interest in the maintenance of health from the perspective of sports performance. The methodological decision to include athletes was made to ensure an adequate participant pool was available. To address this bias, athlete status was considered and addressed during data analysis. It was identified that athlete status was not related to divergence from the developing thematic structure of the data.

There was an additional concern about bias associated with recruiting students at my own institution, which was managed by recruiting students outside of the majors that I teach. In addition, my experiences as an undergraduate student at the same institution several years ago introduced bias that may have influenced my expectations about participant experiences and my understanding and interpretation of the data. I maintained an active and reflexive awareness of these biases, which I recorded after every interview

and consistently throughout the transcription and data analysis process and referred back to on a frequent basis.

Additional barriers included recruitment of participants on a small college campus. The freshmen class used as the participant pool was smaller than the previous several classes, and the specificity of the study population together with the limited majors recruited to ensure the students were not my current or future students made it difficult to recruit an appropriate sample. This was exacerbated by recruiting during a pandemic. These barriers were navigated by using snowball sampling with participants and securing additional IRB approval to directly call potential participants for recruitment purposes.

Significance

College aged individuals are likely to model their eating behaviors around relevant perceived social norms (Stok et al., 2016). Despite a greater interest in maintaining health (Hilger, et al., 2017; Plotnikoff et al., 2015; Wang, 2018), women are more likely than men to model their eating behaviors after their meal companions (Liu & Higgs, 2019). Indeed, women are more likely to eat more healthfully and report a lower BMI when they eat with others who report a healthy diet (Motteli, et al., 2017). This research began to evaluate how social environments influence eating decisions and the evolution of eating behaviors in women during the transition to college. Although quantitative research suggests that social distractions and social presence influence decisions about eating (Bilman, van Kleef, & van Trijp, 2017), in this project I sought to explore the experiences of freshmen women to understand how the social environment

affects choices, behaviors, and the development of personal values in the context of the cafeteria eating environment. The results of this study help to put quantitative social eating studies in context by explaining how the social environment influences eating behaviors in women who reportedly experience significant barriers to healthy eating on college campuses (Wang, 2018).

This research has implications in the development of health education and promotion programs that focus on supporting healthy eating behaviors on small, rural college campuses. Review of theoretical underpinnings of nutrition interventions on college campuses highlights that an interaction of personal, environmental, and social aspects influences dietary behaviors in college students (Brace, De Andrade, & Finkelstein, 2018), suggesting the relevance of the social environment. These health promotion efforts do not clearly address how eating in a social environment itself may influence behaviors, or how it may influence adolescent men and women differently, despite evidence suggesting that health motivations (Plotnikoff et al., 2015), behaviors (Hilger et al., 2017), and perceived barriers (Wang, 2018) are different between men and women. Designing health education programs that more specifically address the eating environment as perceived by women and men separately may provide a more robust method of supporting positive social change by addressing relevant individual, social, and environmental factors that contribute to the development of positive eating behaviors. This positive social change will be important on the partner institution's campus by helping to influence the social environment and culture associated with eating through reinforcement of healthy eating behaviors and healthy eating relationships. The positive

social influence of well-targeted diet promotion programs may also be transferable to other small, liberal arts colleges where a large portion of students eat most meals in the cafeteria, although this may require additional exploration of how those students' experiences may be different than those of the students at the partner institution. In addition, diet promotion programs that support the development of healthy eating behaviors and eating relationships during the transition to college may help in the formation of a lasting and positive social impact by contributing to the development and reinforcement of acute and chronic health behaviors that withstand life and social transitions.

Summary

In this qualitative study, I took a pragmatic approach to address the gap in understanding about how the social environment, particularly social norms, influence eating behaviors in women who are in their freshmen year in college. The study was founded in social modeling and SCT and used semistructured interviews to help understand the experiences of freshmen women who ate most frequently in a cafeteria setting. The findings have begun to clarify how social norms may directly or indirectly influence eating choices in young women during their transition to autonomy and adulthood. Furthermore, the findings of this study may help inform the development of more effective, targeted interventions in support of healthy eating behaviors on college campuses. In the following chapter, I provide an in-depth review of the current literature to provide a comprehensive understanding of the state of knowledge and highlight the current gaps that will be addressed in this work.

Chapter 2: Literature Review

Introduction

The transition to college is associated with an evolution in living environment. Students who choose to live on campus are more likely to experience changes in the social environment and autonomy in personal behaviors (Deliens et al., 2014; Lambert, Chivers, & Farrington, 2019). These changes in environment likely contribute to changes in eating behaviors, such as intake of fruits, vegetables, fast food, and number of meals in a day (Hilger et al., 2017), potentially causing the weight gain that is seen during freshman year and beyond (de Vos et al., 2015). Additionally, behaviors established during college can persist beyond graduation (Morrell et al., 2014), increasing the likelihood of chronic health concerns later in adulthood.

The social environment is a critical component influencing eating behaviors in college students, as purported by the SCT (Bandura, 2004). Students are likely to model their behaviors after their eating companions. The literature supports that salient descriptive social norms provide a model of what is currently acceptable behavior, and that college students model eating behaviors based on those salient social norms. Interestingly, although college women tend to be more focused than college men on health-moderating behaviors and the maintenance of overall health (Hilger et al., 2017; Plotnikoff et al., 2015; Wang, 2018), they are also more likely to model their behaviors after others (Motteli et al., 2017) and perceive that maintaining healthy behaviors is difficult in an on-campus environment (Wang, 2018). The literature suggests that women are more susceptible than men to the influence of the social environment on eating

behaviors (Das & Evans, 2014; Vartanian et al., 2015), but that more targeted research is needed to better understand the perspectives of women and how to best target intervention strategies in a gender-specific manner. Additionally, the current research does not clearly address social modeling in the social eating environment itself, or how this phenomenon may influence self-efficacy and self-regulation of behaviors in and outside of the eating environment. The purpose of this research was to explore college women's perceptions about how the social environment influenced their eating behaviors. This study has provided some context on how the social environment may be addressed within the SCT framework, and how the SCT can better be applied to develop health promotion strategies targeted towards college women.

This literature review provides the context of the problem, highlighting relevant research that establishes the important evolutionary changes that happen during the transition to college. It also focuses on the importance of the changing social environment, which must be established as a rationale for using a social lens to address the problem. Next, I summarize the SCT in the context of eating and physical activity behaviors and interventions in the college setting. Specifically, I call attention to the lack of intentional focus on the social eating environment in current dietary applications of the SCT, and the importance of observational learning or social modeling as a key construct. I provide a review of current literature on social modeling of social norms followed by a rationale for the need to focus on freshmen women and use a qualitative approach to address this problem. Finally, I explicate how the current research was an attempt to fill relevant gaps identified throughout the review.

Literature Search Strategy

I organized my literature search to locate the most recent and relevant work about eating behaviors in college students. I used two main databases through the Walden University library, including CINAHL + Medline through the Health Sciences Library and PsycInfo through the Psychology Library. Every search was conducted in both databases and limited to a publication date of 2015 or later. I used a three-term search method that focused on eating behaviors (using one of the terms *eating behaviors*, *eating*, *nutrition*, *diet*, and *food*), college students (using the term *college students*), and the additional concepts of focus (using one of the terms *transition*, *freshman*, *social cognitive theory*, *social cognitive*, *social support*, *observational learning*, *self-efficacy*, *social modeling*, *behavioral modeling*, *social norms*, *injunctive norms*, and *descriptive norms*). I also conducted citation chaining of all relevant articles published after 2016 and used the "cited in" function within Google Scholar to locate recent works that have cited studies I found to be particularly relevant to my work. By the last several database searches and upon citation chaining approximately 50 articles, I was not identifying any new studies that were relevant.

Transition to College

The transition to college is accompanied by many changes that may influence eating behaviors. Despite data to support that the majority of incoming freshman are concerned about weight gain and maintaining a healthy diet (Monroe et al., 2017), other findings suggest that weight increases significantly during the first year of college (Darling et al., 2017; de Vos et al., 2015; Fedewa et al., 2014) and beyond (Fedewa et al.,

2014). Young adults who move away from home to attend college are faced with a new living environment that has been shown to increase weight gain compared to those who live at home during their college years (de Vos et al., 2015). This move away from home is often accompanied by living with peers, which has been recognized as an important contributor to eating behaviors (Deliens et al., 2014; Lambert et al., 2019). Although parental influence is still perceived as important during the transition to college (Deliens et al., 2014; Dhillon et al., 2019; Sogari et al., 2018), there is a range of relevant social factors that evolve during this transition, including a shift in normative beliefs around food (Dhillon et al., 2019), eating more frequently in the presence of peers (Lambert et al., 2019; Sogari et al., 2018;), and changes in peer influence (Das & Evans, 2014; Lambert et al., 2019; Sogari et al., 2018).

The transition to college is associated with a change in the living environment, but there is also an increased level of autonomy in health behaviors juxtaposed with an increase in perceived stress during this time. Undergraduates have reported feeling increased autonomy and the need to be self-dependent in their health behaviors (Deliens et al., 2014; Dhillon et al., 2019). Data also suggest that stress increases during the transition to college (Hootman, Guertin, & Cassano, 2018) and is associated with altered eating behaviors (Byrd-Bredbenner, Quick, Koenings, Martin-Biggers, & Kattelmann, 2016; Lyzwinski, Caffery, Bambling, & Edirippulige, 2018; Papier, Ahmed, Lee, & Wiseman, 2015; Wilson, Darling, Fahrenkamp, D'Auria, & Sato, 2015) and changes in body composition (Hootman et al., 2018). College students have reported that they are less confident in their ability to eat a healthy diet when school is in session (Mann &

Blotnicky, 2016), suggesting that this new environment may play an important role in eating behaviors.

Evolving Eating Behaviors

Although it is well established that the college transition is associated with weight gain, the mechanisms driving this change have drawn more recent attention. The behaviors and habits that contribute to weight gain during college are of critical concern because they may persist and increase the risk of developing chronic health conditions later in life (Plotnikoff et al., 2015). There is empirical evidence to support that the transition to college is associated with an evolution of eating behaviors, specifically. Hilger et al. (2017) found that the majority of college students self-reported that their eating behaviors had changed since the start of college. Further analysis of these data highlights that the greatest changes in eating behaviors occurred in students living on campus (Hilger et al., 2017), a change that qualitative studies have identified is a critical barrier for college students' healthy eating (Das et al., 2014; Deliens et al., 2014; Lambert et al., 2019). These findings further suggest that freshmen are especially vulnerable to changes in eating behaviors, and there is a need to more clearly understand why college students' eating behaviors are changing during this life transition in order to better support their health needs (Hilger et al., 2017).

A variety of dietary changes have been reported in college students. Hilger et al. (2017) found that more than half of students surveyed reported that they changed intake of vegetables, fruits, whole grains, meat, fish, sweets, fast food, and number of regular meals since starting college. Colby et al. (2017) used cluster analysis by health behaviors

in college students and found that men and women in the health behavior cluster consumed significantly more whole grains and fruits and vegetables than those in the at-risk cluster. In addition, men and women classified in the health behavior cluster consumed significantly fewer calories from sugar-sweetened beverages, and a significantly smaller percentage of calories from fat (Colby et al., 2017). At-risk women were also more likely to live on campus and be freshmen (Colby et al., 2017). Sprake et al. (2018) identified four common dietary patterns among undergraduates and found that younger students were the least likely to follow what was identified as the health-conscious pattern, which was the most nutrient-dense and associated with the most health-promoting foods. Third year students and those who self-reported high levels of physical activity were the most likely to follow the health-conscious diet pattern (Sprake et al., 2018). Brewis, Brennhofer, van Woerden, and Bruening (2016) reported that the majority of freshmen students living on campus consumed more convenience and prepared foods than homemade foods and ate below the recommended amount of fruits and vegetables. Together these data suggest that not only do eating behaviors evolve through college, but the transition to living on a college campus may be associated with the greatest difficulty in identifying and adjusting eating behaviors appropriately.

Evolving Social Environment

Dietary patterns and changes are likely due to a variety of reasons associated with the transitions that occur during college, including parental influence changes, facilitating new autonomy (Deliens et al., 2014; Dhillon et al., 2019) and reconstruction of eating behaviors (Gram, Hogg, Blichfeldt, & MacLaran, 2015). Although parental eating habits

and previously established norms based on the at-home eating culture are still perceived as important to college students (Deliens et al., 2014; Dhillon et al., 2019; Sogari et al., 2018), there is also a shift in responsibility and agency to make personal eating choices (Dhillon et al., 2019).

It has been suggested that the beginning of adolescence is the most vulnerable period for social influence (Blakemore & Mills, 2014); however, Martin, Villanueva, Stephano, Franz, and Ochsner (2018) found that transitioning adolescents between 10 and 14 years of age and young adults between 18 and 22 years of age showed no differences in social conformity of food preferences. Furthermore, young adults exhibited more cravings and evaluated foods more positively than adolescents (Martin et al., 2018), suggesting that not only are young adults vulnerable to social influence on eating behaviors, but they may also be more likely to exhibit eating behaviors that undermine health. Young adults aged 12-20 were also more likely to associate healthy foods with family, and snacking and unhealthy foods with friends (Guidetti, Cavazza, & Graziani, 2014). Additionally, when primed to relate to an older reference person, college students were more likely to report social norms in support of eating five fruits and vegetables pers day, as well as stronger intentions and supporting behaviors, compared to priming with a similar peer (Tarrant, Khan, & Qin, 2015). These findings are of particular concern because of the transitioning social environment associated with going to college (Martin et al., 2018), suggesting that students are eating more frequently in the presence of peers and friends, whom they associate with snacking and unhealthy foods, and whose influence they are vulnerable to.

Most qualitative findings have highlighted that living and eating with friends is perceived as an important influencer of eating behaviors in college students (Das et al., 2014; Deliens et al., 2014; Kabir, Miah, & Islam, 2018; Lambert et al., 2019; Sogari et al., 2018). Longitudinal research has found that with time, college students mirrored BMI of friends such that having friends with a higher BMI was more likely to cause increases in BMI than when reported friends had a similar or lower BMI (Bruening et al., 2018). Additionally, those who had a reported BMI of 22-26 kg/m^2 were more likely to be identified as friends by others compared to those with BMIs below 19 kg/m^2 or above 26 kg/m^2, and also more likely to experience increases in BMI to converge with the BMI of their friends (Bruening et al., 2018). These findings somewhat conflict with others, who have found that an increase in the number of close friends during freshman year predicted healthier diet and positive health 2-3 years later, as measured by the Healthy Eating Index and the general health subscale of the Short Form Health Survey, respectively (Klaiber, Whillans, & Chen, 2018). Further analyses indicated that this relationship was mediated by self-reported feelings of social support (Klaiber et al., 2018), which suggests that social influence can have a positive effect on health if it facilitates increases in perceived social support. This is supported by data from Harmon, Forthofer, Bantum, and Nigg (2016) illustrating that college students self-report their significant others as having the most influential impact on their dietary choices. These findings may be a result of the closeness within relationships, which was not conceptualized by Bruening et al. (2018). Together, these studies suggest that the influence of the social environment may be important on multiple levels. Although college students may tend to experience increases

in BMI to mirror their social networks, close friends or significant others can facilitate social support and increases in healthy behavior. It may therefore be important to consider the types of social influence and social support that students experience when they are making eating decisions and how those may affect the choices being made, especially during the transition to college.

Although it may be compelling to believe that the link between social influence and eating behaviors is tied to body image, this may not fully explain the impact of the social environment. Qualitative findings support that when college students are with friends, they want to practice unhealthy eating behaviors, despite recognizing the desire to emulate behaviors of those they perceive to have superior health (Sogari et al., 2018). This is important to consider, because despite reports suggesting American college students value weight satisfaction as a motive for food choice (Pearcey & Zhan, 2018), other findings suggest weight-related stigma is not associated with eating behaviors (Brewis et al., 2016). Additionally, college students have been found to model healthy and unhealthy eating behaviors after peers, regardless of the weight status of the reference person (Robinson, Sharps, Price, & Dallas, 2014; Stel & van Koningsbruggen, 2015). The relevance of the acute social environment is likely critical to eating behaviors and choices in college students and needs to be considered.

Theoretical and Conceptual Underpinnings

There is robust evidence supporting the important influence of the evolving social environment on young adults during the transition to college. Data promote the idea that social factors have relevant interpersonal influence on eating behaviors, notwithstanding

the various cultural differences between the various populations that have been studied. Undergraduate students in Bangladesh reported that peer influence, social networks, and social norms influenced their eating behaviors (Kabir et al., 2018). European students identified norms, values, social support, peer pressure, and living with other students as relevant factors (Deliens et al., 2014). Australian students described the importance of their living situations and peer influence on eating behaviors (Lambert et al., 2019). Similarly, students in the United States expressed the important influence of friends, parents, media, and social media on their eating behaviors (Sogari et al., 2018). Students of various ages and cultural backgrounds have reported the relevant influence of the social environment on eating behaviors during the college experience, suggesting that approaching the problem with a social lens may be necessary in understanding the complexity of eating behaviors in this population. Although this body of research supports that there may be a connection between social factors and eating behaviors, to my knowledge there has been no research to address the mechanisms through which the social environment influences eating behaviors. This study addressed this gap by focusing on how eating in a social environment influences eating behaviors, and was based on theoretical constructs represented in SCT and social modeling.

Social Cognitive Theory

The SCT was originally proposed by Bandura in 1986, and later suggested as an important model for the design and implementation of health promotion programs (Bandura, 2004). The model itself focuses on the interpersonal level, and operates under the key construct of reciprocal determinism, suggesting that personal, behavioral, and

environmental factors all interact and influence one another (Bandura, 1989). Additionally, Bandura (2004) proposed five key constructs of the SCT that are critical in its application to health education practice: (a) knowledge of relevant risks and benefits; (b) self-efficacy, or confidence in the ability to practice a behavior; (c) outcome expectations, which can be physical, social, or self-focused; (d) goals which can be proximal or distal and require self-regulation and monitoring; and (e) barriers and facilitators to health behaviors which can be personal or environmental. Each of these constructs illustrate how behavior, cognition, and environment interact, and focus on these constructs requires an awareness of how each area influences and is influenced by the others.

Since Bandura (2004) proposed the use of SCT in health promotion, it has been applied as a guiding framework for programs aimed to promote positive eating behaviors in college students. In a recent systematic review of nutrition interventions implemented on college campuses in the United States, Brace et al. (2018) noted that SCT was the most frequently applied framework to promote healthy nutrition. Furthermore, they acknowledged that based on their findings, promoting self-efficacy and self-monitoring are critical to effective interventions in college populations (Brace et al., 2018). This supports Bandura's (2004) initial proposition that self-efficacy is foundational to behavior change, and that short- and long-term personal goals are often the root of self-evaluation and motivation. Pember and Knowlden (2017) conducted a similar systematic review of dietary interventions on college campuses and also suggested the importance of self-regulation, but highlighted the importance of knowledge and a lack of attention in

existing programs to social groups, social norms, and social support. Bandura (2004) pointed out that knowledge is a core determinant, because without knowledge of the problem or how to fix it, change is out of reach. He further suggested that social norms may serve to inform outcome expectations and the social setting and social support could serve as perceived facilitators or barriers to healthy behaviors (Bandura, 2004).

Knowledge. Bandura (2004) described knowledge as a necessary precondition for behavior change, suggesting that those who do not know how behaviors influence health will not have a foundation to encourage change. It has been reported that knowledge of healthy nutrition practices may be sufficient in college students, but does not necessarily predict healthy eating behaviors (Mann & Blotnicky, 2016). In a study assessing the predictors of calcium intake, there was no difference in knowledge about calcium-containing foods or calcium recommendations between low- and high-calcium consumers (Kim & Kim, 2015). Additionally, despite health science students reporting higher nutrition knowledge than students of other majors, and students who had taken a foods and nutrition class reporting higher nutrition knowledge than others, there was no significant difference in the ability of these groups to accurately identify nutrition guidelines (Matthews, Doerr, & Dworatzek, 2016). These data suggest that although knowledge of healthy eating behaviors may be important, there is a baseline level of nutrition knowledge that does not differ among college students and is inadequate to inspire behavior change. This is supported by the outcomes of an SCT-based intervention in which cooking classes resulted in increased self-efficacy and healthy eating behaviors but did not create any significant changes in cooking-related knowledge (Bernardo et al.,

2018).

It is reasonable to consider that knowledge about nutrition and health is necessary, however, it may already be sufficient enough in college students to serve as a preliminary support system for change. It may also be reasonable that other SCT constructs such as social support and observational learning may moderate the relationship between knowledge and behavior such that in the presence of others, knowledge becomes a less important predictor of behavior. Mann and Blotnicky (2016) found that nutrition knowledge was an important influencer of fruit and vegetable intake; however, Bernardo et al. (2018) found that college students in a group program with observational learning and social support did not experience a significant change in knowledge despite reporting (a) an increase in self-efficacy cooking with produce, (b) an increase in self-efficacy consuming produce, (c) a decrease in intake of fast foods, and (d) a decrease in frequency eating at snack bars. Based on these findings, knowledge may be foundational but have a minimal influence on eating behaviors in a social setting.

Self-efficacy. To promote behavior change at the individual level, Bandura (2004) suggested that one must have confidence that they have control over such behaviors and can therefore effectively adapt them. Self-efficacy is significantly associated with eating behaviors (Kim & Kim, 2015; Chansukree & Rungjindarat, 2017). Furthermore, self-efficacy is an important predictor of eating behaviors. Data suggest that self-efficacy is correlated with fruit and vegetable intake of adolescents (Pedersen, Gronhoj, & Thogersen, 2015) and predicts fruit and vegetable intake of college students (Odum & Xu, 2018). Although Mann and Blotnicky (2016) did not find that self-efficacy had a

positive influence on fruit and vegetable intake of college students, they did find that it had an important influence on meat intake, another marker of diet quality. Although these findings are seemingly contradictory, Mann and Blotnicky (2016) developed novel scales to assess influence of several SCT constructs on eating behaviors; therefore, their results may be difficult to interpret among the predictive relationships shown by others. These data do, however, support a link between self-efficacy and diet quality, suggesting there is consistency in the link between self-efficacy and eating behaviors.

