Weighing In: Overweight, Working Women's Descriptions of Body Weight and Weight Management

By

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Abstract

Obesity is a growing public health concern associated with poor health outcomes, increased healthcare costs, and decreased human productivity. Women are inordinately impacted by obesity. The insidious nature of weight gain and the numerous factors (e.g., environmental, psychological, and socioeconomic) that contribute to obesity make it a complex problem to address. While government healthcare policies and initiatives focus on treating obesity to prevent secondary chronic conditions, few robust public efforts are dedicated to the prevention of obesity in adults. Some employers have responded to the need for obesity prevention with an increase in employer-sponsored weight management programs, yet program success has been inconsistent. While comprehensive individualized programs are among the most effective programs, they are also the costliest to implement across populations. Understanding body weight and weight management from the perspective of population subsets may facilitate more affordable, tailored approaches to designing effective weight management programs to prevent obesity. However, there is little information available about overweight working women's perspectives of body weight and weight management.

The purpose of this qualitative descriptive study, guided by Pender's health promotion model, was to examine overweight working women's perceptions and experiences with body weight and weight management. Eleven overweight working women aged 18 years or older who had attempted weight loss volunteered for individual, semi-structured interviews. The interview data were analyzed using deductive content analysis to answer six research questions (RQs): RQ1: How do overweight, working women describe body weight? RQ2: What are overweight, working women's experiences of weight management? RQ3 What factors contribute to weight gain according to overweight, working women? RQ4 What factors promote weight maintenance

and loss in overweight, working women? RQ5: What weight maintenance and loss methods are preferred by overweight, working women? and RQ6: What are the barriers to weight maintenance and loss for overweight, working women?

Data analysis revealed *Weight Management as a Lifestyle* depicted through six themes: Theme 1: *Beyond a Number on the Scale,* included participants descriptions of different body weights in relation to self and others. Theme 2: *A Matter of Time, Effort, and Commitment*, focused on women's perceptions of effort and weight management strategies. Theme 3: *Calories in Versus Calories Out*, contained details about behaviors and negative environmental, social, psychological influences that contributed to weight gain. Theme 4: *Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle*, described personal motivations, mindsets, behaviors, and influential factors that promoted weight maintenance or loss in overweight, working women. Theme 5: *Programs, Interventions, Techniques, and Support* delineated preferred methods of weight maintenance or loss. Theme 6, *Roadblocks: Life and Work* encompassed physiological conditions, financial, knowledge, and time constrains, along with environmental and psychosocial barriers to working women's engagement in healthy weight-related behaviors. Findings from this study provided foundational knowledge about overweight working women's perspectives on body weight, perceived benefits of and barriers to healthy behaviors, environmental and psychosocial factors that influenced weight-related behaviors and preferred methods of weight control. Insights may help inform future development of employer-sponsored weight management programs for working women.

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Second, I want to thank the faculty at the University of Kansas School of Nursing for their unwavering dedication to educational excellence. In particular, I want to express my deepest appreciation for each of my dissertation committee members. My advisor and co-chair, Dr. Teel, who offered unlimited guidance during my PhD journey and provided much needed emotional support when life got hard. My co-chair, Dr. Peltzer, who shared her knowledge of qualitative research and genuine enthusiasm for this study. To my mentor and committee member, Dr. Dunton, for our enriching conversations and whirlwind diving tours of Northwest Arkansas. And to my committee members, Dr. Bosak and Dr. Befort, whose commitment, expertise, and support helped me reach my educational goal.

Finally, I would like to thank the 11 women who willingly shared their personal experiences with me. It is through their stories that I have grown as a researcher, a nurse, and a human being – for that I am forever grateful.

Dedication

This dissertation is dedicated to my mom, Debbie Oakley, who showered me with love and encouragement throughout life; to my great aunt, Irene Paul, who instilled in me the belief that I could accomplish whatever I set my mind to do; and to my granny, Betty Cathell, who could never understand why I spent so much time in school but supported me anyway. Each of these incredible women continue to love and guide me from heaven.

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Chapter 1: Introduction

Obesity is a global epidemic, yet also is one of the most neglected public health problems that affects nearly all demographic segments of society (World Health Organization, 2018). Obesity, defined as a level of body fatness characterized by excessive deposits of adipose tissue sufficient to produce poor health (Wells, 2012), is frequently measured based on an individual's weight in relation to their height using body mass index (BMI). According to the Centers for Disease Control and Prevention (CDC) (2016), obesity is a BMI ≥ 30 kg/m^2.

The cumulative effects of excess energy intake (i.e., food and beverages) and inadequate energy expenditure (i.e., physical activity) result in weight gain and obesity over time (Hill, Wyatt, & Peters, 2012). However, the root causes of obesity result from complex interactions between physiological, psychosocial, and environmental risk factors (Frood, Johnston, Matteson, & Finegood, 2013; Fung et al., 2015). The uniqueness of individual exposure to any given set of risk factors and the variability in which risk factors interact to influence lifestyle behaviors and body weight make weight loss difficult to address and maintain (Montesi et al., 2016; Vandenbroeck, Goossens, & Clemens, 2007; Wirth, Wabitsch, & Hauner, 2014).

Further, weight gain and the adverse health effects of excess weight are insidious, making it hard to recognize the need for weight loss interventions until it is too late to easily reverse the weight gain trajectory (Fung et al., 2015; Williams, 2011). As weight gain progresses, obesity-related risk factors become increasingly potent to the point that obesity itself becomes a risk factor for continued weight gain (Williams, 2011). Given the epidemic and intractable nature of obesity, preventing obesity by addressing weight gain early is important (Chan & Woo, 2010; Wirth et al., 2014).