Adding to the evidence base supporting a link between self-efficacy and eating behaviors, Bruce, Beech, Thorpe, Mincey, and Griffith (2017) found that those who consumed higher amounts of sugar-sweetened beverages and snacks reported lower self-efficacy in changing those behaviors. Additionally, those who tried more frequently to change dietary behaviors had lower self-efficacy in decreasing sugar-sweetened beverage and snack intake (Bruce et al., 2017). Self-efficacy to avoid high calorie foods and beverages was also reported to decrease with high stress levels (Matthews et al., 2016). Qualitative data support this critical link between self-efficacy and behavior in the context of behavior change. In a focus group setting, participants reflected that a lack of self-efficacy had the critical potential to undermine personal goals (Rankin et al., 2017). Together these data suggest that current behaviors, past experiences, and environment all contribute to self-efficacy.

Despite data implying that self-efficacy for nutrition-related behaviors is low in college students (Matthews et al., 2016), there is evidence that SCT-based interventions are effective at increasing nutrition-related self-efficacy. The Coach Approach is a

physical activity program based on SCT and self-efficacy and has been shown to increase exercise-related self-efficacy in college students, which the authors suggested may similarly apply to eating behaviors (Annesi et al., 2015). This approach has also been used longitudinally with the addition of nutrition classes, and results indicated increased self-efficacy for controlled eating that persisted after 6 months, despite a high attrition rate after 3 months (Johnson & Annesi, 2017). SCT-based cooking classes have been found to increase self-efficacy in cooking, which has been further associated with changes in food purchasing and fast food eating behaviors (Bernardo et al., 2018; Ellis et al., 2018).

An important factor to consider in the link between SCT-based interventions and increased self-efficacy is the social environment facilitated by these interventions. Although explicit mediating relationships have not been reported, likely because key outcomes of the social environment such as observational learning and social support have not been quantified, most interventions that have reported increased self-efficacy in diet and exercise behaviors have been delivered in a social setting (Annesi et al., 2015; Bernardo et al., 2018; Ellis et al., 2018; Johnson & Annessi, 2017). Marr and Wilcox (2015) reported that both self-efficacy and social support were mediators of the relationship between internal locus of control and fruit and vegetable intake in college students. Additionally, Stok, Verkooijen, de Ridder, de Wit, and de Vet (2014) reported that self-efficacy mediated the relationship between descriptive social norms and vegetable intake in college students. These findings suggest an important interaction between the social environment and self-efficacy that needs further exploration. Based on

current findings, it is unclear if the social environment influences self-efficacy of eating behaviors, or if self-efficacy somehow influences the relationship between the social environment and eating behaviors.

Outcome expectations. Bandura (2004) described outcome expectations as an important construct that cuts across personal, behavioral, and social influences. These are frequently measured as positive outcomes that participants perceive will result from dietary behaviors. For example, Pedersen et al. (2015) measured outcome expectations associated with fruit and vegetable intake using seven items that ranged from personal benefit of fruit and vegetable intake ("I will be in better shape if I eat more fruit and vegetables") to social benefit ("My family will be pleased if I eat more fruit and vegetables"). Findings on the relationship between outcome expectations and eating behaviors have been mixed. In their study, Pedersen et al. (2015) found that outcome expectations are one of the key predictors of eating behaviors in adolescents who live at home. Chansukree and Rungjindarat (2017) conducted a study on college students and reported that although outcome expectations were not associated with healthy eating behaviors, they were highly valued as a reason for eating healthy. College women who have reported already practicing healthy behaviors have also reported higher outcome expectations than those who have not reported practicing healthy behaviors (Kim & Kim, 2015). Additionally, Sriramatr et al. (2016) found that self-efficacy was the most influential SCT construct on physical activity behaviors and its effect was partially mediated by outcome expectations. These data suggest that there may be a link between

outcome expectations and eating behaviors in college students, but that this relationship is somewhat complex and likely interacts with other key constructs to influence behavior.

What seems to be missing in the SCT literature is how studies account for the various types of outcome expectations that may influence eating behaviors. The social setting, social support, and social modeling may all influence how individuals perceive behaviors, their value, and their outcomes (Bandura, 2004), suggesting that studies should consider socially driven outcome expectations when assessing behavior. In a self-reported survey design, outcome expectations, self-efficacy, and parent behaviors were found to be the strongest predictors of adolescent dietary behavior and were all associated with increased adolescent intake of fruit and vegetables (Pedersen et al., 2015). Outcome expectations were measured using a series of seven questions, two of which inferred social outcomes (Pedersen et al., 2015). In the analysis, these questions were collapsed to represent the general construct of outcome expectations and then correlated with self-reported fruit and vegetable intake, which makes it hard to elucidate how various types of outcome expectations predicted behavior (Pedersen et al., 2015). Using self-reported survey data, Chansukree and Rungjindarat (2017) reported that college students outcome expectations were one of the most important individual determinants of healthy eating while situational factors and social support were the most important environmental factors, although it is unclear what type of outcome expectations were measured in this study. College students who tracked their fruit and vegetable intake online as part of a group were more likely to increase their own intake when their online group mates exhibited smaller, more consistent increases in fruit and vegetable intake, compared to

when their group mates reported larger, more considerable increases in fruit and vegetable intake (Meng et al., 2017). The authors hypothesized that the effect of model discrepancy, or the difference between their intake and that of their group mates, may have altered outcome expectations and made behavior change seem less achievable (Meng et al., 2017). Together, these results suggest the need to conceptualize socially driven outcome expectations because of the potential role the social environment may have in altering outcome expectations.

When considering the important influence of the social environment on outcome expectations, it may be critical to address how social variables may affect outcome expectations or mediate the relationship between outcome expectations and eating behaviors. Chansukree and Rungjindarat (2017) reported that although outcome expectations were an important personal determinant of eating behavior in college students, they were not one of the key determinants. Their data do suggest, however, that situations were a significant determinant in eating behavior (Chansukree & Rungjindarat, 2017), which is supported by the findings from Meng et al. (2017) that the situations facilitating social modeling may influence outcome expectations based on the behavior of the model. An understanding of college students' outcome expectations in the context of situational or social factors may help to clarify the relationship between outcome expectations and eating behaviors.

Goals and self-regulation. Review of health promotion programs focused on nutrition in colleges and universities in the United States suggests that SCT has been the most widely applied theory and that self-regulation is an important construct in the

application of the SCT (Brace et al., 2018). SCT-based interventions that have incorporated goal setting or self-regulation as a health promoting strategy have shown positive changes in dietary behaviors (Annesi et al., 2015; Ellis et al., 2018; Johnson & Annesi, 2017). Interventions that have measured self-regulation have found that increased self-regulation practices, such as goal setting and self-monitoring, have significantly predicted healthy behaviors, such as physical activity and eating behaviors (Annesi et al., 2015; Johnson & Annesi, 2017; Meng et al., 2017; Sriramatr et al., 2016). Qualitative studies have highlighted that college students value the importance of self-regulation and self-awareness in supporting healthy eating behaviors (Calamidas & Crowell, 2018).

Self-regulation further serves as a construct highlighting the interactions between person, behavior, and environment that is the foundation of the SCT. Data from Sriramatr et al. (2016) suggest that self-regulation partially mediates the relationship between self-efficacy and physical activity behaviors in undergraduate students, which illustrates the relationship between personal and behavioral components. College women have reported that receiving informational support, emotional support, and validation support from peers in an online environment is important in maintaining personal diet and physical activity goals (Kies, 2016), highlighting the interaction between behavior and environment. Interestingly, online self-monitoring of eating behaviors has been found to have a more significant impact on fruit and vegetable intake when it is done as part of a group, compared to when it is done individually (Meng et al., 2017). These data suggest that social support or social modeling may mediate the relationship between self-regulation and behavior change.

Observational learning. The literature that addresses SCT constructs highlights the importance of the social environment. Although not proposed as critical in the original application of the SCT to health promotion programs (Bandura, 2004), an additional construct that is part of the SCT and has been shown to be critical in health promotion efforts is observational learning or modeling. Researchers have found that college students' self-regulation efforts were more effective at increasing fruit and vegetable intake when they self-tracked in an online group setting, compared to an individual setting (Meng et al., 2017). Interventions that have offered the opportunity for students to observe and then practice cooking behaviors have been associated with increased self-efficacy in cooking skills and choosing healthier foods (Bernardo et al., 2018; Ellis et al., 2018). Additionally, it has been reported that observing others explain and reflect on their experiences with diet and stigma has been an effective way to change attitudes and behaviors (Humphrey, Clifford, & Morris, 2015). Humphrey et al. (2015) designed a course to promote intuitive eating and decrease self-esteem and stigma issues associated with diet and obesity. Observational learning was done by listening to the stories of others who were able to overcome stigma and become intuitive eaters, and the class effectively increased measures of intuitive eating and body esteem and decreased dieting behaviors and anti-fat attitudes (Humphrey et al., 2015). Other researchers have reported that situations were important and statistically significant predictors of healthy eating behaviors in undergraduates, particularly women (Chansukree & Rungjindarat, 2017), implying that momentarily relevant cues provided by a social eating environment are influential. Although these studies did not measure observational learning or its

impacts directly, the findings do support that modeling of behaviors is an important consideration in relationship to eating.

Qualitative and mixed methods studies that have applied the SCT to understand eating behaviors have further highlighted the importance of understanding the influence of observational learning on eating behaviors. When exploring the reasons for choosing to eat food purchased from vending machines, Ali, Jarrar, Abo-El-Enen, Shamsi, and Al Ashqar (2015) found that students often used the vending machines because that's what their friends and peers were doing at the time. Steeves et al. (2015) found that adolescent girls especially were likely to report making food choices based on modeling the behaviors of their friends or those they perceived as popular. Deliens et al. (2014) found that students suggested their food choices were influenced by living and eating in the presence of others. Rankin et al. (2017) reported that individuals who were considering using personalized nutrition services were concerned about social surroundings as a potential barrier to their success, because as they explained, being around others who are not following the same eating plan makes it difficult to choose and prepare appropriate foods. This makes individuals more likely to cite excuses and less likely to follow their eating plans (Rankin et al., 2017). In addition, these participants thought that doing the program with peers who were in the same situation would help to increase self-efficacy (Rankin et al., 2017), suggesting that social support itself is important from a modeling perspective. This is reinforced by findings from Deliens et al. (2014), who noted that students suggested that feelings of direct social support increased their attention to what they were eating. Social support can therefore be perceived as important from an

administrative perspective but also from a direct interaction perspective, indicating that it is easier to perform a behavior when an appropriate model is present.

Although these studies highlight the importance of observational learning, there are some key limitations to consider. Quantitative intervention studies have used observational learning as a strategy in the development of educational programs; however, there is a lack of data from SCT-based studies to identify when and how modeling occurs and is most relevant. As Pember and Knowlden (2017) noted, there has been a considerable lack of focus on the importance of the social environment in recent nutrition education programs. Although several programs based on the SCT framework have been implemented in a social setting, they have often failed to (a) clarify what social factors influence eating behaviors, (b) address social factors as a behavioral determinant, or (c) address social support and influence in the environment where eating occurs.

In the college setting, eating often occurs in the presence of others. As summarized above, qualitative studies founded in the SCT have noted that modeling eating behaviors of peers is a theme among adolescents and college students. Quantitative data have also highlighted an important interaction between modeling and other SCT constructs. For instance, college students' self-reported intentions to consume vegetables were modeled after normative information about vegetable intake of their peers and were mediated by self-efficacy (Stok, Verkooijen et al., 2014). Additionally, self-regulation of fruit and vegetable consumption was more effective when done in a group setting with models present (Meng et al., 2017). In a study focused on how SCT constructs and social norm modeling influenced fruit and vegetable intake in adolescents, results indicated that

parental behavior, personal self-efficacy, and personal outcome expectations were the strongest predictors of fruit and vegetable intake (Pederson et al., 2015), suggesting that social modeling may be influenced by other SCT constructs, although interactions were not addressed in this study. Despite these findings, which together indicate that social modeling may interact with other SCT constructs and depend on relevant cues, many SCT-based interventions have been delivered through education-based programs, which have facilitated modeling by providing a point of reference outside of the relevant eating environment. For example, Humphrey et al. (2015) provided models of individuals who had overcome eating disorders but presented those models in an educational setting. Based on the findings by Meng et al. (2017), modeling of behavior is likely to occur when the behavior occurs and depend on a salient point of reference, suggesting that modeling of eating behaviors may rely on social cues within the eating environment itself. This highlights a need to better understand the factors related to modeling in the eating environment and how the eating environment itself may promote modeling of eating behaviors. To address this, I also considered the social modeling literature and current mechanisms for social modeling in college students.

Social Modeling

It has been suggested that people seek information about appropriate eating behaviors when in the presence of others. This information can provide normative cues from which to model behavior and has a robust influence on adults and children (Cruwys et al., 2015). Nisbett and Storms were the first to study the effects of social modeling in the context of eating behaviors in the 1970s and evidence has continued to accumulate in

support of this phenomenon (Cruwys et al., 2015). Based on current literature, people can seek normative information from two key sources: observations of eating behaviors of others or observations of the current eating situation (Feeney, Pliner, Polivy, & Herman, 2017). Seeking information about eating behaviors may help to provide a guide for how to eat when appropriate behavior isn't apparent (Robinson, Thomas et al., 2014; Sharps & Robinson, 2017). Alternatively, eating behaviors may be driven by the desire to fit in, which motivates individuals to seek normative information about appropriate eating behaviors (Sharps & Robinson, 2017). Regardless of the mechanism, there is robust evidence illustrating that individuals model their eating behaviors after social influence, conforming to the eating behaviors of others (Cruwys et al., 2015; Vartanian et al., 2015).

There is evidence that college students model their snack (Perry et al., 2016; Perry & Ciciurkaite, 2019; Robinson & Field, 2015) and meal choices (Christie & Chen, 2018) based on salient social norms and the current social environment. Social modeling can influence the choice of high- or low-energy food options and the amount of high-energy options chosen (Robinson, Thomas et al., 2014). It can also influence the amount of food consumed even if the participant has been nutrient deprived (Vartanian et al., 2017), suggesting that social modeling may potentially override biological cues.

Modeling effects also occur despite food type or relationship with the norm-referent group. Kaisari and Higgs (2015) measured snack intake of participants who ate in the presence of one friend or one stranger and found that the modeling effect of snacking was strong. When participants were given the opportunity to consume a chocolate snack in the presence of others, their intake correlated strongly with the intake

of their eating companion, regardless of whether that companion was a friend or a stranger (Kaisari & Higgs, 2015). Furthermore, when participants were given the opportunity to eat with a friend, intake of the participant and the friend, measured by number of individual snack pieces eaten, was strongly correlated even when one friend was given a sweet chocolate snack while the other was given a savory cheddar snack similar in energy density (Kaisari & Higgs, 2015). Liu and Higgs (2019) used a remote confederate design to assess whether social identification with the group establishing the eating norm affected modeling of dietary behaviors. The researchers provided college women with fabricated normative information about previous cookie and vegetable intake of previous participants who were clearly identified as peers at the same institution (Liu & Higgs, 2019). Subsequently, the researchers measured cookie and vegetable intake of these women while they conducted a fictitious taste rating questionnaire (Liu & Higgs, 2019). Finally, they used questionnaires to assess how strongly the participants identified with their institution, which allowed them to analyze whether strength of identification with their peers influenced the modeling of cookie or vegetable intake. Results showed that modeling occurred for both cookie and vegetable intake based on the normative information provided, but there was no influence of peer identification on modeling of these eating behaviors (Liu & Higgs, 2019). Additionally, Christie and Chen (2018) found that in a cafeteria setting, modeling of main meal choices occurred when participants were unacquainted with the other people in line. Normative information may therefore be important in driving choice of food type and food amount for meals and snacks, and this reference information is a guide about appropriate or acceptable

behavior, regardless of who delivers it. Furthermore, these data suggest that modeling occurs at multiple points during an eating episode, including choosing food and actually consuming it.

The robust nature of this phenomenon is further supported by other studies that have used the remote confederate design, which have provided fabricated information about what previous participants have done to establish a salient social reference. This design has consistently illustrated that modeling occurs in the absence of co-eaters as long as there is normative information available. Robinson and Field (2015) measured cookie intake of college women who ate alone in the presence of normative information about past cookie eaters, and found that the number of cookies eaten by remote confederates had a significant influence on participant cookie intake. Robinson, Sharps, et al. (2014) conducted a similar study, but also provided information about the weight status of the remote confederates, and found that modeling occurred regardless of the reported weight status of the confederates, suggesting that the need for a normative benchmark is robust and may outweigh other normative information. Meta-analytic data suggest that the effect size of modeling is similar between studies that use a remote confederate design and studies that use a live confederate design (Vartanian et al., 2015), suggesting that a benchmark for appropriate behavior may be important for college students, especially when they are unsure about how to behave.

Although social modeling of eating behaviors is a robust phenomenon (Kaisari & Higgs, 2015; Vartanian et al., 2015), there is evidence to suggest that it is not perceived as a relevant or important factor contributing to eating behaviors. College women did not

identify external cues as important when defining factors associated with appropriate food intake (Vartanian, Herman, & Polivy, 2016). When posed as one of several reasons for eating, including hunger and available portions, eating based on social influence was valued as least appropriate (Spanos, Vartanian, Herman, & Polivy, 2015). Adults who have reported feeling that eating in response to social influence is appropriate have also been found to rate high in conformity and self-monitoring, suggesting they are generally concerned with social appropriateness and acceptance (Spanos et al., 2015). These findings further suggest that these individuals are more likely to recognize and acknowledge social influence on eating behaviors (Spanos et al., 2015), which aligns with their value of social acceptance. This is supported by data suggesting that those who are high social eaters are more likely to recognize social influence on their eating behaviors than those who are low social eaters (Spanos, Vartanian, Herman, & Polivy, 2014). Additionally, Konig, Giese, Stok, and Renner (2017) found that individuals mirrored their food intake after individuals they identified as popular regardless of the healthfulness of the food (Konig et al., 2017), which supports the importance of eating behaviors as part of the social experience. There is some conflicting evidence that those who reported not being influenced by socially normative information did not exhibit a significant modeling effect in a remote confederate design (Robinson & Field, 2015), although eating alone may make these results difficult to interpret. Despite the varying levels of willingness to acknowledge social influence on eating behaviors, there is evidence that modeling occurs in the presence or absence of awareness (Spanos et al., 2014). This begs a deeper understanding of why social modeling occurs.

Social norms. The most widely recognized mechanism for social modeling of eating is the presence of social norms, which provide salient information about what others do, think, or approve of (Stok et al., 2018). Social norms can be previously established, such as cultural norms or family norms, or momentarily relevant, such as those that represent the current situation (Schuz et al., 2018). These norms may drive social modeling through both information-seeking and approval-seeking behaviors. Feeney et al. (2017), found that women college students who were exposed to social norms regarding appropriate amount to eat modelled their behavior after the norm, such that when the situation suggested others were eating a small amount the participants ate significantly less, whereas when the situation suggested others were a large amount the participants ate significantly more. Furthermore, the social norm established in one eating trial persisted over subsequent eating episodes, even without normative information present (Feeney et al., 2017). These findings suggest that social norms serve as moderators of appropriate behavior even in the absence of a social environment.

Descriptive norms. There is a breadth of research to support the utility of descriptive social norms in driving eating behaviors. These norms, which provide information about what others are doing, help to provide a benchmark for what is appropriate, whether they are delivered directly or delivered indirectly. Nook and Zaki (2015) exposed college students to images of foods and had them rate personal preference. Immediately following their own valuations, participants were exposed to an apparent average of peers' valuations of those same foods, and then rerated their preferences. Results showed that descriptive information about peer preferences was

associated with significant modeling, and participants shifted their personal preferences in the direction of peer preferences (Nook & Zaki, 2015). Others have used a similar method (Martin et al., 2018; Templeton, Stanton, & Zaki, 2016) and reported modeling effects in both young adolescents and young, college-aged adults. Additionally, Templeton et al. (2016) found that exposing a group to healthy descriptive norms resulted in lower reported preferences for unhealthy foods three days after the original rating procedures. Together these studies illustrate that descriptive normative information is useful in changing self-reported preferences. Although this information is valuable, it has been proposed that reported intentions and attitudes do not always correspond with behaviors, especially when the behavior is popular and enjoyable (Sparkman & Walton, 2017), or when the behavior is susceptible to unintentional or reactive decision making (Jun & Arendt, 2016).

Although intentions may not be the best marker of behavior, there are further data to support a relationship between descriptive norms and actual food intake. In an attempt to assess how effectively social norms influenced fruit and vegetable intake in college students, Robinson, Fleming, and Higgs (2014) exposed students to messages about fruit and vegetable intake, either with a focus on what their peers were eating or with a focus on health benefits. Results indicated that those who self-reported low vegetable consumption chose more vegetables during an ad libitum lunch when exposed to the descriptive social norm message compared to when exposed to the health-focused message (Robinson, Fleming, et al., 2014). Similar results were found when observing purchasing of meals with vegetables after being exposed to descriptive norm versus

health-based messages (Collins et al., 2019). Additionally, those who were exposed to descriptive norms suggesting that peers were changing non-normative behaviors and consuming less meat exhibited both attitude and behavior change around meat consumption (Sparkman & Walton, 2017). Self-reported data about eating behaviors have linked perceived descriptive norms about intake of sugar-sweetened beverages and intake of fast foods by family, friends, and significant others to intake of sugar-sweetened beverages and intake of fast foods by young adults (Pelletier, Graham, & Laska, 2014). Additionally, researchers found that descriptive norms about fruit and vegetable intake of friends and significant others also predicted fruit and vegetable intake of young adults (Pelletier et al., 2014). These findings support that descriptive norms may have a robust influence on both attitude and behavior, which may be due to the importance of descriptive norms in making certain behaviors more salient. Sparkman and Walton (2017) suggested that salience of norms and behaviors is important, and people are likely to conform to behaviors that are ubiquitous and pleasant. Eating fruit and vegetables and avoiding meat intake are not necessarily salient practices, but intentional descriptive norm messages have been shown to alter intake behaviors of these foods, perhaps by making them appear more important.

There are likely several sources of descriptive norms, such as co-eaters, family, friends, or the local environment, and it is possible that the source of descriptive information is whichever may be most salient at the time. As remote confederate studies have shown, when eating in isolation, individuals model their behavior after the normative information provided (Robinson & Field, 2015; Robinson, Sharps, et al.,

2014), suggesting that the environmental cue is the most relevant source of appropriate dietary information at the time. Self-reported data on perceived influence in college students have illustrated that significant others are perceived to have the greatest influence on eating behaviors, followed by family, college friends, and finally high school friends (Harmon et al., 2016). In a study addressing the influence of descriptive social norms on vegetable intake, Stok, Verkooijen, et al. (2014) found that college students responded significantly more to descriptive norm messages when they reported a strong sense of identification with the source of normative information. This is further supported by findings from Wengreen, Nix, and Madden (2017), who reported that college students' skin carotenoid concentrations, a marker of fruit and vegetable intake, increased more over 8 weeks when they were provided descriptive information to indicate that peers at their institution consumed more fruit and vegetables than they did. Furthermore, self-reported descriptive norms reflecting higher peer intake frequency of sugar-sweetened beverages and sweet pastries was associated with increased personal intake of sugar-sweetened beverages and sweet pastries (Robinson, Otten, & Hermans, 2016). These findings corroborate the idea that identification with the source of the norm may be important to create a sense of norm salience. Additionally, the most relevant cues are coming from the groups that are perceived as important, although most of these studies did not address actual eating decisions made in a social environment.

It has been suggested that development of cultural norms and personal norms may have the capacity to influence modeling of social norms. Feeney et al. (2017) conducted research with college women to assess the strength of personal norms in the resistance of

modeling of eating behaviors based on descriptive social norms. Researchers had participants eat in the absence of social norms for one session, two sessions, or three sessions before eating in the presence of descriptive information about remote confederates (Feeney et al., 2017). The researchers then assessed how the time available to develop a personal norm influenced food intake (Feeney et al., 2017). Results indicated that those who ate alone more frequently before being exposed to the social norm were less likely to be influenced by the social norm and more likely to follow their own previously established personal behavior. The researchers also exposed participants to social norms in the first session then had them eat alone for subsequent sessions and found that the influence of the social norms persisted (Feeney et al., 2017), suggesting that the strength and value of personal norms may be overestimated by a laboratory environment where social norms are perceived as irrelevant. There are data from other studies to suggest that the strength of relevant personal norms may influence the modeling effect (Robinson, Thomas, et al., 2014). For example, studies used to assess modeling of descriptive norms regarding healthy foods such as fruit and vegetables have found no modeling effect for those who already exhibit habitual intake of fruit and vegetables (Robinson, Thomas, et al., 2014). When habitual intake was accounted for, however, low-consumers exhibited modeling effects that differed by experimental condition (Robinson, Thomas, et al., 2014), suggesting that when previously established norms align with salient norms, there is no need for social modeling. There is further evidence to suggest that within a family unit, the association between family members' BMI is moderated by personal susceptibility to social influence and frequency of family

eating (Perry & Ciciurkaite, 2019). This may indicate that greater frequency of eating with family or a particular social group leads to the development of group norms, which have a greater influence on those who are more susceptible to the social environment. It is possible, however, that the salience of social norms during meals is more relevant than (a) previously formed personal norms, (b) previously formed group norms, or (c) relationships with eating partners, which is why presence of strangers during a meal is enough to cause modeling behaviors. Although these findings suggest that personal norms and group norms may play a potential protective role, they also align with the presumption that norm salience is critical to drive modeling of eating behaviors. This idea further supports the need to understand the influence of descriptive norms and overall social influence in the environmental setting where eating actually occurs.

Although many studies have addressed descriptive norm modeling in the context of remote confederates or social networks, norm salience could be influenced by a broader context as well. Christie and Chen (2018) attempted to address social modeling of main dish choices in a college cafeteria. It has been suggested that main dishes are less vulnerable to modeling effects because they are more likely tied to personal values and cultural values (Cruwys et al., 2015). Christie and Chen (2018) recorded food selections of non-vegetarian, non-vegan participants between a meat-based and a vegetable-based option. The participants further recorded the food selection of the person in front of them as a marker of the descriptive norm and identified what influence the other person's food choice had over their personal food choice. Regardless of whether or not participants recorded that the person in front of them influenced their meal selection, there was

significant modeling of main dish after the descriptive norm established by the preceding person (Christie & Chen, 2018), suggesting that even in a natural setting, personality traits, personal norms, and group norms may not serve a strong enough protective role over salient social norms.

Descriptive norms may also persist, serving as a longitudinal source of information about appropriate behavior and influencing subsequent eating behaviors. Providing college women with information about pizza intake of remote confederates significantly predicted pizza intake immediately following exposure to the descriptive norm, as well as during three subsequent eating episodes over the following 3 days (Feeney et al., 2017). Exposing undergraduate students to descriptive norms about skin carotenoid concentration led to greater increases in fruit and vegetable intake over 8 weeks among participants who were made to believe their skin carotenoid concentration was in the bottom 20th percentile, compared to those who weren't given any normative information about skin carotenoid levels (Wengreen et al., 2017). Additionally, self-reported perceived descriptive norms were shown to significantly predict cake and pastry intake of college students at one-year follow-up, although this relationship was moderated by trait self-control and changes in perceived descriptive norms (Jones & Robinson, 2017). Together, these data highlight the potential persisting effect of descriptive peer norms for a few days up to one year. It is important to consider, however, that although descriptive norms may provide a persistent source of information about appropriate behavior, they may change over time, making it difficult to elucidate their longitudinal influence (Jones & Robinson, 2017). Additionally, studies focusing on

the persistent impact of descriptive norms have failed to address the social environment itself, which may play a considerable role in how descriptive norms influence acute eating behaviors.

Injunctive norms. Based on the current literature, it is unclear whether injunctive norms are relevant enough or strong enough to influence eating behaviors. These types of social norms are perceived by the individual and reflect what others think is appropriate. Despite a lack of data supporting their importance in health behaviors, injunctive norms are included in models of health behavior change that have been applied towards dietary behaviors, such as the theory of planned behavior (Jun & Arendt, 2016). Injunctive norms presuppose that individuals have conceptions of what others think and that they further value what others think as a good marker of how to behave. These may not always align with relevant descriptive norms that provide direct information about how others are behaving, and research tends to support that direct information about behavior is more valuable (Robinson, Thomas, et al., 2014).

Findings on perceived peer injunctive norms about healthy eating have been mixed. There is evidence to indicate that perceived injunctive norms about eating behaviors are associated with increased intentions to eat healthy and increased fruit and vegetable intake in adolescents (Stok, de Vet, et al., 2014). Researchers have reported that perceived injunctive norms encouraging healthy eating were found to predict higher fruit and vegetable intake and lower snack and sugar-sweetened beverage intake, while perceived injunctive norms discouraging unhealthy eating only predicted higher fruit and vegetable intake (Stok, de Vet, et al., 2014). Injunctive norm messaging was also more

effective at increasing vegetable intake in low consuming college students compared to descriptive norm messaging (Thomas et al., 2016). Furthermore, in their review of research manipulating injunctive norms, Stok et al. (2016) proposed that the strength of normative wording may moderate the influence of injunctive norms, such that softer words like *encourage* may have a more positive influence than stronger words like *should*. Perceived injunctive norms may therefore have value in predicting health behaviors in adolescents and young adults, but how the injunctive norms are perceived is relevant and likely to moderate the effect. Most of the research on injunctive norms has been based on self-reported data and has failed to measure food intake (Stok et al., 2016), so conclusions can only address correlation between reported perceived injunctive norms and food intake. Studies assessing the link between exposure to normative messages and subsequent behavior may be important in helping to understand the importance of injunctive norms.

To assess the effect of normative message exposure on dietary behaviors, some groups have exposed participants to different types of normative messaging or other messaging and measured intake after exposure. Robinson, Fleming, et al. (2014) exposed undergraduate students to either injunctive norm messages, descriptive norm messages, or health-based messages, and reported that low fruit and vegetable consumers were more likely to choose fruit and vegetables as a snack after being exposed to a descriptive norm message compared to after being exposed to an injunctive norm or a health-based message. Similarly, Stok, de Ridder, de Vet, and de Wit (2014) reported that adolescents exposed to injunctive norms had significantly lower intentions to consume fruit and no

change in actual fruit consumption, while adolescents exposed to descriptive norms had no change in intention but increased fruit consumption in the two days following message exposure. Staunton, Louis, Smith, Terry, and McDonald (2014) reported no effect of positive injunctive norms on healthy eating intentions in college students. Furthermore, Staunton et al. (2014) found that when college students were exposed to a positive injunctive norm in the presence of a negative descriptive norm, their intentions to eat healthy decreased. Together these data illustrate that although there may be a link between self-reported dietary behaviors and perceived injunctive norms, descriptive norms may be more salient and provide more meaningful, perhaps heuristic (Stok, de Ridder et al., 2014) guidance on appropriate action. Injunctive norms may have the opposite effect depending on how they are delivered; these norms may be perceived as a marker of others' judgements, leading to resistance based on the high value of autonomy in adolescence (Stok, de Ridder et al., 2014).

Although some eating decisions may be made after being exposed to normative information, it is also important to consider the acute eating environment, which is hard to tease apart using survey data or an experimental remote confederate design. When in the presence of others, decisions about what to eat may be influenced by intention as well as reaction to the social environment (Jun & Arendt, 2016). Indeed, survey data suggest that both cognitive and affective processes are important in driving menu-item selection in a restaurant setting (Jun & Arendt, 2016). Findings by Jun and Arendt (2016) showed that although descriptive norms were important in predicting intention, which was driven by cognitive processes, only injunctive norms predicted both intention and behavioral

willingness, which was driven by affective processes. Additionally, momentary ecological assessment findings have shown that the presence of social cues increased perceived approval and encouragement of snacking, which were momentary injunctive norms that further increased the odds of snacking behaviors (Schuz et al., 2018). These data suggest that within the social setting itself, injunctive norms may be important to consider based on how they moderate reaction to the social environment. Survey data, however, have their own limitations and do not reflect behavior itself, but instead self-reported behavior. Nook and Zaki (2015) suggested that self-reported behavior has been shown to diverge from actual behavior, and there is a need to understand the mechanisms of both descriptive and injunctive norms in a social setting itself.

Rationale for Focusing on Freshmen Women

It has been documented that college women value and practice health behaviors differently than college men do. Women who live on a college campus are more likely than men to believe in the importance of healthy eating, perceive that it is difficult to maintain healthy eating behaviors on campus, and eat more healthily as measured by meat intake (Wang, 2018). College women are more likely than men to consume a vegetarian-like food pattern, highest in beans, lentils, nuts, vegetables, and meat alternatives (Sprake et al., 2018). In a study aimed at understanding the evolution of eating behaviors in college students, significantly fewer college women self-reported increasing fast food consumption during college, although significantly more women reported increasing intake of sugar and sweets compared to men (Hilger et al., 2017). Data have also indicated that women are more likely to practice restrictive eating

behaviors and report loss of control in eating (Burnette, Simpson, & Mazzeo, 2017).

College women respond differently to the social environment than men do and may have different eating experiences during the transition to the college environment. Meta-analytic data suggest that women are more likely to model their eating behaviors after their eating companions (Vartanian et al., 2015). Qualitative findings indicate women identify that the new living environment and evolving social environments influence their eating behaviors, while men do not address these changes as a concern that affects their eating behaviors (Das & Evans, 2014). Additionally, women's eating behaviors may be influenced more by situational cues than men's eating behaviors (Chansukree & Rungjindarat, 2017). Due to this increased awareness of the social environment, women may be more attuned to social norms. Indeed, women were more likely to respond to the dynamic nature of social norms with particular eating behaviors, such as eating meat (Sparkman & Walton, 2017). Interestingly, although the presence of social support was found to moderate the relationship between stress eating and weight gain in freshmen men, this did not hold for women (Darling et al., 2017). There are also data to support an inverse relationship between friendship and body image for college women, suggesting that the less perceived influence of friends on eating behaviors, the greater body image college women report (Coccia & Darling, 2017). Together these data suggest a complicated interaction between eating behaviors and social influence in women that needs to be further explored.

There is also research to suggest that freshmen students may be a critical population of focus (Hilger et al., 2017). Specifically, freshmen are least likely to follow

a healthy diet pattern (Sprake et al., 2018), and residential freshmen have been reported to consume more convenience foods and fewer fruit and vegetables (Brewis et al., 2016). Cluster analysis has also suggested that women classified as at-risk according to health behaviors consumed fewer fruit and vegetables, and more fats and sugar-sweetened beverages than women classified as healthful (Colby et al., 2017). This same analysis found that freshman residential women were more likely to fall within the at-risk classification than upper-class women or women living off campus (Colby et al., 2017). In an attempt to address the complicated interaction between social influence and eating behaviors in women and how this interaction evolves during the transition to college, I chose to focus this study on residential freshmen women.

Rationale for Taking a Qualitative Approach

There is a subset of quantitative studies that have addressed eating behaviors in college populations and highlighted the need to understand behavior motivations and perceptions more clearly from the perspective of those who are experiencing them. Hilger et al. (2017) found that the majority of college students self-reported changing their eating behaviors upon matriculation into college or university but suggested that more work needs to be done to help explain why this phenomenon occurs. Mueller et al. (2018) used food frequency and behavioral questionnaires to identify common eating patterns in undergraduate students and some factors that may correlate with those eating patterns, including parental and peer influence, but highlighted a need to better understand the factors that contribute to eating behaviors in this population. Christie and Chen (2018) used observational methods to find that those who purchased lunch at a University café

were likely to model their meal choices after those in front of them, however, they noted that their research did not clearly help to explain why this occurs. These studies suggest that the current quantitative data are not enough to help understand how the college eating environment influences eating behaviors, despite the importance of this knowledge in informing health education and promotion. Furthermore, a common thread among these findings is that the social environment is likely a critical factor, however, experimental studies are mostly done outside of the natural social environment.

There are several limitations of quantitative studies that have attempted to demystify social influences on eating behaviors. Experimental approaches addressing social modeling of eating behaviors have been criticized because the structure of the experimental design is itself likely to increase modeling behavior (Christie & Chen, 2018; Robinson, 2015). This may be due to the abnormal context of the situation, which could increase the discomfort of the participants and the resulting need to find comfort in conforming to a perceived norm (Robinson, 2015; Sharps & Robinson, 2017). This is likely influenced by the presence of live confederates, who are often individuals that the participant does not know, increasing the need to adopt salient social norms. Experimental conditions may further induce participant bias based on the participant behaving in a way that they perceive to be expected or acceptable by the researcher (Christie & Chen, 2018; Robinson, 2015). Experimental design is also intended to control as many variables as possible and measure something quantifiable, which may not be amenable when the mechanisms of social influence on eating behaviors are still unclear.

Many experimental studies on social influence and social modeling of eating have been done in social isolation, such as in the remote confederate design, and have been carried out under specific constraints (Robinson, 2015), which is unlike the actual eating experience in most college settings. These studies have provided evidence that modeling occurs in certain controlled settings but they have not provided insight into what influences or motivates modeling of behaviors in a real eating environment. Additionally, studies founded in the SCT have tended to focus on providing opportunities for observational learning or social support in the context of health promotion, but researchers have yet to consider the mechanism of these social factors in the meal setting. Furthermore, many of the quantitative studies that have addressed social influence on eating behaviors have been cross-sectional in nature, which increases the risk of reverse causality bias. These studies have also been dependent at least partly on survey data, which introduce self-report bias (Robinson, 2015).

The exploratory nature of qualitative inquiry may help to begin demystifying how the social environment contributes to eating decisions and behaviors. There is a current body of qualitative work that has begun to explore factors related to eating behaviors in college and university students in a variety of settings. Although this work has helped to identify facilitators and barriers to healthy eating, these studies have largely addressed eating behaviors from an ecological framework (Deliens et al., 2014; Kabir et al., 2018; Lambert et al., 2019; Sogari et al., 2018). These qualitative studies have been conducted in a variety of cultures and within specific populations, and despite the lack of generalizability characteristic of qualitative methods, they have consistently found that

college students report many levels of social influence on eating behaviors. Despite these consistent findings there is a lack of qualitative work that adopts a social lens, seeking to explore social influences on eating behaviors of college students in further depth. This subset of qualitative work has identified the importance of the social environment but has not provided insight into how the social environment is perceived by college students to influence eating behaviors. Understanding how the social environment influences eating behaviors is important from a health promotion perspective because it can help to clarify what aspects of the social environment need to be addressed from an intervention standpoint.

Addressing Relevant Gaps

I used this study to form a foundation that begins to fill several gaps identified throughout this review. To my knowledge, dietary promotion literature founded in the SCT has not adequately addressed the social environment in which college students actually eat, suggesting a need to clarify how the social environment influences modeling during a meal and how this may interact with other critical SCT constructs. Although some SCT-based interventions have considered the influence of the social setting on eating behaviors by incorporating strategies that facilitate opportunities for modeling and developing social support (Bernardo et al., 2018; Ellis et al., 2018; Humphrey et al., 2015), these interventions have most frequently been implemented in an educational setting. Education may help to inform individuals about what influences their behaviors and how to address those influences, but it may also be of critical importance to develop

interventions that extend beyond education to provide meaningful support in the cafeteria when students are actually having to make eating choices.

Studies that have focused on modeling have been largely quantitative and have also failed to consider the actual environment where eating takes place and decisions about eating are made, which may change the salience of social norms and the relevance of descriptive norms versus injunctive norms. It has been suggested that there is a need to explore the gender-specific perceptions about eating in college students using a qualitative approach (Hilger et al., 2017; Papier et al., 2015; Sogari et al., 2018). Existing qualitative research about eating behaviors in college students, however, has generally included men and women and has not provided an understanding of how social factors influence eating behaviors. Additionally, there is concern that freshmen are particularly vulnerable to the influences of the college transition on eating behaviors (Hilger et al., 2017).

By taking an exploratory, generic qualitative approach, I attempted to address these gaps by focusing on how freshmen women perceived the influence of the social environment on their self-efficacy, self-regulation, and outcome expectations, as well as their likelihood to model descriptive norms versus injunctive norms during mealtime in the cafeteria. These findings help to deepen the understanding of how the social environment influences eating behaviors in college women when they are especially vulnerable to social influence, informing better targeted dietary promotion strategies that extend beyond education.

Summary

The transition to college is associated with a change in the social environment, which likely influences eating behaviors in the face of increased autonomy (Deliens et al., 2014; Dhillon et al., 2019; Lambert et al., 2019). Not only do changes in eating behaviors pose potential acute risks such as weight gain (de Vos et al., 2015), but behaviors formed in college tend to persist into adulthood (Plotnikoff et al., 2015) and increase the risk of weight gain and chronic disease later in life. The SCT has been applied as a framework to guide dietary promotion in college settings through classroom-based methods which have only been marginally effective (Brace et al., 2018). There is a need to understand how the social environment specifically interacts with personal factors and behavioral factors in women during meal time to better target positive health behaviors. Other social influence studies that have focused on the effects of social modeling on eating behaviors have found modeling is most robust when students are seeking behavioral guidance, and the literature seems to largely support that salient descriptive norms are critical to eating decisions (Robinson, Thomas, et al., 2014). This further supports the need to understand how social influences affect eating behaviors when they happen, most notably in women who seem to be more susceptible to social factors. Most modeling studies have applied experimental strategies that aim to control the setting, which does not clearly replicate the experiences that college students have when they are eating in the presence of their peers. In this study I addressed this gap by using a general qualitative approach to explore the perceptions of college women regarding their experiences eating in a social setting. This information helps to provide

context to the importance of the social setting, which begins to inform the effective application of the SCT by extending it into the eating environment itself.

Chapter 3: Research Method

Introduction

The purpose of this qualitative study was to understand how eating behaviors in adolescent women were influenced by the transitioning social environment during freshmen year of college. College women tend to be more interested in health-moderating behaviors and the maintenance of overall health than college men are (Hilger, et al., 2017; Plotnikoff et al., 2015; Wang, 2018), but their desire to maintain health is juxtaposed with significant perceived barriers to health-supporting behaviors (Wang, 2018). Understanding how eating in an on-campus environment influences eating behaviors of women during the transition to personal autonomy is important to help clarify the role of the social environment and social support in the development of both short- and long-term health-related behaviors. It has been suggested that health promotion efforts focused on dietary behaviors in college students may need to address specific gender differences in perceived barriers and eating behaviors (Mueller et al., 2018), and this research can begin to guide the development of interventions that promote healthy eating behaviors in women, based on their specific experiences.

In this chapter, I describe the basis for the generic qualitative approach and introduce the research questions. I outline the methods and rationale associated with participant recruitment, selection, data collection, and data analysis. I also identify my role as the researcher, considerations of trustworthiness, and ethical concerns.

Research Design and Rationale

This study focused on perceptions of freshmen women about how the social environment influenced self-efficacy, self-regulation, outcome expectations, and their likelihood to model descriptive versus injunctive norms at mealtime during the transition to college. There are pragmatic implications of this research in the design and implementation of SCT-based dietary health promotion on college campuses. Women and men differ in how they experience the social environment, suggesting a need to address these target populations separately to better develop health promotion programs (Mueller et al., 2018). Furthermore, there is an identified need to develop more effective health promotion strategies that support college students in establishing appropriate behaviors during a time when persistent health-related habits are formed (Mueller et al., 2018). Health promotion strategies should be based on the needs of the target population, necessitating inclusion of college women in the process of understanding the problem (Landry et al., 2018). A generic qualitative approach can help to provide in-depth insight into the perceptions of freshmen women about eating in a social environment (Landry et al., 2018) while they are experiencing the transition to college and the evolution of their social surroundings. This approach has been used by others seeking to involve college students to understand diet-related factors and implementation of health-related interventions on college campuses (Ciao, Ohls, & Pringle, 2018; Deliens et al., 2014; Dhillon et al., 2019; Kabir et al., 2018; Sogari et al., 2018). Additionally, using a generic approach to develop interpretive description of the phenomenon of eating in a new and evolving social environment is useful in helping to illuminate characteristics of the

phenomenon and how they may be used in a pragmatic manner to influence change (Kahlke, 2014). This approach was amenable because of the focus on using the research to inform gender-specific dietary promotion strategies on small college campuses.

Research Questions

The focus of this study was on the perceptions of freshmen women who had recently experienced the transition to college and ate many of their meals on campus in the presence of others. To address these perceptions in light of the gaps in the literature, the following research questions guided this qualitative inquiry:

1. RQ1: What are the perceptions of freshmen women about how the social environment influences their eating behaviors on a college campus?
2. RQ2: What are the perceptions of freshmen women about how social norms influence their eating behaviors during a meal in the cafeteria?
3. RQ3: What are the perceptions of freshmen women about how the social environment influences their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors?
4. RQ4: What are the perceptions of freshmen women about how their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors influence their susceptibility to the social environment?

Central Concepts and Phenomenon

I explored the main phenomenon of interest, eating in a social environment, within the context of young adult women who experienced this phenomenon during the transition to college. The conceptual framework was founded upon a social lens that

considered SCT and social modeling. Key constructs that were explored in further depth as part of the research questions included self-efficacy, self-regulation, outcome expectations, descriptive social norms, and injunctive social norms. These constructs were defined and conceptualized as follows:

Self-efficacy: confidence in the ability to control health behaviors (Bandura, 2004). In context, self-efficacy was conceptualized as a young woman's confidence in her ability to make healthy food choices that support her personal health goals.

Self-regulation: individual practices that facilitate self-evaluation of health behaviors (Bandura, 2004). In context, self-regulation included ways that young women monitored their dietary behaviors in light of personal health goals. Notable examples included goal setting and using tracking devices such as MyFitnessPal.

Outcome expectations: the expected products of health behaviors (Bandura, 2004). In context, outcome expectations included how young women conceptualized the results of their dietary behaviors, such as weight loss, increased sport performance, better school performance, or approval from friends.

Descriptive social norms: standards that are created by the social environment and provide information on what others are doing (Stok et al., 2016). In context, this was conceptualized as social references that provided information about dietary behaviors, to include those who freshmen women directly interacted with at mealtime, as well as those social influences within the larger social setting of the cafeteria.

Injunctive social norms: standards created by the social environment that imply acceptance by others, or a guide about what others perceive as acceptable (Stok et al.,

2016). In context, these references were direct eating partners or people within the larger social setting, and they generally implied certain beliefs about what those others thought to be acceptable and appropriate dietary and health behaviors of others within a social setting.

Social setting: This term was used synonymously with social environment and was defined as any environment in which social interactions occur. In context, the social setting of interest was the college cafeteria, which included both the intimate setting involving direct eating partners, and the macro-environment that encompassed everyone eating within the cafeteria during mealtime.

Role of the Researcher

It has been suggested that a major goal of qualitative inquiry is to understand why people have thoughts and feelings about their experiences because this understanding could provide insight into how people behave (Sutton & Austin, 2015). Additionally, interpretive description operates under the assumption that knowledge is socially constructed (Kahlke, 2014), so why individuals think and feel the way that they do is based on how they perceive their environment. In the context of this study, these presumptions suggest that understanding (a) how freshmen women perceive their social eating environment and (b) their thoughts and feelings about these perceptions may help to clarify why they make certain eating decisions in a social setting. Because this is the principle focus of basic interpretive description qualitative research, the main role of the researcher in this study was to facilitate the sharing of how freshmen women perceived

their eating experiences in the cafeteria, as well as their thoughts and feelings about those perceptions and experiences (Sutton & Austin, 2015).

In my role as facilitator, I designed the semistructured interview protocol and served as the principal administrator of the interviews. I actively participated in data collection by interacting with participants and encouraging open and honest sharing of thoughts, feelings, perceptions, and experiences. I also served as an observer during interviews by actively listening and recording thoughts and emotions, and I was the principal data analyst.

Although these roles seemed somewhat straightforward, I had biases that needed to be addressed. Participants were not my direct subordinates; however, they were students at the institution for which I teach, so I had a connection with their success as students and individuals. I also attended this same institution for my undergraduate studies and had similar experiences to those that my participants summarized as part of our interviews. I further considered the importance of my expertise in, and personal value and promotion of health and fitness, which could have created a bias in how I interpreted the data collected because of my interest in using these data to further health education and promotion efforts at my institution and other, similar campuses.

To manage these biases, I kept consistent reflexive memos, in which I focused on maintaining an awareness of my position within the research problem and the data itself, and how my ideas and biases could have interacted with the perceptions of participants. I did not need to worry about how to address the participants in the classroom, because I was not responsible for assigning grades to any of the participants included in the

research, but my ties to the institution and to health and wellness made it important for me to remain aware of my positionality. In addition, to ensure triangulation and management of my biases, I sought member checks after transcription to ensure that the data were true to the perceptions and feelings of the participants.

Although I did not conduct interviews with my own students, doing research in an environment where the students were aware of my role as a lecturer may have affected data collection. To address this, I clearly articulated that my role as a researcher was distinct from my role as a lecturer, and I reiterated this throughout the process of recruitment, collecting informed consent, and facilitating interviews.

Methodology

The focus of the proposed research was on the perspectives of freshmen women about how the social setting influenced their experiences at mealtime during their transition from living at home to living on a college campus. The study was exploratory in nature, seeking to explore experiences within a specific context. According to DeJonckheere and Vaughn (2019), the purpose of semistructured interviews is to gain insight into the perceptions, thoughts, or beliefs of individuals who have specific experiences with the phenomenon of interest. In addition, semistructured interviews are an amenable approach in studies that seek to collect new and exploratory data regarding a particular phenomenon (DeJonckheere & Vaughn, 2019). Semistructured interviews are intended to be guided by open-ended questions that facilitate open sharing about perceptions and feelings with a specific experience, and help to support exploration of a topic through the use of probes that encourage depth of sharing (Moser & Korstjens,

2018). I chose this method of data collection because it helped to address the research questions by facilitating exploratory conversations that focused on women's specific experiences associated with eating in the cafeteria during the freshmen year of college. This type of open-ended conversation aligned with the purpose of exploring the perceptions and feelings of women who had experience with this particular phenomenon.

Participant Selection

The participants were women in their freshman year at a small, residential college campus. A purposeful sampling strategy was used to ensure recruitment of a subset of women who satisfied the inclusion criteria and therefore had experience with the phenomenon of interest (DeJonckheere & Vaughn, 2019), eating in a college cafeteria in the presence of others during the transition to college. I recruited participants via email using school email addresses acquired from stakeholders within the institution. To be included women had to be civilian, non-health majors, 18-24 years old, in their first year of college, living on campus when school was in session, and eating at least one meal per day in the university cafeteria. Satisfaction of inclusion criteria was confirmed via email using questionnaire (see Appendix A).

In order to derive a plan for the number of participants I should recruit, I considered key items that influenced the information power of my study. Although I had a fairly broad, exploratory aim and planned to do a thematic, cross-case analysis, which Malterud, Siersma, and Guassora (2016) suggested would decrease the information power of my sample and necessitate a higher sample size to reach saturation, I recruited a very specific, purposive sample, my research was founded in theoretical evidence, and I

was well-versed in the experiences of my participants with the phenomenon of interest. Each of these points increased the information power of my sample and decreased the necessary sample size to reach saturation (Malterud et al., 2016). Malterud et al. (2016) further suggested that with experience, 6-10 participants should be sufficient to provide enough information power in a cross-case thematic analysis. Considering each of these critical points, and further considering my somewhat limited experience conducting semistructured interviews and the homogeneity of my sample, I aimed to conduct a minimum of 10 interviews.

Recruitment Procedures

Before recruitment, I obtained Institutional Review Board (IRB) approval from Walden University (# 02-13-20-0721161). On February 18, 2020, this approval was accepted by the IRB at the partner institution (# 00005859). Upon approval, a list of email addresses of freshmen civilian women who were non-health majors was acquired from the institution, and potential participants were emailed an invitation to participate. Participants who expressed interest were sent the inclusion criteria questionnaire (see Appendix A) and a copy of the informed consent document. Upon satisfying inclusion criteria, interviews were scheduled.

Participation Procedures

I asked the selected women to participate in one semistructured interview discussion that was expected to last no longer than 60 minutes. Discussions were facilitated on campus in a basement lab space. Upon arrival, participants were provided with a $5.00 gift card to on-campus eateries as a thank-you, and asked to sign an

informed consent, which was developed from a consent guide obtained from the Clemson University Office of Institutional Effectiveness and Assessment (n.d.). Upon receipt of consent, I offered participants a bottle of water and encouraged to make themselves comfortable.

Once participants signed the informed consent document, I used the researcher-derived semistructured interview guide (Appendix B) to set the expectations of the discussion and give the participants an opportunity to communicate their understanding. I then begin the audio recording using TEMI (Version 2.3.1) and began the discussion. I took brief notes on the interview guide and probed for additional sharing of experiences when necessary. I concluded each interview by thanking the participants and explicating how I would use the information they provided. In these concluding remarks I explained the process of creating a verbatim transcript of the audio recordings and gave them a timeline for when I when I would send them a copy to review. I also explained that they had the option to send comments or corrections of the transcript if they wanted, but they could also choose not to. I also offered each participant the opportunity to have a copy of the results via email. Interviews were conducted between February 25 and April 30, 2020, and all interviews lasted between 21 and 37 minutes.

Semistructured interview guide. I developed the semistructured interview guide (see Appendix B) directly from the four research questions. Each main question had a set of possible probes with clear identification of which probes aligned with and helped to address each specific research question. Furthermore, the research questions and interview questions aligned with the identified gaps in the social modeling and SCT

literature. The semistructured interview guide included open-ended questions to address constructs of interest identified through review of the literature, including injunctive norms, descriptive norms, self-efficacy, self-regulation, and outcome expectations.

According to Brod, Tessler, and Christensen (2009), the best way to ensure content validity in qualitative research is to use a data collection method that requires direct interaction with participants because it facilitates the greatest opportunity to understand their perspectives and experiences. Furthermore, these direct interactions should be guided by semistructured guides that are founded in the literature and move from general to more specific questions (Brod et al., 2009). In the process of developing content validity for a new instrument, the focus should be on collecting new information about the phenomenon of interest based on what has been identified as relevant through the literature (Brod et al., 2009). Content validity was therefore established by directly connecting the interview guide to the gaps and critical constructs identified in the literature. Content validity was further supported by taping and transcribing the interviews, by having the same facilitator for all interviews, and by pre-testing the questions with a group of participants who were similar to those included in the study. Pre-testing the interview guide allowed me to collect preliminary data to support content validity, practice interview administration to become consistent with the use of the semistructured guide, and work to identify and address my bias in the way I developed and administered the interview guide. This process further helped me to ensure that questions addressed relevant content and that participant responses addressed relevant content as openly and honestly as possible.

Data Collection and Follow-Up Procedures

All four research questions focused on exploring the perceptions of the participants, so the main method of data collection was semistructured interview discussions. Interview discussions allowed for the creation of three major types of data: direct observations recorded during the discussions, verbatim transcripts created from audio recordings of the discussions, and observations and biases recorded during the transcription process. As the researcher and the main instrument I facilitated the interview discussions and recorded my direct observations. I also listened to the TEMI audio recordings, edited the TEMI-derived verbatim transcripts, and recorded additional observations before, during, and after the transcription process. I recorded reflexive memos to track my thoughts, ideas, and biases throughout the interviews and during the transcription process. I specifically recorded memos (a) after I conducted interviews, (b) before I listened to the audio recordings, (c) while I edited the transcripts, (d) after I finished editing the transcripts, and (e) during data analysis.

My intention was for audio recordings to be reviewed and transcripts to be completed within two weeks of each interview. Once the transcripts were complete, participants were given access to their transcript via email and given the opportunity to send comments or corrections for up to one additional week.

Data Analysis

As previously noted, there were three critical types of data collected from the administration of the interviews, including: (a) direct observations recorded during the discussions, (b) verbatim transcripts created from audio recordings of the discussions,

and (c) observations recorded during the process of transcript editing. The main unit of analysis was the individual. The direct transcripts were used to develop codes that addressed all four research questions and were founded in the theoretical underpinnings of SCT and modeling of social norms. I used observations and reflexive memos about my emotions, ideas, and biases to validate codes and emerging themes and explore discrepant cases.

I used an inductive thematic approach to coding. According to Braun and Clarke (2006), this approach is useful when seeking to explore experiences or perceptions of individuals and to understand the social construction of reality. This approach is inductive in that it does not operate from a theory-driven codebook but instead facilitates the development of codes from the data and explores how codes converge into themes (Braun & Clarke, 2006). This process required initial familiarization with the data, which I did by listening to the audio, editing the transcripts, and reading through the transcripts while recording reflexive thoughts and potential pre-codes (Braun & Clarke, 2006). This was done once all interviews were conducted. Once I was familiar with the transcripts I uploaded them to MAXQDA (Version 2020), organized them by respondent, and used them to develop codes. The first cycle of coding was continually reflexive. I went through each transcript several times and record thoughts and ideas that emerged as codes continued to develop and evolve (Braun & Clarke, 2006). I also considered my previously recorded observations during first cycle coding to corroborate codes and categories. When discrepant cases emerged, I considered them in light of the developing codes. I recorded my ideas about how the discrepancies influenced the development and

evolution of codes by using the memo function in MAXQDA. I considered these memos through subsequent rounds of coding. During first cycle coding I also conceptualized codes and categories and what they represented, and combined codes that represented similar concepts, perceptions, or experiences. During second cycle coding I created themes from previously identified codes. I built a codebook in MAXQDA using the final set of codes, and then used MAXQDA to help develop thematic maps that represented the data (Braun & Clarke, 2006). I reviewed themes in light of individual codes and the entire data set to ensure credibility of the analytic outcomes (Braun & Clarke, 2006). Additionally, I reviewed discrepant cases in light of the thematic framework and then considered them in the context of SCT and social modeling, as further described in Chapter 4.

Issues of Trustworthiness

It is fairly well accepted in current qualitative paradigms that although validity of research findings cannot be achieved using quantitative standards, there are ways to ensure that data collection and analysis methods are rigorous and repeatable, and therefore trustworthy (Ravitch & Carl, 2016). It is the general goal of qualitative researchers to ensure that their data collection and analysis methods are credible, transferable, dependable, and confirmable. Below I have summarized specific strategies that were part of my original research plan to increase each of these components of overall trustworthiness (Ravitch & Carl, 2016).

Credibility

Credibility is often likened to internal validity in quantitative research (Shenton, 2004). According to Shenton (2004), three ways to ensure credibility in research are to choose methods that are well established and support the research aims, become familiar with the culture of the participants before collecting data, and to ensure experience of the researcher as the main instrument for data collection (Shenton, 2004). Semistructured interviews were the main method employed, which have been identified as an amenable approach when research is exploratory and focuses on perceptions, thoughts, and feelings within the context of experience with the phenomenon of interest (DeJonckheere & Vaughn, 2019). This aligned with the purpose of exploring the perspectives of freshmen women who had notable experience with eating in a social setting. In addition, I was familiar with the culture at the partner institution, both at a macro scale and within the cafeteria directly. Finally, I used peers to conduct practice interviews, which facilitated my preparation as the main instrument.

My preparation as the main instrument was not simply a step to be taken before data collection but was part of a continuous process to ensure that I remained in tune with my data and aware of my biases. To help ensure continuous preparation and awareness, I kept reflexive memos after all interviews, throughout data familiarization and transcription, and throughout the data analysis process (Patton, 2015; Ravitch & Carl, 2016; Shenton, 2004). I used member checks to ensure that the data reflected an honest representation of the participants' thoughts and perspectives (Shenton, 2004). I also

recorded thick, meaningful description of all of my experiences recruiting, collecting, and analyzing data in a detailed audit trail (Ravitch & Carl, 2016; Shenton, 2004).

In addition to these strategies, Shenton (2004) suggested that utilizing triangulation of data collection methods is helpful in ensuring the credibility of the data collected. Ravitch and Carl (2016) offered various ways to triangulate data collection, including (a) using different data collection methods, (b) collecting data at different times, (c) using various investigators to facilitate data collection, and (d) including a variety of participants who can represent differing viewpoints. In an attempt to achieve triangulation I used semistructured interviews, recruited freshmen women from a variety of dorms, home states, and majors, and considered recorded observations, notes, and reflexive memos as a way to validate emerging findings throughout coding and theme development. This allowed for me to consider a variety of perspectives, environments, and contexts when analyzing my data, while also maintaining awareness of my biases.

Transferability

Shenton (2004) conceptualized transferability as the extent to which findings are generalizable to other contexts. In order to address this, it is first important to clearly define the parameters of the organizations, participants, and data collection methods involved in the research (Shenton, 2004). This information alone can help to elucidate what other contexts the research findings could apply to, and further highlights the importance of thick description (Ravitch & Carl, 2016; Shenton, 2004). To clearly setup the context of the study, I have provided detailed description of participants, data collection instruments, and data collection experiences in Chapter 4 so that external

reviewers have a complete picture of the process and the contextual limitations, allowing for them to conceptualize how these findings may apply in other settings (Ravitch & Carl, 2016). I also recruited a variety of participants, including women from different states, women who lived in different dorms, and women who represented a variety of academic majors. Although this may have limited the transferability on my campus, I excluded freshmen women who were participants in the military structure on campus because they had a different set of experiences during mealtime. The purpose of this exclusion was to increase the transferability of the findings outside of the setting of the partner institution.

Dependability

In order for qualitative findings to be repeatable and reliable, they have to be dependable (Shenton, 2004). This requires proper research design and planning, adequate description of that plan and execution, and honest reflection about the execution of the project and the effectiveness of the methods employed in answering the research questions (Shenton, 2004). To address these aspects of dependability, I made a detailed plan for the research which I supplemented with audit trails that included thick description of what was actually done in the field in very specific detail (Shenton, 2004). I also recorded reflexive memos that included subjective reflection about my process and my biases (Shenton, 2004).

Confirmability

Confirmability is often likened to objectivity, and its purpose is to ensure that the findings produced by qualitative inquiry are derived from the data itself and not the

perspectives and biases of the researcher (Shenton, 2004). As described above, triangulation was used to ensure that the data reflected the true perspectives of the participants. This helped to increase the likelihood of confirmability, although alone this was not sufficient in accounting for my biases as the main instrument. To ensure confirmability, I also recorded reflexive memos, had dialogic interactions with my mentor, and provided thick description of how my biases were handled in the data analysis processes (Ravitch & Carl, 2016; Shenton, 2004).

Ethical Procedures

Before recruitment, IRB approval was obtained by both Walden University (# 02-13-20-071161) and the partner institution (# 00005859) to ensure that both the institution sponsoring the research and the institution housing the participants agreed to the fair and ethical treatment of participants and data. The partner institution provided approval on February 17, 2020, and Walden University granted final approval on February 18, 2020.

As outlined above, I recruited participants using email communication with freshmen women who were listed as non-health majors. Per IRB approval, I used the initial email communication to clearly articulate my role in the research juxtaposed against my role at the partner institution and explicate the benefits of the research for me and my participants. Women in my department were excluded because of potential previous academic relationships formed through student advising.

I offered students compensation for their participation in the form of a $5.00 voucher to use at a variety of on-campus eateries. I did not disclose this incentive during initial recruitment to ensure that students were willing participants and not coerced by

outside factors. I made participants aware of compensation after I confirmed that they satisfied criteria presented on the inclusion criteria form (Appendix A). I also clearly disclosed the incentive in the Informed Consent document.

I ensured adequate debriefing time at the end of each interview, at which point I referred participants back to the Informed Consent document to find my contact information. I also explained to them that they would receive a copy of the verbatim transcript and the choice to have their thoughts corrected or omitted if they were interested (Ravitch & Carl, 2016). During this debriefing I also reminded them that they would be deidentified in all transcripts, data analysis, and reporting (Ravitch & Carl, 2016). Data is password protected on a personal, encrypted, updated computer and will be destroyed in May 2025.

Summary

College women experience difficulty with health behaviors, especially during the transition to college when they are experiencing new autonomy alongside an evolving social environment. This transition is often accompanied by eating with a new set of friends and acquaintances and in a setting surrounded by social influence. It is unclear based on the existing literature how women perceive the experiences of eating in a cafeteria during the transition to college and how their perceptions and experiences influence their eating behaviors. This study used a generic qualitative approach to seek to understand the pragmatic implications of how freshmen women perceive their experiences eating in a new social environment. Semistructured interviews were the main method of data collection, supplemented by direct observation and researcher journals.

Key strategies to ensure trustworthiness included triangulation, member checking, and thick description. Ethical concerns about appropriate recruitment, confidentiality, and interview administration were addressed and methods deemed appropriate by the Walden University IRB and the IRB of the partner institution. In the following chapter, I will address the key findings of this research.

Chapter 4: Results

Introduction

The purpose of this qualitative research was to understand the perceptions of freshmen women about how the social environment influences their eating behaviors during the transition to college. Four principle research questions guided this project:

1. RQ1: What are the perceptions of freshmen women about how the social environment influences their eating behaviors on a college campus?
2. RQ2: What are the perceptions of freshmen women about how social norms influence their eating behaviors during a meal in the cafeteria?
3. RQ3: What are the perceptions of freshmen women about how the social environment influences their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors?
4. RQ4: What are the perceptions of freshmen women about how their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors influence their susceptibility to the social environment?

In this chapter I provide a detailed account of the research process, including study settings, participant demographics, recruitment and data collection procedures, and data analysis procedures. In addition, I summarize the results of the study, address the research questions in the context of those findings, and address the trustworthiness of the data.

Setting

The setting of this study was a small, liberal arts, residential institution in Northern New England. Upon IRB approval of this study, it was mid-winter, and the weather was very cold with significant snow. The campus itself is on a hill, and navigating the campus requires moving up and down several hills and stairs. At the start of the study, interviews were collected in-person in the basement of one of the main academic buildings, adjacent to the library and the student center, which houses the cafeteria. The dormitories are approximately a 5- to 10-minute walk from this academic building, with 3-4 sets of stairs between the interview room and the main entrances to the dormitories themselves. Two of the interviews were conducted in this basement room before adjustments had to be made for a global pandemic.

Approximately four weeks after IRB approval, a global pandemic required the majority of the United States to issue stay home orders, and all academic institutions moved to online instruction, requiring current students to return to their homes for the remainder of the semester. Per updated IRB approval, the recruitment strategy of email communication with potential participants was modified to include follow-up phone calls using the phone number on record with the institution. Semistructured interviews were conducted via phone, FaceTime, and GoToMeeting, and participants were encouraged to participate in the modality in which they were most comfortable.

Demographics

All participants were freshman civilian women between 18 and 22 years of age. Participants represented a variety of academic majors, such as nursing, biochemistry,

architecture, computer security, engineering, psychology, criminal justice, and undeclared. Three of the thirteen participants were student-athletes, representing fall, winter, and spring sports. Most participants were from a variety of states on the East Coast and New England, with one from the Western half of the United States.

Data Collection

Before beginning data collection, I set a goal of conducting 10 interviews. I was able to conduct two in-person interviews before the pandemic, then conducted one FaceTime interview and one phone interview before I decided that video-conferencing was the best way for me to proceed with interviews in a virtual format. To address these changes in interview setting, I conducted a total of 13 interviews with the breakdown as follows: in-person (two interviews), phone (one interview), FaceTime (six interviews), and GoToMeeting (four interviews).

In-person interviews were conducted in a basement lab space in one of the main academic buildings. This room was private and enclosed without windows. I conducted phone and video-conference interviews from the basement of my home. Participants were instructed to set up in their homes in a space that made them comfortable. All interviews lasted between 21 and 36 minutes, with the majority of interviews lasting between 25 and 32 minutes. All interviews were conducted between the end of February and the end of April 2020.

During in-person interviews, I asked participants to read and sign the informed consent document before the interview began. Participants were given their incentive before the interview. For phone and video-conferencing interviews, participants were

asked to provide email assent by reading the updated informed consent document and responding “I consent” via email. I confirmed addresses with participants while on the interview call and sent out the incentives after the interview call.

All interviews were recorded using TEMI (Version 2.3.1), and transcripts were purchased from TEMI for each of the interviews. I recorded notes and ideas during each of the interviews on a printed copy of the interview guide, which I then used to formulate my thoughts and ideas into a memo after the interviews had been conducted. At the end of each interview, I asked participants if they had any additional information that they wanted to share, before stopping the recording. I then confirmed their address to send the incentive and let them know that I would send them a copy of the edited transcript for their review, as well as a final summary of findings at the completion of my dissertation.

Data Analysis

To ensure transcripts were accurate and to immerse myself in the data before coding, I listened to all audio recordings while editing the TEMI transcripts. Before editing each transcript, I reviewed the post-interview memos I had recorded, and reflected on my ideas and biases at the time. During transcript editing, I recorded ideas and biases in a separate memo as I identified them, and after editing each transcript I recorded final thoughts and biases to ensure that my ideas about the data were as objective as possible.

According to Braun and Clarke (2006), there are critical decisions to make before conducting thematic analysis. These analytic decisions are important to highlight here because they provided the basis for how I coded, as well as how I constructed categories and narrowed themes throughout the analysis process. My first decision was to provide a

more detailed description about themes that were relevant to my research questions, instead of a rich thematic description of the entire data set. This necessitated that I re-visit my research questions and ground my thematic development in the research questions themselves. My next decision was to undergo theoretical, rather than inductive thematic analysis. This is not to say that the process was not inductive in nature, but that I looked for themes that addressed theoretical presuppositions within the SCT and social modeling of norms. In addition, I looked for latent, rather than semantic themes, based on my constructionist beliefs that experiences are framed by the social, cultural, and structural environment.

Based on these decisions, I coded for anything that represented experiences with environmental structure, culture, or social environment, either explicitly or implicitly. I used MAXQDA as an organizational tool, coded the first transcript, and then took a break from the data to reflect on my process. When I returned, I re-familiarized myself with the 39 codes I had created from the first transcript, and organized them into categories, which emerged from similarities in the codes. These categories were perceptions/assumptions, environment, culture, descriptive norms, injunctive norms, confidence, and monitoring/expectations. Through the next three transcripts, I inductively identified an additional 36 codes and one additional category, what I want out of meal time. At this point, I took some time to conceptualize and define codes, as well as collapse codes representing similar ideas. At the end of this process, I had a better conceptualization of the existing codes, and I condensed the number of codes from 75 to 60. Throughout the next nine transcripts I continued to inductively add codes that represented perceptions

and experiences not already well-represented with existing codes. All of the emerging codes identified in the final 9 transcripts fit naturally within the existing category structure. At the end of the first round of coding, I had 73 total codes, 65 of which had been identified within the first five coded transcripts. I recorded memos throughout the process that represented my ideas about how relationships were developing within the data, and thoughts about how my biases were evolving or contributing.

After the first round of coding, eight categories had emerged from the data. I used the creative coding feature of MAXQDA to create visual conceptual maps within these categories to better understand what the categories were representing, and to combine categories or move codes when necessary. At the end of this process, I had visual maps representing the relationships between codes within the remaining categories of environment, descriptive norms, injunctive norms, confidence, monitoring, and outcome expectations. These categories emerged from the organization of codes and aligned well with theoretical underpinnings of the research questions. I took some time to view these visual maps together, which helped me to visualize the relationships among codes between categories, for example the important relationships between social environment, confidence, and awareness of injunctive versus descriptive norms.

At this point, I returned to my research questions to see if these categories and their interactions were well grounded. I identified that two of my four research questions directly asked how environment influences eating behaviors and found that my analysis at that point was only focused on experiences with the environment. I decided that in order to address my research questions, I needed to code for direct eating behaviors as

well. I could recall from the first round of coding that there were seven specific behaviors that struck me. I started with this list of seven behaviors, within the new category of eating behaviors, and went through and coded all 13 transcripts. I coded for existing codes and these new eating behavior codes, adding new codes that represented eating behaviors I had not remembered. At the end of the process, I had 13 new codes reflecting two new categories: direct eating/food behaviors and indirect mealtime behaviors. I used the creative coding feature in MAXQDA to create visual maps of these identified eating behaviors and recognized that although some of the eating behaviors related to one another, it was more likely that the behaviors were linked to the social environment and experiences. To visually address how eating behaviors were linked to sociocultural experiences, I used the code co-occurrence feature in MAXQDA to identify what other codes emerged in the same places as each of the identified eating behaviors. What I found was all eating behaviors frequently co-occurred with either the friend environment, conceptualized as the environment and associated experiences created when friends were present, or the larger social environment, conceptualized as the environment and associated experiences created by all of the other people within the cafeteria. Although these other people included acquaintances, students whom participants did not know, cafeteria staff, or faculty eating in the cafeteria, the most notable way that participants conceptualized and explained the larger social environment was in the context of other students who were not identified as their friends. Eating behaviors that often co-occurred with the friend environment, also co-occurred with codes such as friends = comfort, comfort increases confidence, and friends support monitoring, whereas eating behaviors

that co-occurred with the larger social environment often co-occurred with codes such as time availability and general convenience, perceived injunctive norm awareness high when confidence low, and judgement by non-friends.

I used these co-occurring codes to draw a concept map that separated behaviors, social norms, and SCT constructs by this two-tiered social environment (i.e., friend or larger social environment) and used this map to identify key themes. The first thematic map included themes related to descriptive norms, injunctive norms, confidence, convenience of environment, and cultural norms. I looked at these themes, identified subthemes in light of my research questions, and felt that I had constructed them to specifically answer the research questions instead of address inductive, stand-alone themes. I re-read Braun and Clarke (2006) to gain some insight into the part of thematic development I was attempting, and found it important that themes should contribute to the story, but still stand alone, suggesting there shouldn't be much overlap between themes. Because I could identify several points of overlap within my initial thematic map, I decided that it was not appropriate. I returned to the larger concept map and found that the friend environment and larger social environment were two key themes that really conceptually separated themselves, with one crossover on the map that I felt could be explained by culture. I created a new thematic map that included the following themes: friends, larger social environment, and health culture, with subthemes that reflected the key drivers within each of those themes.

At this point, I returned to the larger concept map and felt somehow tied to my current thematic understanding, although I could not really explicate to myself why I

believed that health culture was an important theme to include. I re-visited collated codes to see if they fit with the current thematic map that I was working on and found that health culture did not quite fit with the existing codes. To unpack my understanding, I put all of my maps and codes aside and wrote down the story that had emerged from my data in narrative form. Upon writing it down, it became clear to me that the emerging and critical themes were friends and the larger social environment, and that health culture really fit within the larger social environment when considering it in the context of the cafeteria. This story fit well with existing codes and with the concept map I had created, and so I used it to make another thematic map. This map included two themes, friends and the larger social environment, each with subthemes. To ensure this theme structure was consistent beyond just codes, I re-read all 13 transcripts with the narrative story and the thematic map in front of me. I recorded instances when participant responses diverged from the story or the map and added details directly from the transcripts that seemed striking and added to the overall story. I identified cases that diverged in two key ways, and for each of those cases identified and recorded ideas founded in self-efficacy and SCT constructs that could help to explain their divergence from the thematic analysis. For both divergent patterns there were two or more participants that diverged in similar ways, which helped me consider how and why their perceptions were different. The critical importance of self-efficacy and friend group dynamics helped to explain how these divergent cases still fit within the thematic map, despite not precisely representing the same experiences as the other participants. This is explained in further detail in the results section of this chapter.

I used the details added to the narrative story to refine the thematic map, which ended with two key themes, each with two subthemes: friends, with the subthemes of confidence and descriptive norms, and larger social environment with the subthemes avoiding discomfort and injunctive norms. These themes and subthemes are described in the Results section of this chapter with code and excerpt examples to illustrate them.

Evidence of Trustworthiness

Credibility

I originally proposed that the three key ways to ensure credibility, or internal validity, were to choose well-established methods that adequately support the research aims, to familiarize with the culture of the participants, and to ensure experience with data collection methods (Shenton, 2004). Although focus groups were the originally proposed research method, it was decided based on feedback from the IRB and my committee chair that individual interviews better aligned with the purpose of the research based on the exploratory nature. It did not seem appropriate for this research to be seeking a consensus from participants, which made semistructured individual interviews a more amenable option. This further increased the credibility of the method because I had previous experience conducting semistructured interviews. My work as an instructor at the institution where the research was conducted ensures that I was and still am well immersed in the culture of the participants. I recorded memos after each interview, during the transcription process, and throughout the coding and analysis process to address my biases and evolving understanding of the culture and how it contributes to the experiences of the participants. I also discussed my process with my mentor, utilized

member checking with each participant, and maintained a very detailed audit trail to track my experiences throughout the process. I achieved triangulation by recruiting women from a variety of majors and home states, and by using multiple types of data, including audio recordings, verbatim transcripts, and written observations and notes that I recorded throughout the interview and data analysis processes. Although I proposed to use video recordings, the switch to semistructured interviews and IRB requirements necessitated that I use audio recordings instead.

Transferability

To address the generalizability of these findings I have provided rich, in-depth description of the settings and participants involved in this research and the data collection and analysis processes, as suggested by Ravitch and Carl (2016). I also recruited participants from a variety of academic majors and home states, to increase generalizability to other institutions of similar size.

Dependability

To support the repeatability and reliability of my research I recorded every detail of the execution in an audit trail. This allowed for me to track changes in the research plan and offer a thick, detailed description of the process of data collection and analysis for the purpose of repeatability. I also recorded reflexive memos after conducting each interview, throughout the transcription process, and throughout the coding and analysis process to ensure that I was tracking subjective experiences that may have influenced how I decided to collect or analyze the data.

Confirmability

To address the confirmability of the results I used member checking to help triangulate my findings. I also referred to my reflexive memos before each stage of data analysis to maintain an awareness of my biases. During review of my memos, I recorded further reflexive memos that addressed how my biases may have influenced how I interpreted or understood the data and considered how to avoid or address those biases during analysis. In addition, I checked my evolving thematic understanding of the data at various levels. To ensure the themes were supported by existing codes, I reread collated coded segments with the evolving thematic map to address any inconsistencies. This helped me to refine my thematic representation of the data, at which point I reread all transcripts to ensure that the themes truly represented the dataset as a whole (Braun and Clarke, 2006).

Results

Theme 1: Friends

The theme that emerged as most critical for positive perceptions about eating experiences was friends. The data represent the idea that eating with friends or having friends as a support system within the cafeteria has mainly positive outcomes, which participants have experienced in two key ways: an increase in confidence within the cafeteria, and a source of descriptive normative information in this setting. These two subthemes are important because they influence eating behaviors differently.

Subtheme: Confidence. The important link between friends and confidence within the cafeteria is that friends appeared to increase comfort. For example, Participant

2 noted, “If there’s another person in the scenario with you, you feel less bad about yourself cause you’re like, oh, like we’re in this together.” When asked about eating with friends, Participant 4 explained, “I guess just like having one or a few of them around it just like sort of helped ground me and like calm me down.” Participant 9 directly linked this comfort to confidence when she explained, “I probably feel more comfort- like confident and comfortable when I’m with a group of friends.” The data really support that comfort is tied to confidence. Participant 6 noted that her friends increase her confidence when she explained,

> So when I have my like friends there and I’m meeting with them, even if it’s just like one other person or like, um, I get there and like I find someone I know, I definitely would say like, I’m more confident eating there.

Similarly, Participant 12 noted,

> I'm definitely more confident with my friends, so I will, I will eat more and if I want to get something else, I'll get up and get it with them. Whereas if I was…had to go alone, I probably wouldn't do it.

The importance of friends in the creation of comfort and confidence is well-illustrated by the codes friends = comfort and comfort is tied to confidence, and further examples of these codes are provided in Table 1.

Table 1

Codes and Examples Illustrating the Influence of Friends on Confidence

Code	Examples	Participant number
Friends = comfort	"So if I'm with my friends, I'll grab more and I'll know like I can sit and eat for a while and they'll wait for me."	1
	"If there's another person in the scenario with you, you feel less bad about yourself cause you're like, oh like, we're in this together."	2
	"I guess just like having one or a few of them around it just like sort of helped ground me and like calm me down."	4
	"Um, I feel like it's fun. It's nice to like have someone to eat with. I don't like eating by myself personally there. So it's nice having like, just like friends there to talk to like about the day and like everything."	6
	"And being in a group of people who eat like that and are supportive of each other, you know, it just made it a little bit easier."	7
	"I probably feel more comfort- like confident and comfortable when I'm with a group of friends."	9
	"Like, cause if it's people that I know then I'm definitely gonna feel like more comfortable doing it. Whether- if it's like people I don't know, I'm probably going to be like, 'Oh, well…' I don't, I don't know. Like, yeah, just feels less comfortable."	10
Comfort is tied to confidence	"I guess if they're eating something like me then, my confidence could go up cause (pause) be like, 'Oh, someone's eating the same things so I don't need to feel, um, bad about myself.'"	2
	"So when I have my like friends there and I'm meeting with them, even if it's just like one other person or like, um, I get there and like I find someone I know, I definitely would say like, I'm more confident eating there."	6
	"Definitely boosted when I'm eating with my friends. It's just kind of that security of having other people with me and like, you know, oh if I trip, you know, people are less likely to notice."	7
	"I'm definitely more confident with my friends, so I will, I will eat more and if I want to get something else, I'll get up and get it with them. Whereas if I was…had to go alone, I probably wouldn't do it."	12
	"They tend to actually make me more confident because I'm far less…I'm probably less choosy. I am far more willing to set, to look at, 'Okay, that looks a little weird, but whatever, it's not the end of the world if I don't like it,' and just grab it and eat it."	13

Comfort and confidence seemed to be important in the cafeteria because they enabled certain types of eating behaviors. For example, when participants were comfortable, they were more likely to take their time at a meal, socialize and enjoy their time, and eat more. Participant 1 explained, "Um, so if I'm with my friends, I'll grab more and I'll know like I can sit and eat for a while and they'll wait for me." Participant 7 explained how friends helped her to enjoy mealtime:

> In a group setting my friends and I are all kind of loud and um, we laugh a lot and we joke around a lot. We have a lot of fun together. It's definitely very vivacious, lively conversations that we usually have.

Participant 10 made the connection between socializing and spending time in the cafeteria when she explained,

> When it's just like me and my friends, like…if it's like just me and one friend, sometimes it can last awhile cause like, you know, we start having, like catching up and like, you know, having a long conversation.

Participant 12 explained that the confidence she felt with her friends allowed her to feel okay eating more: "I'm definitely more confident with my friends, so I will, I will eat more and if I want to get something else, I'll get up and get it with them."

Participant 5 gave an example of how her key friend helped her to feel more comfortable and eat more when she explained,

> He tries and distracts me, so he like always talks and stuff and he knows that like if I'm listening and have the utensil in my hand, I kinda just like subconsciously feed myself and I don't really notice until like it's gone. So he just keeps talking

> to me and distracts me cause he knows that I'm not the most comfortable in the chow hall.

The comfort and confidence created within the friend environment also seemed to increase the likelihood that participants would eat what they wanted, which often meant they could focus on their hunger, preferences, or personal needs. When asked about how friends influence choices made at mealtime, Participant 4 responded, "Uh, honestly doesn't really, like I just eat what I want to eat." Participant 7 further explained her confidence to choose based on her needs or preferences when she ate with her friends:

> Even if my friends all get salads for dinner, you know, I might spring for that bowl of pasta just because that's what I feel like and I, you know, eaten well for the rest of the day or for the previous week.

Participant 2 also noted that eating with her friends allowed her to be confident that she could choose whatever she wanted:

> They all eat different things so, like one friend would eat a salad and my other friend would eat pizza. So I know that I can eat whatever I want and they would never say anything about how much you eat.

Sample codes that illustrate how eating behaviors are influenced by the comfort and confidence provided by friends include eat whatever/however I want, eat/choose more, and take my time/socialize. These codes and additional examples are provided in Table 2.

Table 2

Codes and Examples Illustrating the Influence of Friends and Confidence on Eating Behaviors

Code	Examples	Participant number
Eat whatever /however I want	"They all eat different things so, like one friend would eat a salad and my other friend would eat pizza. So I know that I can eat whatever I want and they would never say anything about how much you eat."	2
	"Uh, honestly doesn't really, like I just eat what I want to eat."	4
	"So like, I know that like they're not gonna like, think it's weird if I'm eating like a lot of a certain thing or like if I'm not like super hungry or if I'm not eating a lot because I feel like they know me, kind of thing. So I definitely feel like I'd be more confident if like I went and got like a certain kind of food and am just like eating it with them."	6
	"Even if my friends all get salads for dinner, you know, I might spring for that bowl of pasta just because that's what I feel like and I, you know, eaten well for the rest of the day or for the previous week."	7
	"Umm, I feel bad for anyone that's around us. We're kind of loud, but we kind of just do our own thing, eat whatever we want or feel like. Um, there's nobody there like saying, "Oh that's all you're eating" or something. If anything it's like, 'Oh you're eating that? Like tell me if it's good or not, cause I wanted to try it but like I didn't get it.'"	8
	"Um, yeah, I'd say my comfort level is a little different. Like when in front of my friends, like I don't really care, like, you know, but…and like, I don't really care how much I eat."	10
	"So, even though I'm joking, even when I hear them telling me, 'hey, you're not fat, you look good'. It makes me really feel good about myself. So I'm like, 'yeah, I look good. I deserve ice cream, so I'm gonna go get it.'"	11
Eat/choose more	"Um, I think I do probably eat more when I'm with my friends cause I know like I'll have extra time cause like we'll all go together"	1
	"He tries and distracts me, so he like always talks and stuff and he knows that like if I'm listening and have the utensil in my hand, I kinda just like subconsciously feed myself and I don't really notice until like it's gone. So he just keeps talking to me and distracts me cause he knows that I'm not the most comfortable in the chow hall."	5
	"I would definitely say that I eat like more bigger meals I guess. So like I don't always get like breakfast at school. I normally just like have like a granola bar or something in my room. But like, I always eat lunch with like my friends, and like dinner with my friends."	6
	I know when I'm sitting with, like my, my other girlfriends, not just *friend's name*, or even if, if I'm sitting with *friend's name*, if I eat my full meal and I'm like, 'Oh, I want ice cream'"	11
	"I'm definitely more confident with my friends, so I will, I will eat more and if I want to get something else, I'll get up and get it with them."	12

(table continues)

Code	Examples	Participant number
Take my time /socialize	"Um, so if I'm with my friends, I'll grab more and I'll know like I can sit and eat for a while and they'll wait for me."	1
	"We're, well, for lunch we'd normally be there for like 20 minutes to half hour, but for dinner we could be there for sometimes like up to an hour, just like talking."	4
	"So we normally talk about how our- like if it's lunch, we talk about how our classes have been going so far and like what we're looking forward to for our next class."	5
	"Um, anywhere from like 30 minutes if it's like, in between classes to like, I've been there for like an hour and a half, just like talking with my friends."	6
	"In a group setting my friends and I are all kind of loud and um, we laugh a lot and we joke around a lot. We have a lot of fun together. It's definitely very vivacious, lively conversations that we usually have."	7
	"And that's what, um, I would try to do with my friends is just like, be able to relax for that little amount of time, eat my food, um, and then like talk to them and then go on with the day."	9
	"When it's just like me and my friends, like…if it's like just me and one friend, sometimes it can last awhile cause like, you know, we start having like catching up and like, you know, having a long conversation."	10
	"Um, good. We all talk about our days and they, it's like, I don't know, it's kind of like our, our time together as our friend group, so we just like converse and like show each other funny videos as we were eating and stuff like that. So it's talk about what's going on in everyone's lives. So it's kind of our time together."	12
	"And so, you know, we've got an hour, we might as well just take the whole damn hour."	13

Additionally, confidence that was linked to social support helped to protect participants from an awareness of the larger social environment and allowed for participants to place a higher value on their personal needs. This protection was important because it allowed the participants to feel free from fear of judgement. When asked to explain whose judgement she might fear, Participant 3 explained, "I don't really care about my friends. I think it's just the larger environment." Participant 4 expressed similar sentiments: "I'm not worried about my friends judging me at all. It's mostly just like the larger environment I guess." Participant 13 explained that the comfort of her friends

eased her mind about their judgements when she said, “Um, with my friends, I, I know their reactions, I don’t really care. They’re not going to, you know, ostracize me or treat me weird”. This protection from fear of judgement seemed to help by allowing for participants to prioritize their personal needs, as evidenced by the code eat whatever/however I want (see Table 2).

In addition, the comfort and confidence provided by friends seemed to build a foundation for trust, and participants tended to look to friends as a guide for monitoring behaviors and outcome expectations. For example, Participant 1 explained,

> That’s the time where I can, or like if I’m with my team and we’re all trying to like carbo-load and stuff like that, like that’s when I will be able to meet those goals and like be with other people that are trying to meet those same goals.

Similarly, Participant 9 explained,

> Usually like my friends, we all have about the same, um, like uh, needs with, uh, what we want when we go in. Um, like we’ll be talking about something that we’re in the mood for and then, uh, they will either agree or they’ll disagree.

Further evidence about the influence of friends’ support is provided by the codes not afraid of judgement by friends, friends’ influence on outcome expectations (see Table 3), and eat whatever/however I want (see Table 2).

Table 3

Codes and Examples Illustrating the Protection Provided by Friends' Support

Code	Examples	Participant number
Not afraid of judgement by friends	"I don't really care about my friends. I think it's just the larger environment."	3
	"I'm not worried about my friends judging me at all. It's mostly just like the larger environment I guess."	4
	"Like my friends, but like most of the time it's in a joking way and I know that, so like I take it with like a grain of salt, kind of thing."	6
	"I feel pretty comfortable in that group. We all, we're all very, um, good with each other and don't really judge each other much."	12
	"Um, with my friends, I, I know their reactions, I don't really care. They're not going to, you know, ostracize me or treat me weird"	13
Friends influence on outcome expectations	"That's the time where I can, or like if I'm with my team and we're all trying to like carbo-load and stuff like that, like that's when I will be able to meet those goals and like be with other people that are trying to meet those same goals."	1
	"I don't think that they do just because they, I mean I see what they eat, they see what I eat, and they don't, I don't think that they care. So it doesn't hurt my expectations."	2
	"I guess they might a little bit sometimes? Like there has been times where like someone on my team or like something is like trying to eat really healthy or something and they're very focused on it. So then like I kind of would be like thinking like, 'Oh, like maybe if like they perform better doing that, maybe I should try it' kind of thing."	6
	"Usually like my friends, we all have about the same, um, like uh, needs with, uh, what we want when we go in. Um, like we'll be talking about something that we're in the mood for and then, uh, they will either agree or they'll disagree."	9
	"And so like if she talks about it, I'm like, 'Oh, that's like kind of inspiring', I guess. Like maybe I should try that. And she's obviously very strong, so I'm like, okay, like, this is what she's putting into her body. Like maybe I should try to do some of that."	10
	"After I mimic her I'm like, 'Okay. (inaudible) broccoli wasn't super good.' But I know in the long run it's good for me cause like I said, it's fruits and vegetables and it's what I really need. So I, like I said, I-I know it's not what I want, but subconsciously I know it's what my body needs to keep going and be healthy and fuel for the next day of class and stuff."	11

Subtheme: Descriptive norms. Another important influence of friends was that they provided descriptive information that affected eating behaviors. This was distinct from increasing confidence because despite the level of comfort participants described feeling when they were with their friends, there were still behaviors that they were unwilling to participate in unless their friends served as their model. These descriptive norms seemed to provide direct evidence that it was okay to ignore perceptions based on injunctive norms or even acute current needs. For example, Participant 3 explained,

> So I usually will grab like my normal routine, but if my friend comes and sits down, I'm like, "Oh my God. Like they have like brownies." Like, um, like I'll be influenced by that and like I'll go back and like grab something if I see that my friend has something that I'm interesting in.

More specifically, these descriptive norms provided by friends allowed for participants to eat foods that they were uncomfortable choosing when they were alone. Participant 1 noted, "If they get ice cream, I'm like, 'Oh, like I'll definitely get ice cream too.' If like I was alone, I wouldn't probably do that." Participant 7 also explained,

> I've definitely gone up and gotten ice cream with my friends before just cause they were like, "All right, I'm going to get it." And I was like, "Well, I wasn't going to. And now that you're going, I'm gonna."

Participant 12 was probably the most direct about the descriptive influence of friends supporting choices she wouldn't otherwise be comfortable with when she noted, "I would never get dessert unless my friends go get dessert." Additionally, descriptive norms

seemed to encourage participants to try things they wouldn't otherwise try. For example, Participant 6 explained,

> Um, I kinda just eat what I want, but like if they like, if I'm like too afraid to try something new and they like get it and they're like, "Oh, it's really good." Then like maybe then I'll go get it kind of thing.

Participant 9 also noted, "Sometimes I will see what they got and I'm just like, 'Oh, that looks really good.' Uh, so sometimes I will go and try it or try a similar thing." Participant 11 also described an example of using descriptive norms of friends as a support mechanism for trying new things:

> Um, it's just because she's vegetarian, she usually does go for a lot more of the vegetables and stuff. Um, and I usually try to put a little bit on my plate, but even if I look at like some broccoli and I'm like, "Oh, this doesn't look good." If she eats it and she's like, "Oh, it's decent," I'd be like, "Okay, I take your word for it, let me try a piece of it."

These data support that participants value and trust the opinions of their friends, which encourages them to model their behaviors after those friends. Further evidence for this is provided by the code following descriptive norms of friends in Table 4.

Table 4

Codes and Examples Illustrating the Influence of Descriptive Norms of Friends

Code	Examples	Participant number
Following descriptive norms of friends	"Um, sometimes when they eat stuff like I'll definitely think about it. Like I've had like my friends get something and I'll like try it and I'll definitely want to go get it. Um, or like if they get ice cream, I'm like, 'Oh, like I'll definitely get ice cream too.' If like I was alone, like I wouldn't probably do that."	1
	"So if I saw like my friend *friend's name* getting a salad, I'd be like, 'Oh, I should probably get a salad too to try and stay healthy like her.' Or then when they get pizza I'm like, 'Oh, she's not getting any salad today. We can probably get the pasta instead,' or stuff like that."	2
	"So I usually will grab like my normal routine, but if my friend comes and sits down, I'm like, 'Oh my God. Like they have like brownies,' like, um, like I'll be influenced by that and like I'll go back and like grab something if I see that my friend has something that I'm interested in."	3
	"Um, I kinda just eat what I want, but like if they like, if I'm like too afraid to try something new and they like get it and they're like, 'Oh, it's really good.' Then like maybe then I'll go get it kind of thing."	6
	"I've definitely gone up and gotten ice cream with my friends before just cause they were like, 'All right, I'm going to get it.' And I was like, 'Well, I wasn't going to. And now that you're going, I'm gonna.'"	7
	"I guess I ate desert before my dinner because there were long lines and we were hungry, so we just ate that while we waited for the lines to get shorter."	8
	"Sometimes I will see what they got and I'm just like, 'Oh, that looks really good.' Uh, so sometimes I will go and try it or try a similar thing."	9
	"Well if I see like what they're having and I'm like, 'Oh, like that's a good idea,' or something, then like, I'll definitely try like what they're having, especially if they're like, 'Oh, it's good,' or, 'You should try it,' or they give me like a piece of theirs and I'm like, 'Oh, that is good. I'm gonna go up and get my own.' Like kinda stuff like that. Um, whereas like when I'm eating alone, I kind of just depend on like my own choices."	10
	"Um, it's just because she's vegetarian, she usually does go for a lot more of the vegetables and stuff. Um, and I usually try to put a little bit on my plate, but even if I look at like some broccoli and I'm like, 'Oh, this doesn't look good.' If she eats it and she's like, 'Oh, it's decent,' I'd be like, okay, I take your word for it. Let me try a piece of it."	11
	"I would never get dessert unless my friends go and get dessert."	12

The idea that participants trust and value their friends' actions and opinions is further supported by the codes friend norms support monitoring and eating healthy,

which provide evidence that descriptive norms contribute to the creation of group norms and outcome expectations about how to eat and that these group norms support monitoring of food intake and facilitate the modeling of healthy behaviors (see Table 5). For example, Participant 3 discussed the group norms within her friend group surrounding healthy eating:

> Like, cause not everyone's eating like junk all the time. So it's like less of an influence for me to be like, "Oh yeah, like they can do it, I can do it," kind of thing. So I think my little group keeps each other on track in a way.

Similarly, Participant 7 discussed how friends helped monitor and keep track of eating behaviors when she explained, "Um, we do all try to eat fairly healthy, so we do, you know, try to keep each other in check if we've been eating pretty poorly." It also seems that although descriptive norms of friends helped to support participants in eating foods that they would otherwise fear being judged for eating, such as ice cream, these descriptive norms also encouraged modeling of healthy behaviors. Participant 4 noted, "Um, I mean, I know my friends tend to eat pretty healthy and I've noticed that since I've been with them, I've been eating healthier too." Participant 7 noted a similar idea: "My diet has improved a lot since I've, I've met this friend group cause they're all like very healthy eaters." Participant 12 even provided a specific example of when she noticed the importance of modeling the healthy behaviors of her friends: "Well sometimes, sometimes if my friends are- get a salad and I'm not, I'm like, 'Oh, maybe I should get one,' and like try and eat healthy." Although there was also an influence of the larger social environment on the healthy eating behaviors of participants which I will explain

later, within the theme of friends, healthy eating seemed to have a positive connotation and be associated with positive feelings about friends. Further examples of this can be seen in Table 5.

Table 5

Codes and Examples Illustrating Group Norms and Modeling of Friends' Monitoring and Healthy Eating Behaviors

Code	Examples	Participant number
Friend norms support monitoring	"Like the two different groups I usually eat with. Like one of them like won't say anything. Like they don't really care. Um, but the other ones like they will track it cause like they're like, they're like the big guys that I'll eat with, they're like, they help with tracking cause they have certain diets that they follow and like they'll try and get me with that so that like I can gain weight."	1
	"Like, cause not everyone's eating like junk all the time. So it's like less of an influence for me to be like, 'Oh yeah, like they can do it, I can do it,' kind of thing. So I think my little group keeps each other on track in a way."	3
	"We like walk in together like through the food area and like we all like kind of like look around to see like what there is that day. And like we all, like most of the time we always like go get like salad together. It's like the first thing we go to."	6
	"Um, we do all try to eat fairly healthy, so we do, you know, try to keep each other in check if we've been eating pretty poorly."	7
	"If I know, um, I need to start evening out the junk food with the healthy food, then I'll go and do it myself. Um, I have told them before like, 'Hey, I'm going to try to ea- start eating healthier.' And they'll be like, 'Okay'. So when we go to like, uh, the cafeteria they'll sometimes be like, 'Oh, hey, the salad bar is open. Like, you should go get your salad now because you said that you want to start eating healthier.' And so that will influence me to go and get my healthy food again, um, or try to stay on track of eating healthy."	9
	"Um, I mean, like kind of like, (inaudible) my, sometimes my friends like try to eat like healthier, like talk about like a lot of things with protein in it and stuff like that. And that's like something obviously that I want to keep track of because that's like one of the better things for like building muscles obviously."	10

(table continues)

Code	Examples	Participant number
Eat Healthy	"Uh, well I try to at least eat like a good amount of vegetables and like fruit a day cause, I know I c- no longer, my mom's there like telling me, you know like, 'Yyou need to eat this,' and things like that. So and like having my friends do the same thing is nice. Like, cause not everyone's eating like junk all the time. So it's like less of an influence for me to be like, 'Oh yeah, like they can do it, I can do it,' kind of thing. So I think my little group keeps each other on track in a way."	3
	"Umm, I mean, I know my friends tend to eat pretty healthy and I've noticed that since I've been with them, I've been eating healthier too."	4
	"Like there has been times where like someone on my team or like something is like trying to eat really healthy or something and they're very focused on it. So then like I kind of would be like thinking like, 'Oh, like maybe if like they perform better doing that, maybe I should try it,' kind of thing."	6
	"Oh yeah. Oh yeah, definitely. My diet has improved a lot since I've, I've met this friend group cause they're all like very healthy eaters."	7
	"They'll like if they, if someone sees you eating a salad, some, like I've realized with, um, a lot of my friends is that they'll go and be like, 'Wow, like I should probably get a salad,' or 'Wow, like, you know what, I'm in the mood for fruit now'. Um, 'I need to watch what I'm eating, so I need to start eating some fruits and vegetables,' or 'I need to start eating more salads,' or whatever. Um, but uh, that will sometimes impact me as well. Like, I'll see someone eating fruit and then I'll immediately need to get fruit or someone that has a small salad, so I'll go and get a small salad as well."	9
	"So usually if I go with her, I try, uh things I probably wouldn't try on my own. So usually tofu, um making a salad. I usually make my own salad, but just the way she makes her salads, like no bacon bits or anything like that. Um, she convinced me to eat a piece of grapefruit and sprinkle some sugar on it."	11
	"Well sometimes, sometimes if my friends are getting a salad and I'm not, I'm like, 'Oh, maybe I should get one,' and like try and eat healthy."	12
	"They make me feel a lot better about the way I eat cause I do tend to eat a little more balanced, a little bit more like even, all across the scale. Like I, I usually have some sort of vegetable, or something not cooked to death and, or heavily processed."	13

Theme 2: Larger Social Environment

The theme that mostly represents perceptions about uncomfortable experiences in the cafeteria is the larger social environment, which may have normative and structural influences on the eating experience. The larger social environment appeared to be more important when participants felt uncomfortable. These feelings of discomfort often came from being alone, either while eating a meal or while walking through the cafeteria to choose a meal. In addition, the busy environment and the influence of the male-dominated space created feelings of discomfort even when in the presence of friends.

Regardless of what caused the participants to feel uncomfortable, these feelings were associated with an increased awareness of others beyond themselves or their friends. This enhanced awareness tended to make the participants more focused on injunctive norms and the fear of being judged. It also created a seemingly subconscious change in what was valued as immediately relevant and important. These changes in valuations were tied to the desire to decrease discomfort as quickly as possible.

Subtheme: Injunctive norms. Participants expressed that as they become increasingly uncomfortable in the cafeteria, they feel an increased awareness of the larger social environment. As Participant 3 explained,

> I think it just makes me feel more watched, I guess in a sense. Having all these other eyes like potentially on me, even if they're not actually watching me, like going to get like condiments or something, I'm like, "Oh, I have to walk in front of all of these people like across the cafeteria", like things like that.

Participant 11 also explained the awareness she had of the larger social environment when she said, "Walking up to get my tray and stuff I kind of feel like really shy cause there's uh, like 200 other people around trying to get their plates and stuff and I feel really small in the world." In addition, this heightened awareness seems to be accompanied by a loss of confidence, as Participant 12 explained:

> I mean it's, it's really not like their fault, but it's just like the sheer number of how many people there are and how many, like different, different ways I can be perceived. It just makes me less confident. Like I, I feel…I feel like, I don't know,

> like my anxiety is like high cause (inaudible) so many people that can judge me or think about me in a bad way.

Participant 10 agreed that this awareness of the larger social environment was related to her confidence when she noted,

> I don't know, like I think it's easier for people to like point me out or not really point me out. But like if, like I said, like if I'm alone, then people are more likely to be, I guess drawn to me. Cause like it's kind of obvious when someone's sitting alone in the cafeteria and you see them. And then you're like, "Oh, like what are they…" you're just like looking at them I guess. And you're like, "Oh, like what are they eating?" So that would be like, kind of something like a key factor that would make me feel like less confident, I guess?

Participant 2 put this awareness and confidence in the context of her fear of judgement when she noted, "you want your confidence to be high and then you think about what you're eating because you don't want them to judge you and then your confidence goes down even more." This highlights the idea that as awareness of the larger social environment increases and confidence decreases, participants are more likely to be aware of perceived injunctive norms and recognize their fear of being judged by others in the context of the larger social environment. Participant 5 explained, "I'm always scared that people are going to judge me for like what I have on my tray." When prompted about the link that Participant 12 explained feeling between her eating behaviors and the larger social environment, she explained,

> Yeah, it definitely, definitely does affect that. Like, um, if, like I said, if there was like, if it was just me and my friends eating, like I wouldn't have that issue, but just because of the sheer number of people and so many people could be judging me and I, I do sometimes choose to eat less than I probably should

In addition, Participant 3 explained that her awareness of these perceived injunctive norms and her ability to model them helped to increase her confidence when she explained, "I don't know uh, I guess like anxious about people watching me thinking like they're judging me versus them being like, 'Oh look, she's eating a salad. Like good for her' kind of thing." These findings support the importance of perceived injunctive norms in protecting confidence in the larger social context of the cafeteria environment. Evidence about heightened awareness of the larger social environment and its influence on confidence, fear of judgement, and awareness of perceived injunctive norms is presented in Table 6.

Table 6

Codes and Examples Illustrating Discomfort, Environmental Awareness, and Heightened Fear of Judgement Based on Perceived Injunctive Norms

Code	Examples	Participant number
Confidence and environmental awareness	"Definitely like when I'm trying to pick things because like I just get very nervous in like groups and stuff. So like if I'm, I like, I won't wait in a line. Like I don't want to have to stand there alone and wait in the line for something. I'd rather just like grab whatever like from the salad bar cause that's always empty. So, um, yeah, it's like a big group of something. I will just avoid it."	1
	"So like I know that some sports teams have specific tables that they like. So if you're sitting near that then- or if you take their seat, they can be upset or like that's a huge factor and you're like, 'Oh, I don't want to sit next to this sports table. They're kind of crazy or they'll judge you.' And you don't want, I mean I'm not as confident as most people, so… you want your confidence to be high and then you think about what you're eating because you don't want them to judge you and then your confidence goes down even more."	2
	"I think it just makes me feel more watched, I guess in a sense. Having all these other eyes like potentially on me, even if they're not actually watching me, like going to get like condiments or something, I'm like, 'Oh, I have to walk in front of all of these people like across the cafeteria,' like things like that"	3

(table continues)

Code	Examples	Participant number
Confidence and environmental awareness	"I definitely, one of the big things for me is I don't like eating alone there. I don't know, it's just like a thing for me. So when I have my like friends there and I'm meeting with them, even if it's just like one other person or like, um, I get there and like I find someone I know, I definitely would say like, I'm more confident eating there. Like versus then like if I go there by myself then I'm like, Oh, like where am I going to sit by myself and like other things. So I feel like I'm more like aware when I'm by myself there, I guess."	6
	"I don't know, like I think it's easier for people to like point me out or not really point me out. But like if, like I said, like if I'm alone, then people are more likely to be, I guess drawn to me. Cause like it's kind of obvious when someone's sitting alone in the cafeteria and you see them. And then you're like, 'Oh, like what are they…' you're just like looking at them I guess. And you're like, 'Oh, like what are they eating?' So that would be like, kind of something like a key factor that would make me feel like less confident, I guess?"	10
	"Walking up to get my tray and stuff I kind of feel like really shy cause there's uh, like 200 other people around trying to get their plates and stuff and I feel really small in the world."	11
	"I mean it's, it's really not like their fault, but it's just like the sheer number of how many people there are and how many, like different, different ways I can be perceived. It just makes me less confident. Like I, I feel…I feel like, I don't know, like my anxiety is like high cause (inaudible) so many people that can judge me or think about me in a bad way."	12
	"Um, some days I feel a little awkward just snagging a table because I ended up getting out 15 minutes earlier than my friends out of class and I went and snagged, you know, a decent table and you get those looks like, why are you sitting there by yourself?"	13
PIN awareness high when confidence is low	"Since I do have low confidence, I would say like the large group setting like will affect me as like- no matter what I'm doing. Like I'll just constantly be thinking like, 'What if they're looking at me?' Like I know they're probably not, but like in my head they are like, I'm like, 'Oh, they're looking at me, they're looking what I'm grabbing, like looking where I'm going when I'm going to sit alone,' or something."	1
	"Um, I guess like also when you're walking in the cafeteria and you don't know what to choose, people will look at you and think about stuff. So, um, I was walking and I was first going to wait in line for, I think it was chicken nuggets, but then I was like, 'Oh, there's a lot of people standing around and I don't want anyone to judge me so I'll probably just get a bagel instead, that's easier and I'll be in and out.'"	2
	"I guess it makes me feel more confident in some ways because I see like other girls are like eating the same thing as me."	3
	"I guess what people like would view as like, stereotypically like healthy of like what you should be eating. Um, so like if you're like eating salad or like something healthier compared to like, if like all you wanted that day was like ice cream"	6
	"Again, the health culture is really, really big there on the healthy eating. So you know, if I'm getting, you know, in line for pizza when everybody else is, you know, getting the salad and you know, the roast pork that's for dinner, I've been like, okay, I should probably go get something a little bit better than pizza."	7
	"Like when in front of my friends, like I don't really care, like, you know, but…and like, I don't really care how much I eat. But when I'm around like people I don't really know, I don't want them to be like, 'Oh wow, like she eats a lot,' or you know, or like, 'Oh, like why would she be eating that?"' Or like, 'She's just eating that?' You know, like those kinds of things. So I just kind of, I dunno, it does feel a little more uncomfortable than with like people I'm close with."	10
	"How, how I look like how I think others perceive me as looking. Um, if I…like how many calories I'm gonna consume, like I feel like I need to watch that sometimes."	12

(table continues)

Code	Examples	Participant number
Fear of judgement based on PIN	"I'd probably be a little more nervous on like how much I got to eat, cause I wouldn't want anyone to judge me or think, 'Oh this girl is eating a lot,' or 'Oh, she has only unhealthy things on her plate.'"	2
	"I don't know uh, I guess like anxious about people watching me thinking like they're judging me versus them being like, 'Oh look, she's eating a salad. Like good for her,' kind of thing."	3
	"I think I'm more likely direct to what other people might be judging me for, cause I generally don't tend to care what other people are doing."	4
	"Definitely like I'm always scared that people are going to judge me for like what I have on my tray."	5
	"The first semester I was definitely not as likely to go up and get seconds if I was still hungry just because I was like, wow, I don't want to be that person, like I already came out with a full tray of food and like I still want more"	7
	"Um, just like judgmental people, I guess. Like, just like a lot of like, I feel like a lot of the guys at our school who are like jock-y can sometimes be a little like judgmental when it comes to that kind of- just like stuff in general. So I'm like, if there's a lot of them in the cafeteria, I'm like, 'Oh, I don't want to walk by them with this huge tray.'"	10
	"Yeah, it definitely, definitely does affect that. Like, um, if, like I said, if there was like, if it was just me and my friends eating, like I wouldn't have that issue, but just because of the sheer number of people and so many people could be judging me and I, I do sometimes choose to eat less than I probably should"	12

Note. PIN = perceived injunctive norm.

It seems that when participants were more aware of the environment and perceived injunctive norms, they were more likely to eat healthier options. This seemed to be based on the fear of judgement and a concurrent need to model perceived injunctive norms to mitigate this fear, rather than the trust of friends as described above. For example, Participant 2 explained,

> I think it definitely just makes you think about what others or what you want others to see about you. Cause, I mean everyone's looking around during lunch so you're not alone and you think about the choices you have to make and how you, I know I'm an overthinker so I'll be like, "Oh, if I get salad then everyone will think that I'm eating healthier today and then hopefully no one will judge me".

Similarly, when asked about how the larger social environment influences eating habits at mealtime, Participant 3 noted, “I don't know uh, I guess like anxious about people watching me thinking like they're judging me versus them being like, ‘Oh look, she's eating a salad. Like good for her,’ kind of thing.” This need to monitor based on norms surrounding healthfulness of food may be heightened by the transition to the new social environment, as suggested by Participant 9 when she explained,

> Um, but I don't think really other than like at the beginning, where I was more nervous to go like either by myself cause I didn't know anyone, um, or just meeting new people, it kind of did affect my eating cause I was just like, I don't want to be like either like a pig or showing that I don't eat enough either. So I was trying to measure it as much as like what other people were eating at first.

Although this modeling of perceived injunctive norms may be important, this needs to be explored further because there is much more robust evidence presented in subsequent sections to support that the awareness of the larger social environment is more likely to create behavioral changes that help to limit discomfort rather than control the likelihood of judgement. Where injunctive norms may be relevant is in the development of habits within the cafeteria, which proves especially valuable in navigating the uncomfortable larger social environment, likely because they tend to help participants establish a baseline ability to align behaviors with health norms and cultural norms. For example, Participant 4 noted, “Normally, I’ll either get like a salad with chicken or pasta with a salad on the side.” Similarly, Participant 5 explained, “I always get a salad. Always. I get salad and fruit every single time.” Participant 8 said, “I usually

always try to get like a bowl of fruit." All participants mentioned eating fruit or salads frequently, and some specifically put that choice in the context of the health culture at the institution. This is illustrated by Participant 7, who explained, "Like I sit down and I'm like, 'Okay, this is the third night in a row I've had pasta, I should probably go get a salad, too.'" She followed this with an explanation about the health culture: "Like it's, it's a really big thing there. Like, people still eat pizza, but you'll see a lot more salads." In this way, establishing habits that incorporate frequently choosing fruit and vegetables may have helped participants to ensure they were aligning their behaviors with the perceived injunctive health-related norms of the setting. This also helped in limiting the need to make decisions while in the cafeteria. Evidence about health-focused habits is provided in Table 7.

Table 7

Codes and Examples Illustrating the Importance of Habits in Navigating the Larger Social Environment

Code	Examples	Participant number
Habits	"So usually I walk in and then um, I'll grab a salad for dinner. Like I always start with a salad."	1
	"I mean, I know that if I eat bad, I will, it will be really unhealthy for me and I'd probably gain a lot of weight. So I started eating salads and sandwiches every day, like I told you before, but I don't think that that was a consequence or like affected by how my expectations changed."	2
	"I think it does just kind of boil down to me being picky because like if it's lunch, like I usually eat a salad or I'll eat like a sandwich and like I'll go and have the lady like help me make a sandwich and things like that. But I never really tried the other options."	3
	"Umm. Normally I'll either get like a salad with chicken or pasta with a salad on the side."	4
	"Or, um, I always get a salad. Always. I get salad and fruit every single time."	5
	"I normally like go in line and get food. I normally get like a salad and then whatever really is offered at like, one of like the main things. Which I feel like most of the time is like rice and chicken."	6
	"I usually always try to get like a bowl of fruit."	8
	"If I know that I've been either eating a lot of junk food or a lot of unhealthy food, I'll tend to go and be like, 'Okay, I need a, I need to have a salad,' or, 'You know what, I'm in the mood for an apple,' and I'll grab an apple or a banana. Um, they do have a fruit bar, so, and I'm a big fruit eater, so I usually try to eat fruit with breakfast and sometimes I'll grab it for lunch and dinner."	9

(table continues)

Code	Examples	Participant number
Habits	"Um, what I eat depends on what's there. But usually I don't… like I don't like the main meal because it has meat in it. So I'll usually always get salad or pizza or pasta."	12
	"I usually scope out what's for offer depending on the day. So if there's something that looks good at the hearth or whatever you call it, I usually check out what's on for soup. And then I usually grab a medi…small to medium sized salad. And then usually some sort of protein and then whatever else looks good."	13

Subtheme: Avoiding discomfort. Although the heightened awareness of injunctive norms and the potential for judgement may contribute to the desire to avoid discomfort, this subtheme is distinct because it seems to more directly drive behavioral changes in the cafeteria. Participants noted a similar subset of behavioral responses to an increased awareness of the larger social environment, which all seemed to be related to their desire to minimize the discomfort associated with this context rather than minimizing their risk of being judged. These behavioral adaptations included a likelihood to choose food and eat food more quickly and to eat less. For example, Participant 4 explained, "When I'm in there, like my anxiety tends to be really high so I don't eat as much." Participant 6 described it in terms of her willingness to respond to her own hunger when she noted, "I guess like just like the amount of people depends on like, if you like get up and go get more." Participant 8 explained her desire to eat less and lessen her time in the cafeteria when she explained,

> Like, if I were to sit like by myself, I guess just seeing like, everyone like talking and being with their friends could impact on like not eating as much and wanting to get out of that like situation faster.

Participant 1 also suggested that eating quickly and eating less were both important when trying to remove herself from the cafeteria environment,

> Um, I think I do probably eat more when I'm with my friends cause I know like I'll have extra time cause like we'll all go together and like I won't have to be thinking, like if I'm alone like between meals, like I just want to get it done as quick as possible. Like I don't want to be sitting there alone trying to eat.

In addition, participants also noted an increased likelihood to sit in a place where they were more inconspicuous. For example, when asked about eating with acquaintances, Participant 1 described, "I'm more a person that would just eat alone like by the windows," suggesting that she would place herself around the edges of the room to avoid being in view of others. Participant 3 noted something similar, even when eating with her friends: "So we usually eat in like one of the booths or like towards the windows. We don't usually eat in like the center of it." Participant 12 also explained that she would position herself to be less noticeable to those who made her uncomfortable when she noted,

> If I see like those people, I will sit facing away from them cause I've very self-conscious and I don't want them to see me eating like that's something I'm self-conscious about. So I will sit with my back to them.

Evidence about how the larger social environment influences eating behaviors can be found in Table 8.

Table 8

Codes and Examples Illustrating the Influence of the Larger Social Environment on Eating Behaviors

Code	Examples	Participant number
Eat/choose less	"Yeah, I'm more focused on if I'm not with people, I'm more focused on like, well where am I going to sit? How much like, should I eat before I can just like leave, like how much can I get to like sustain me?"	1
	"Um, I'd probably be a little more nervous on like how much I got to eat, cause I wouldn't want anyone to judge me or think, 'Oh this girl is eating a lot,' or 'Oh, she has only unhealthy things on her plate.'"	2
	"Uh, like going back for seconds, and things like that. Like I feel like there's so many people in there and I'm like, I guess I get like social anxiety and I'm like, 'Oh God, they're going to notice. Like I'm going back to get more food.' And like, sometimes I like feel that way so I won't go back."	3
	"I guess it could kind of influence it just cause like when I'm in there, like my anxiety tends to be really high so I don't eat as much cause like, just- I don't know how to explain it."	4
	"I shut down if I know someone's judging me or something, I shut down and then like close up and then like lose my appetite and everything. So it's hard for me to eat. And like that's- if I ate alone at chow, I would eat in like a little corner where I can't see anyone because if I know someone's like staring at me, then I, I won't eat, which is why a lot of the times I don't go to chow alone."	5
	"So I guess like just like the amount of people depends on like, if you like get up and go get it more."	6
	"Um, I know at the beginning of the first, excuse me, the first semester I was definitely not as likely to go up and get seconds if I was still hungry just because I was like, wow, I don't want to be that person, like I already came out with a full tray of food and like I still want more."	7
	"Like, if I were to sit like by myself, I guess just seeing like, everyone like talking and being with their friends could impact on like not eating as much and wanting to get out of that like situation faster."	8
	"Um, just like judgmental people, I guess. Like, just like a lot of like, I feel like a lot of the guys at our school who are like jock-y can sometimes be a little like judgmental when it comes to that kind of- just like stuff in general. So I'm like, if there's a lot of them in the cafeteria, I'm like, 'Oh, I don't want to walk by them with this huge tray.'"	10
	"Yeah, I, I definitely, if, if they weren't there I would definitely eat more food and I would probably go more often."	12

(table continues)

Code	Examples	Participant number
Eat/choose quickly	"Um, I think I do probably eat more when I'm with my friends cause I know like I'll have extra time cause like we'll all go together and like I won't have to be thinking, like if I'm alone like between meals, like I just want to get it done as quick as possible. Like I don't want to be sitting there alone trying to eat."	1
	"I guess it sort of would influence it because like, I want to just like get my stuff and get out of there instead of like spending more time like looking around and whatnot."	4
	"And like if I was eating alone, I'd eat as fast as I could to try and get out as soon as I could."	5
	"Um, so if-if I go to eat by myself, I'm more likely to kind of stick to the edges, like the smaller seats by the windows just so I can kind of get in, get out and kind of stay out of people's way."	7
	"So I'd kinda just like get something and then like, go back to like my table to make it as fast as I could. Um like, I don't want to get in anyone's way or (inaudible) the rooks or something. So it made me feel a little bit pressured to just find something, go sit down."	8
	"Uh, if I'm eating with someone that I don't know as well, I tend to eat faster, I guess."	9
	"And then if I don't have like class with my friends, then I'll just find like a quiet space and eat alone really quick."	10
	"Um, I wouldn't say I really change my behavior, but I have like a [partner institution] cylinder bottle and it keeps things cold. And what I like to do is like make my own milkshakes, so I'll like scoop the ice cream in there and put some milk and shake it up. Um, there happened to be a long line one day because the hole for the bottle is really small so it takes me a little while to get enough ice cream in there. And I kind of felt like people were judging me like, 'Oh my gosh, it's just taking forever.' So I kind of scooped a little faster and then didn't put as much ice cream, but I didn't change my behavior completely."	11
Be hidden/away from others	"Um, no, not really. I'm more a person that would just eat alone like by the windows."	1
	"Um, so like I know that some sports teams have specific tables that they like. So if you're sitting near that then- or if you take their seat, they can be upset or like that's a huge factor and you're like, 'Oh, I don't want to sit next to this sports table. They're kind of crazy or they'll judge you.'"	2
	"Yeah. Um, so we usually eat in like one of the booths or like towards the windows. We don't usually eat in like the center of it. I feel like that's more of like the men. Um, and I feel like that drives us away. So we sit like towards the windows and we usually sit there for like every meal, even if I'm alone."	3
	"And like that's- if I ate alone and chow, I would eat in like a little corner where I can't see anyone because if I know someone's like staring at me, then I, I won't eat, which is why a lot of the times I don't go to chow alone."	5
	"So I'm sure you're no stranger to the fact that [partner institution] is predominantly male, there's just a lot of testosterone and just kind of, physical energy *laughs* in there and it's just a little bit intimidating to walk through that, as a small female sometimes. Um, so if-if I go to eat by myself, I'm more likely to kind of stick to the edges, like the smaller seats by the windows just so I can kind of get in, get out and kind of stay out of people's way."	7
	"It's just- like, the only time I really feel like unconfident is like when I am eating alone in the cafeteria cause it's just like, I dunno like sitting alone in front of everyone. And then- so, when I do like actually eat alone, I usually like (inaudible) like one of the really private spots where like not a lot of people can see me cause I'm like, 'Oh, I don't want people to be like she's eating alone, like that's so lame.'"	10
	"It's just the, and also if I see like those people, I will sit facing away from them cause I'm very self-conscious and I don't want them to see me eating like that's something I'm self-conscious about. So I will sit with my back to them."	12

One of the important outcomes of changing eating behaviors to avoid discomfort in the cafeteria is that participants were less likely to choose foods based on their monitoring practices and outcome expectations when prioritizing the need to avoid discomfort. This subtheme represents the ways in which the larger social environment, through means beyond normative information, influence monitoring and outcome expectations. For example, Participant 1 noted,

> If I'm not with people, I'm not got to be able to accomplish it. If there's a large, if there's a large amount of people in the caf and I'm alone, I won't be able to accomplish those goals that I've set for myself.

Participant 6 explained how the larger social environment undermined her ability to choose foods based on her personal outcome expectations when she described,

> I guess if like there's like not enough food or if they like run out of something or like there's a long wait. I'll- that's like the only time I feel like it really affects like my choice that I would make.

Similarly, Participant 7 explained,

> Like back to the, if I have like eaten pasta two nights in a row and I'm like, "okay, I should probably get a salad" but the salad line is really long, I'm still more likely to go get another bowl of pasta than to wait in line for a salad.

The likelihood for participants to prioritize their personal needs based on goals and expectations decreased based on the inconvenience and lack of comfort caused by the larger social environment. In these cases, behavior seemed to more closely align with

decreasing discomfort and inconvenience. Evidence supporting the influence of the larger social environment on monitoring and outcome expectations is provided in Table 9.

Table 9

Codes and Examples Illustrating the Influence of the Larger Social Environment on Monitoring and Outcome Expectations

Code	Examples	Participant number
Convenience/comfort > monitoring/outcome expectations	"Um, if I'm not with people, I'm not going to be able to accomplish it. If there's a large, if there's a large amount of people in the caf and I'm alone, I won't be able to accomplish those goals that I've set for myself."	1
	"And then when you walk in it's usually pretty busy. Definitely around lunchtime. If you go around 12 it's extremely busy and sometimes that can be very chaotic and then the lines are really long. So you just go to like the easier choices, which are like cereal and bagel cause you get to make that yourself and it's faster instead of waiting in some of the really long lines."	2
	"It just boils down to like feeling watched, um, in a way. Cause like sometimes I will just like not grab something because of like, maybe the line is so long. And I'm like, Oh God, like I'm not even gonna wait and try and do that. Like I'm just going to go grab something that's like quick and easy."	3
	"I guess if like there's like not enough food or if they like run out or something or like there's a long wait. I'll- that's like the only time I feel like it really affects like my choice that I would make."	6
	"Like back to the, if I have like eaten pasta two nights in a row and I'm like, okay, I should probably get a salad but the salad line is really long, I'm still more likely to go get another bowl of pasta than to wait in line for a salad."	7
	"Usually the lines I guess determine how much I eat, cause I'm not very patient, so I just go to the shortest line and get whatever and then go sit down."	8
	"Like if I am feeling like extremely uncomfortable one day or just, you know, feel awkward about sitting alone or whatever, then I could have a smaller meal then what I would hope that I was having or like my goal for like my tracking I guess or my calorie intake. So it's just like, I mean, that could affect, obviously that could affect how many calories I take in if I'm having smaller meal. Because of feeling uncomfortable, I guess?"	10
	"So definitely the bigger environment, there's more people in the cafeteria. I don't wait as long or feel like I need to wait as long for whatever they're serving."	11
	"And so if there's lots of people there, I physically am not going to wait in that line. I don't have the patience for that."	13

Results in Context

Based on the thematic analysis of the data, I answered my research questions as follows:

RQ1: What are the perceptions of freshmen women about how the social environment influences their eating behaviors on a college campus? Based on the freshmen women who were interviewed, the perceptions were that when the eating environment included friends, the environment was supportive and provided meaningful descriptive information that helped to guide eating behaviors and monitoring of eating behaviors. This facilitated modeling and monitoring of healthy eating behaviors, an increased likelihood to be comfortable with the choices made, and the chance to take time to eat and enjoy the company during a meal. When the larger social environment was intrusive, such as (a) when it was busy, (b) when the cafeteria was filled with men, or (c) when women were alone, the perceptions were that the environment created feelings of discomfort, a heightened awareness of injunctive norms and fear of judgement, and an increased likelihood to alter eating behaviors to avoid discomfort. This included eating less, eating more quickly, trying to be inconspicuous, and altering what to eat based on the convenience of the larger social environment.

RQ2: What are the perceptions of freshmen women about how social norms influence their eating behaviors during a meal in the cafeteria? The perceptions were that descriptive norms provided meaningful and useful information about how to behave when they came from a trusted source. Friends were identified as a valuable source of descriptive normative information, and modeling of eating behaviors after friends, such as type of food and amount of food, was noted as fairly common. In addition, descriptive norms from a friendly source supported the development of outcome expectations and monitoring of healthy eating behaviors. Injunctive norms were more meaningful when

there was a heightened awareness of the larger social environment. Momentarily relevant injunctive norms did not seem to facilitate modeling, although cultural health norms did help to serve as the basis for the development of habits within the cafeteria.

RQ3: What are the perceptions of freshmen women about how the social environment influences their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors? Friends helped to support and increase self-efficacy and develop group-specific norms that supported monitoring and outcome expectations related to food and eating. When awareness of the larger social environment was heightened, it served to decrease self-efficacy and undermine both monitoring and outcome expectations.

RQ4: What are the perceptions of freshmen women about how their self-efficacy, self-monitoring, and outcome expectations of their eating behaviors influence their susceptibility to the social environment? When participants ate with their friends, they felt that their self-efficacy was high and their likelihood to value their monitoring and outcome expectations was also high. This supported their likelihood to model their eating behaviors based on these personal values and feel that the social environment wasn't influencing their values. When there was a heightened awareness of the larger social environment, their self-efficacy was decreased and they lost sight of the importance of their monitoring and outcome expectations, so these values were no longer protective of their eating behaviors in this context.

Discrepant Cases

There were two key ideas that appeared to diverge from the thematic analysis. One, which was reflected in the responses of two participants, was that a heightened awareness of the larger social environment was not necessarily associated with a fear of judgement or an increased awareness of perceived injunctive norms. Upon further evaluation of the responses of these participants, it was identified that unlike other participants, they noted an increased awareness of the descriptive norms provided by the larger social environment when they became more aware of this context. This suggests that these participants were still less comfortable upon heightened awareness of the larger social environment and sought additional information about how to behave, however, this behavior guide was not based on fear of judgement. What is interesting about these two participants is that their baseline self-efficacy was higher, without considering the context of the cafeteria. Both of these participants explained this self-efficacy as driving their food choices, and their experiences were very much focused on their own needs and preferences. Although friends were still able to heighten the self-efficacy of these participants, they were more likely to change their behaviors based on descriptive information and inconvenience created by the larger social environment. This highlights the importance of building self-efficacy of eating behaviors, which can be facilitated through social support and seems to be a critical component in the protection of eating behaviors from the influence of the larger social environment.

The second divergent pattern was that friends were unable to protect participants from an increased awareness of the larger social environment. Three participants

described their experiences eating with friends as important in increasing their comfort and confidence, but they were still consistently influenced by fear of judgement by the larger social environment even in the presence of friends. What was interesting about this subset of participants was that their baseline self-efficacy was considerably lower than the other participants. Each of these participants described unique experiences related to others' opinions of them that seemed to contribute to individual body image concerns and low overall self-efficacy in their behaviors that contribute to their body image. This isn't blatantly divergent from the thematic analysis, but it was interesting to consider how low, moderate, and high baseline self-efficacy, independent of the social context within the cafeteria, seemed to contribute differently to experiences navigating the social environment during a meal.

It is important to note that although some participant perceptions and experiences diverged from others as represented by my thematic analysis, there were no examples of wholly discrepant cases. For example, in cases where the awareness of the larger social environment was not related to an increase in fear of judgement, there was still a heightened awareness of that larger social environment that facilitated behavior changes, and friends were still able to provide support and increase confidence in this context. In cases where friends were not as protective of individuals from the influence of the larger social environment, participants still did perceive that their friends helped to protect them and increase their confidence.

Summary

In this study, I conducted semistructured in-depth interviews with a purposeful sample of 13 freshmen women to explore their perceptions about how they experienced eating in the social setting of the cafeteria during their first year in college. I used inductive coding and thematic analysis guided by constructs of the SCT and social modeling of social norms to understand and ascribe meaning to these experiences. The data represented two key themes in the context of social environment and eating behaviors: the friend environment and the larger social environment. Friends were likely to increase comfort and self-efficacy and serve as a trusted source of descriptive information. This helped freshmen women to feel supported in their personal eating and monitoring behaviors and encouraged them to model healthy behaviors after their friends. A heightened awareness of the larger social environment caused an increased awareness of perceived injunctive norms and fear of judgement. Resulting behavioral responses often occurred in order to decrease the discomfort associated with the heightened awareness of the larger social environment. In the final chapter, I will discuss the relevance of these findings in the context of the theoretical underpinnings of the study, limitations of the study, recommendations for future research and application, and the overall implications and conclusions in the context of positive social change.

Chapter 5: Discussion, Conclusions, and Recommendations

Introduction

The purpose of this qualitative study was to explore the perceptions of freshmen women about how the social environment within the cafeteria influences eating behaviors during the transition to college. It has been proposed that in American institutions, students gain more weight during their freshmen year than any other year of their adult life (Yan & Harrington, 2020), and freshmen women are reportedly most likely to value healthy behaviors (Hilger et al., 2017; Plotnikoff et al., 2015; Wang, 2018) while also being more likely than men to model behaviors of others (Motteli, Siegrist, & Keller, 2017). Although recent survey data have indicated barriers to maintaining healthy weight in college freshmen (Yan & Harrington, 2020), and recent qualitative studies have explored factors that influence eating behaviors on college campuses (Deliens et al., 2014; Lambert et al., 2019; Sogari et al., 2018), there is a lack of understanding about how freshmen women experience the eating environment during the transition to college. Particularly, the perceptions about experiences within the new social landscape of the cafeteria may be critical in understanding how women develop their eating behaviors during the transition to college, and what factors may support or undermine those eating behaviors during meal time. For this study, I used a qualitative approach to begin to build this understanding of how freshmen women perceive their eating experiences in the cafeteria with a goal to develop an understanding of strategies that may provide more effective support in the development of healthy eating behaviors, both in and out of the cafeteria.

Thematic analysis of the interview transcripts from the thirteen participants highlighted that experiences of freshmen women were driven by two distinct social environments, including the environment created when they are experiencing mealtime with their friends, and the environment that is created by the larger social context within the cafeteria. When surrounded by friends, participants were more likely to have higher self-efficacy in their eating behaviors and use descriptive norms established by their friends to model eating behaviors. These group norms were particularly helpful in supporting monitoring of healthy eating behaviors. When participants were more aware of the larger social environment, they were less confident and more aware of injunctive norms and the potential for judgement based on their eating behaviors. This often caused them to prioritize the need to remove or protect themselves from the situation instead of focus on personal needs, goals, or expectations.

Interpretation of Findings

There are data showing that during the transition to college, freshmen report feelings of new autonomy, despite still assigning importance to the eating behaviors that were established at home as part of family norms and behaviors (Deliens et al., 2014; Dhillon et al., 2019). Although participants in this study did mention at-home eating norms and an increase in autonomy, this did not seem to be perceived as nearly as important during the transition to eating on campus as the development of friends and comfort. Only three participants noted feelings of increased autonomy in reference to their eating behaviors, whereas all 13 participants noted the importance of friends in their eating experience during their transition to eating in the cafeteria. This supports other

qualitative findings, which have highlighted that both living and eating with friends is a critical component that influences eating behaviors in college (Das et al., 2014; Deliens et al., 2014; Kabir, Miah, & Islam, 2018; Lambert et al., 2019; Sogari et al., 2018). Klaiber et al. (2018) found that reporting a greater number of close friends during freshman year was associated with healthier eating behaviors and improved health 2-3 years later, and that this relationship was mediated by social support. The current findings provide qualitative context for this critical relationship between experiencing social support and developing healthy eating behaviors. Participants were more likely to develop healthy goals and outcome expectations and monitor those when they consistently ate within a friendly social context that provided social support and minimized feelings of judgement. The development of group norms further facilitated social support of healthy behaviors and self-efficacy within the cafeteria context. These findings suggest that although the transition to college is important in the development of eating behaviors in freshmen women, it may be the process of building and creating a supportive friend network within the eating setting that really needs to be fostered during this time. As Harmon et al. (2016) noted, college students identify their significant others to be most influential on their eating behaviors, followed by family, college friends, and finally high school friends. Together with the current findings, these data suggest that social support fostered by closeness of relationships is important in laying the foundation to develop healthy goals and intentions around eating.

Social Cognitive Theory

The current findings provide robust qualitative evidence to support the influence of the social environment on SCT constructs during mealtime. Participants frequently noted the importance of the presence of friends as a contributor to increased self-efficacy in eating behaviors in the context of the cafeteria. In addition, participants explained that a lack of friends in the immediate cafeteria environment led to a decrease in self-efficacy in the context of choosing their meals, eating their meals, and prioritizing outcome expectations and monitoring. These mealtime decisions became harder to make, and the confidence to make these decisions decreased when participants did not have friends around to facilitate feelings of social support. This supports findings in SCT intervention studies that have been delivered in a social environment and reported increases in self-efficacy of health-related behaviors (Annesi et al., 2015; Bernardo et al., 2018; Ellis et al., 2018; Johnson & Annessi, 2017). The current findings, however, add an important point, which is that self-efficacy is tied to the eating environment directly, as evidenced by how participants perceived their self-efficacy when eating with friends versus when eating alone, or in a big crowd. Although there is evidence from SCT-based interventions to support the link between social support and self-efficacy (Annesi et al., 2015; Bernardo et al., 2018; Ellis et al., 2018; Johnson & Annessi, 2017), many of these interventions were delivered outside of the context of the cafeteria, or the eating environment itself, and they measured SCT constructs using survey data outside of the eating context as well. The perspectives of the participants in this study highlighted that their self-efficacy was linked to their social surroundings in the cafeteria, which means

that perhaps surveys addressing self-efficacy in eating behaviors should include questions that are specific to the cafeteria context, rather than only address questions that reflect broad self-efficacy of eating behaviors.

The current findings further support that self-efficacy is tied to the likelihood to respond to social norms. For example, participants were likely to note that they modeled descriptive norms when they were eating with friends and their self-efficacy was high. Conversely, they also noted that when they were not in a friendly environment, the larger social context made them more aware of injunctive norms, such as perceptions about what foods others valued as acceptable to eat, or how much food others valued to be an appropriate amount to consume at a given meal. Their reactions to this were tied to the desire to decrease the discomfort and low self-efficacy they were feeling by practicing protective behaviors like sitting in a hidden spot, or eating quickly, instead of modeling their behaviors after these perceived injunctive norms. This supports findings by Stok et al. (2014), who reported that the relationship between descriptive norms and vegetable intake in college students was mediated by self-efficacy. This suggests that descriptive norms are more relevant, and modeling of these norms is more likely, when self-efficacy is high, which the current findings suggest happens more frequently in the presence of friends.

Beyond self-efficacy, the current findings also support the importance of social influence on goals, self-regulation and outcome expectations. Although many of the participants were not able to clearly articulate strong goals or outcome expectations, and nearly none of them practiced formal self-regulation strategies, when asked to discuss

how friends influence these personal ideas about food and eating, it was clear that the development and presence of group norms had a significant influence. For example, friends' eating behaviors and normative ideas associated with those friend groups increased the likelihood of participants to identify specific goals and outcome expectations, as well as the desire to monitor eating behaviors in support of those. Interestingly, although they identified group goals and monitoring fairly quickly, they also noted that friends did not influence their likelihood to stick to those goals and outcome expectations, suggesting that the alignment of those ideals with friends and the presence of friendly support is important in promoting goal-setting and monitoring. This supports evidence by Meng et al. (2017), who found that modeling of fruit and vegetable intake after group mates was more likely to occur when group mates exhibited smaller, consistent increases in fruit and vegetable intake, rather than when group mates ate a considerably larger amount. The authors hypothesized that this alignment in group behaviors facilitated the development of similar outcome expectations and supported group monitoring.

Another interesting point to note is that when friends were not present, just as self-efficacy decreased, so did the likelihood of identifying and prioritizing goals, outcome expectations, and monitoring practices. This is an important point because it suggests that friends play a critical role in facilitating self-efficacy, goal-setting, outcome expectation, and self-regulation in the context of the cafeteria, and that those constructs are not themselves strong enough to protect eating behaviors in the cafeteria when friends

are not around. One of the most striking quotes from this data set is from Participant 1, who noted,

> Like, if you are alone, like what are you supposed to do? Like if you can't find a seat and like, especially with someone with low confidence but like high expectations for themselves. Like that's like a really hard thing.

This insightfully described the experiences that freshmen women have when they do not have the social support in the context of the cafeteria environment. This awareness of a larger social context heightens their concerns about injunctive norms and potential judgement, and they are unable to prioritize their eating values, but instead default to finding comfort.

Behavioral Modeling of Normative Information

As described above, the likelihood to model normative behaviors was closely tied to the social context during mealtime. Descriptive norms were an important source of normative information, particularly from friends. This supports findings from Stok, Verkooijen, et al. (2014), who reported that strength of identification with the normative source was an important driver of descriptive norm modeling. These norms also served as important sources of information in support of healthy and unhealthy eating behaviors. For example, several of the participants noted the importance of friendly descriptive norms in the support of eating ice cream, but they also described friendly descriptive norms in support of eating vegetables.

Few participants referred to the descriptive norms provided by others in the cafeteria that they did not know as well as their friends, which provides important

context. For example, some have proposed that norm salience drives modeling, and that college students will model whatever the relevant norm is at the time. This theory has been driven largely by remote confederate studies that have illustrated that individuals will model descriptive normative information even when they are alone in a room (Robinson & Field, 2015; Robinson, Sharps et al., 2014). The current evidence does not necessarily support the idea of norm salience in the context of the cafeteria, because modeling of descriptive norms was largely focused on the behavior of friends and in the presence of friends, but did not occur when participants were eating alone in the cafeteria. In the cases where descriptive norms of non-friends were used as a reference point, participants were likely to be in line in the process of choosing food, which Christie and Chen (2018) found was a time when college students were likely to model descriptive information of people they did not know. This was not, however, a significant code and did not contribute to any of the emergent themes of the data. The current findings support the idea that the source of normative information is valuable, and the participants interviewed were much more likely to evaluate descriptive normative information more highly when they had a closer connection to the source of the norm.

It has also been suggested that modeling of main dishes at mealtime is less likely to occur because these types of meals are more likely to have personal and cultural normative influence (Cruwys et al., 2015). Although a few of the participants noted the relevance of their personal norms in driving their healthy food choices, all but one of these participants also explained modeling of friends in choosing their meals, suggesting that perhaps immediately relevant group norms are more important than personal norms.

Indeed, many of the participants explained the importance of group norms and descriptive norms in supporting their healthy eating and the monitoring of these behaviors.

The current findings further suggest that during mealtime in the cafeteria, injunctive norms serve a purpose, although it may not be to drive modeling of eating behaviors. Indeed, these data suggest that an increased awareness of perceived injunctive norms is more related to a heightened awareness of the potential for judgement. Stok, de Ridder, et al. (2014) found that adolescents exposed to a healthy injunctive norm were more likely to decrease their fruit intake, and suggested this could be because health-related injunctive norms may increase vulnerability and the likelihood for adolescents to react in response to that vulnerability, rather than the norm. The current findings support this idea of reaction to vulnerability. In response to the heightened awareness of injunctive norms and the concurrent increase in fear of judgement, participants were more likely to change their behaviors to protect themselves, such as by sitting in a place that was hidden from plain view, eating less food and eating more quickly to remove themselves from the environment. This further suggests that the link between social influence and eating behaviors is not particularly tied to body image, but more to the comfort and self-efficacy provided by the social environment. In addition, monitoring and outcome expectations seemed to be stronger when they were very personal, tied to, and supported by friend or group norms. Although some data suggest that weight satisfaction is a motivation that drives eating behaviors (Pearcey & Zhan, 2018), overall this conception does not seem to be a highly personal outcome expectation, but rather it

aligns with larger cultural norms that are perhaps more abstract than norms developed within a friend group. This suggests that even in the development of personalized goals and expectations, injunctive norms are not highly valued. Based on these findings, injunctive norms seem to serve freshmen women as a marker of discomfort and decreased self-efficacy rather than a source of information to model behaviors and personal values around.

Limitations

As with most qualitative studies, this work is not without its limitations. A small sample of participants was interviewed, representing mostly Caucasian women from the East Coast of the United States. In addition, the unique setting of the study influences the generalizability of these findings. As many of the participants noted throughout interviews, this campus is predominately male, which may make the experiences of women somewhat unique. In addition, the strong military affiliation and presence on campus creates an explicit health-dominant culture that was also apparent to many of the participants. Although this culture itself may not influence the likelihood to model descriptive norms of friends at meal time, it does create a different set of injunctive norms surrounding eating and physical health that students on this campus are aware of. It is also important to consider that friend-group norms described by the predominately Caucasian sample may be unique to the cultural experiences and the lived experiences of the participants. Again, although cultural experiences and lived experiences may not influence the likelihood that group norms support identification of outcome expectations and monitoring of health behaviors, the norms themselves may be different, which could

influence the eating behaviors that they support. Additionally, the situation surrounding the pandemic required me to facilitate interviews using different methods, including in-person, telephone, and video-conference. There are a unique set of potential limitations that come with a shift in methodological implementation. During in-person interviews I was able to control the setting in which the interview took place and ensure that participants were comfortable. During telephone and video-conference interviews, I was unable to control the setting or surroundings of the participants, perhaps affecting their interview experiences. If others were present during our interview conversations or there were other distractions such as pets or internet connectivity issues, that may have influenced the comfort level and willingness of participants to share fully and honestly.

Recommendations

Based on the findings of this study, the social environment has a considerable influence on how freshmen women experience eating during the transition to college at the partner insitution. The participants acknowledged that it was notably the development of a comfortable social group that lead to increased self-efficacy eating in the cafeteria and establishing new eating behaviors. In addition, this comfortable group was supportive of healthy eating behaviors and developing and prioritizing personal needs, goals, and expectations, partially through providing descriptive information and facilitating the development of group norms surrounding eating. Longitudinal findings from Klaiber et al. (2018) have suggested that the number of close friends acquired during freshmen year is a predictor of overall health and healthy eating behaviors 2-3 years later, indicating that the development of a comfortable group during freshmen year has lasting impacts. It is

unclear whether upper-class women experience eating in the cafeteria the same ways that freshmen women who are new to the culture do or how the experiences during freshmen year may contribute to that. Future qualitative research should focus on understanding the perceptions of upper-class women about how the social environment influences their eating behaviors and how their experiences freshmen year may have contributed to those perceptions. This may influence how interventions are targeted towards different women populations.

Although friends seemed to support the development of group norms that helped to support monitoring and outcome expectations related to healthy eating behaviors, this study highlighted that freshmen women do not necessarily have strong or clearly articulated personal goals and expectations beyond those reflected by their friend groups. It is important to develop an understanding of how goals and expectations regarding eating behaviors are established, what makes them weak or strong, and how the social environment both supports them and undermines them. Studies that have measured goals and outcome expectations use surveys with very specific statements that participants are asked to express a level of agreement with. This may underestimate the extent to which these students are actively setting and monitoring goals and expectations, which is something that needs to be further understood. To gain insight into how these goals and expectations are developed and how best to support them throughout the development process, it may be of benefit to qualitatively explore the perceptions of freshmen women about their healthy eating intentions, goals, outcome expectations, and monitoring

practices, and seek their ideas about ways to support the development and facilitation of these practices.

What remains unclear from these findings is the relevance of norm salience in the practice of social norm modeling. Although these data support that injunctive norms are evaluated in the cafeteria as a source of information about judgement, most modeling occurs because of descriptive normative information. Nearly all participants explained examples of when this descriptive information comes from their friends, and there were also a few examples of participants referring to the larger social environment as a source of descriptive information, notably when friends were not immediately present such as when waiting in line for food. This brings into question the importance of norm salience and how that influences eating behaviors, especially during meals when the salient point of reference changes, such as between choosing food and sitting down to actually consume food. Most data addressing the relevance of descriptive norms have been based on descriptive norm messaging or remote confederate designs. A study by Christie and Chen (2018) actually measured main dish choice in the context of the main dishes being chosen by others as a marker of descriptive norm modeling in a situation where friends were not present. To my knowledge, there is no research to address how behaviors may change as norm references change. The participants in this study often explained how they would choose their food alone, and then upon sitting down and eating with their friends they would proceed to make different choices based on their friends' behaviors. This suggests a need to gain further qualitative insight into how the experiences with different sources of descriptive normative information, including normative messaging

within the cafeteria, immediately relevant descriptive norms, and larger context descriptive norms, influence eating behaviors and how college women perceive the different sources of descriptive normative information.

Implications

Due to the exploratory nature of this study, the most notable implications are for future qualitative inquiry, as described above. The study builds on previous findings that descriptive norms from a meaningful reference point are the most valuable source of information on how to behave in the cafeteria environment. These findings further suggest that in the context of the partner institution, the development of self-efficacy, practice of goal-setting, and identification of outcome expectations in freshmen women all rely on the social support of friends in the eating environment directly. These friends are critical to help establish group norms, provide a salient point of reference for descriptive norms, and foster self-efficacy, which seem to all be supportive in the identification and prioritization of goals and outcome expectations. When friends are not present, the larger social environment undermines self-efficacy, personal values, and expectations, and leads to a prioritization of decreasing discomfort. These findings suggest that in the context of a male-dominated space, the relationship between social support and the other SCT constructs (i.e., self-efficacy, monitoring, and outcome expectations) in women requires a direct provision of social support that cannot be facilitated through relationship building outside of the cafeteria environment.

Positive Social Change

This study has positive implications within the community of the partner institution. As many of the participants identified, they are aware of the strong health culture at the partner institution driven by the military and predominately male population. Although this creates a culture that is often in support of health-seeking behaviors on campus, it also influences how students, particularly freshmen civilian women, experience living on campus. Freshmen civilian students are required to live on campus and purchase an unlimited meal plan, encouraging them to eat most of their meals in the campus cafeteria. Similarly, military students have the same requirements. This creates a mealtime environment for freshmen women that is predominately male and military. This study provides insights into how freshmen women experience this and how they perceive the environment to influence their eating behaviors. This lays the groundwork for understanding the needs of women who eat in this social context. The results highlight the importance of a supportive friend group for freshmen women, particularly during mealtime to help build self-efficacy and promote value of personal needs, goals, and expectations. The study also clarifies the importance of descriptive normative information versus injunctive normative information in the cafeteria context, setting up further opportunities to study the most effective ways to promote the use of descriptive norms in the development of healthy eating behaviors. Although further work needs to be done, this is a necessary step in effectively targeting promotion of healthy eating behaviors towards women in a male-dominated space.

Conclusion

The current study suggests that the social eating environment has a critical influence on the development of eating behaviors during the transition to college. Eating behaviors are largely influenced by self-efficacy within the social environment, which is very closely tied to the presence of friends. In addition, the direct support provided by friends within the eating environment helps to facilitate the development of goals and expectations related to eating behaviors and further supports the monitoring of eating behaviors. Descriptive norms of friends provide an important source of information about how to eat and help in the establishment of both self-efficacy and group norms that are critical in the overall development of eating behaviors. Future interventions should consider how to facilitate the development of healthy and supportive friend groups within the cafeteria environment.

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Appendix A: Inclusion Criteria Questionnaire

Thank you for your interest in participating in my study about experiences eating at [name of partner institution].

To ensure your eligibility, please respond to the following questions as accurately as possible.

1. How old are you? _____
2. What is your class year at [name of partner institution]?_____
3. What is your major? _____
4. What is your lifestyle? (Corps or Civilian) _____
5. Do you eat at least one meal per day in the Wise Dining Hall?

   _____

Appendix B: Semistructured Interview Guide

MATERIALS TO HAVE PREPARED:

- Two consent forms for each participant, one for them to keep, one for them to sign and give to me
- Paper and pens for notes
- Copy of interview guide w/ questions
- iPad for recording via TEMI
- Back-up recording device
- Refreshments

INTRODUCTION:

Thank you so much for taking time out of your schedule to be here today. I am eager to learn about your experiences eating on campus and how those influence you.

I just want to remind you that this research is part of my doctoral dissertation, and my purpose is to gain a deeper understanding of your experiences, as well as your thoughts about how the cafeteria environment influences your eating decisions and behaviors. This could potentially help me understand and implement better and more effective ways of supporting you and other [name of partner institution] students in the future.

I expect that this discussion should last about 60 minutes. Although it may take less time, I will make sure to wrap up our conversation and give you a chance to share any additional thoughts and ideas that you have around 55 minutes to help protect your time. I also want to reiterate that you have agreed that you understand the purpose, benefits, and risks of this study. You have also agreed that you are an informed, willing participant and as such, you are free to leave at any time.

The last thing I would like to remind you is that our conversation will be audio-recorded so that I can create a verbatim transcript that reflects exactly what you said, not just my memories of the conversation. Are you still comfortable to begin?

TURN ON RECORDER

Do you have any questions before we get started?

QUESTIONS

Main Questions	**Probes**	**Research Question being addressed**
How would you describe your eating behaviors since coming to [name of partner institution]?	Where do you most frequently eat? Who do you eat with? Can you describe what a normal meal looks like from when you arrive to when you leave? What factors influence your eating behaviors, for example when you eat, how much you eat, what you choose to eat, etc.?	RQ1
Can you describe what it's like to eat with friends in the cafeteria?	How does eating with friends influence your eating or the choices you make at meal time? How does eating with others you don't know as well influence your eating? Can you describe a time in the cafeteria when you did something because someone else near you did? How does what others ~~do~~ choose to eat during a meal impact you? Can you think of a time in the cafeteria when you changed your behavior because you thought others	RQ2

	might judge what you were doing? How does what others think about you during a meal impact you? Can you explain when the larger social environment in the cafeteria influences your eating choices and how? Are you more likely to react to what others are doing, or how you feel others might be judging you?	
Can you talk about your confidence when you are eating in the cafeteria?	What are some key factors that affect your confidence when you're eating or making decisions about what to eat? How do you think your friends influence your confidence when you are eating? How about everyone else in the cafeteria? How does your confidence affect your likelihood to react to other people in the cafeteria?	RQ3 RQ4
What are some ways that you monitor or keep track of your health and nutrition?	IF THEY DO ACTIVELY MONITOR: How are these tracking habits influenced by the larger social environment in the cafeteria? How are these tracking habits influenced by the people you actually eat with? How do these tracking habits affect your	RQ3 RQ4

	likelihood to be influenced by other people in the cafeteria? IF THEY DON'T ACTIVELY MONITOR: Why don't you think you track or monitor your nutrition? How do you think the social environment of the cafeteria, or maybe those you eat with directly, might influence your decision or desire to monitor what you eat?	RQ3
What are some expectations you have about how your eating behaviors might affect your health or your life?	IF THEY DO IDENTIFY EXPECTATIONS: How might the larger social environment in the cafeteria influence your personal expectations? How do the people that you eat with influence your personal expectations about your diet and health? How do your personal expectations affect your likelihood to be influenced by other people in the cafeteria? IF THEY CANNOT IDENTIFY EXPECTATIONS: What are some reasons you haven't thought about how your diet may affect your health?	RQ3 RQ4 RQ3

	How do you think the cafeteria environment, or the people you eat with, have influenced your decision or desire not to consider the impacts of your diet?	
Are there any other thoughts you would like to add about your experiences eating in the cafeteria at NU?		

TURN OFF RECORDER

CONCLUSIONS

Again, thank you so much for having this conversation with me. I learned a good deal and I really value your experiences and opinions. Within the next two weeks I will use the recording to make a verbatim transcript of our conversation, which I will share with you via email. I invite you to read it over if you would like, and add additional comments or corrections if you think they would be of benefit. I will also share a final summary of my study findings with you once all of the data has been analyzed, which will likely be later this year.

Feel free to contact me with questions, you have a copy of the informed consent document with my contact information at the bottom.