Clinically prescribed treatment options for excess weight include behaviorally-based counseling programs, medications, and surgery. However, policies and guidelines for preventive

services adopted by insurance companies and healthcare providers generally reserve these interventions for individuals diagnosed with obesity to reverse obesity and prevent chronic diseases like diabetes and heart disease rather than preventing obesity (Patient Protection and Affordable Care Act, 2010; U.S. Preventive Services, 2012). While public policy and clinical weight loss interventions primarily focus on treating and reversing obesity, professional and advocacy organizations are calling for comprehensive efforts that address obesity prevention in adults (; Huang et al., 2015; Williams, 2011) and have been since the 1990s (Hill & Peters, 1998).

Increasingly, employers are recognizing the negative effects of obesity on the health of their workforce, workplace productivity, and company expenses (Pescud et al., 2015). Nevertheless, without robust federal and state-sponsored public policies and interventions that target the growing concerns about obesity, employers are left to develop their own policies and implement programs that specifically address excess weight in the workforce. Between 2005 and 2017 (Kaiser Family Foundation, 2005, 2017), the proportion of U.S. employers with 200 or more employees who offered weight management programs (i.e., interventions designed for weight loss and maintenance) rose from 28% to 62%. Despite the growth of employer-sponsored weight management programs and the use of evidence-based interventions, the effectiveness of these programs has varied (Anderson et al., 2009; Goetzel & Ozminkowski, 2008; Maes et al., 2012; Mhurchu, Aston, & Jebb, 2010).

Sub-optimal outcomes have been blamed on program designs that emphasize and reward the number of pounds or percentage of body fat lost (i.e., the outcome) rather than focusing on behavioral lifestyle modifications, incremental weight changes, and supporting healthy habits (i.e., the process of weight loss) (McVey, 2016; Montesi et al., 2016; Taylor 2018). Although

prevention of obesity relies on individual lifestyle behaviors that promote a healthy diet and exercise (Chan & Woo, 2010; Stanford Health Care, n.d.), interventions designed for populations of people that directly influence individual behaviors are critical to reducing the obesity epidemic (Sacks, Swinburn, & Lawrence, 2009).

Despite the need to address individual behaviors, workplace weight management programs that over-emphasize personal responsibility as the sole cause for weight gain can have inadvertent consequences. By delivering specific diets and exercise protocols, the underlying message suggests that personal behaviors are the cause of weight gain. This approach to weight management can unintentionally elicit weight stigma, body-related shame, and guilt resulting in maladaptive responses and poor clinical outcomes (Täuber, Mulder, & Flint, 2018). Careful consideration should be given to designing and communicating programs in ways that account for systemic causes of weight gain rather than focusing on individual responsibility.

Researchers have shown that environments, social interactions, economic and psychological factors affect obesity by influencing behaviors (Vandenbroeck et al., 2007); however, information is needed to better understand why and how these factors impact specific weight-related behaviors that lead to obesity in defined populations before effective interventions aimed at obesity prevention can be developed (Chan & Woo, 2010; Garip & Yardley, 2011; Yanovski & Yanovski, 2018). Although, individualized comprehensive weight management programs are considered among the most effective approaches (Goetzel & Ozminkowski, 2008; Moyer, 2012; Pelletier, 2011), personalized hi-intensity programming can be expensive to implement across a population (Gudzune et al. 2015). Acquiring an understanding of the weight management needs of population subsets may promote a less expensive way of tailoring population-level interventions that prevent obesity.

As the prevalence of obesity in women and ratio of women in the workforce continues to outpace men, adult females are an increasingly important segment of the workforce (Toossi & Morisi, 2017) who stand to greatly benefit from effective weight management programs in the workplace. Since 2010, the rate of obesity in American women increased from 36% to 40% (Flegal, Kruszon-Moran, Carroll, Fryar, & Ogden, 2016). Once a woman becomes obese, her odds of losing just 5% of her body weight without surgery is 1 in 7, and the odds increase to 1 in 124 when she tries to attain normal body weight (Fildes et al., 2015). A subset of working women with insights about weight management and obesity prevention are overweight women (Garip & Yardley, 2011) who are trying to lose or maintain weight to avoid obesity or, who have been obese and are working to prevent the regain of weight. These women have experienced successful and unsuccessful weight management interventions and have insight into the environmental and social factors that influence weight-related behaviors. The information gleaned from overweight working women could promote improved understanding about obesity prevention that has largely been unexplored among this population of women.

Significance of the Problem

The public health concern around obesity stems from the growing prevalence, the physical and emotional burden of excess weight on the health of society, and the negative effect of obesity on financial outcomes for individuals, businesses, and the economy. Between 1980 and 2014, the prevalence of obesity in the United States increased from 15% to 42% (Hales, Carrol, Fryar, & Ogden, 2020; Ogden, Yanovski, Carroll, & Flegal, 2007). Experts project that 50% of adults in the U.S. may be obese by 2030 (Finkelstein et al., 2012; Wang, Beydoun, Liang, Caballero, & Kumanyika, 2008). When obese adults are grouped with overweight (BMI 25 to < 30 kg/m^2) adults, more than 70% of adults in the U.S. are burdened by excess weight

(NIH, 2017). By 2030, the prevalence of overweight and obesity in adults is projected to reach 85% (Wang et al., 2008).

The prevalence rates for each category of weight vary by gender, race/ethnicity, and age. A greater proportion of adult men are overweight (39%) compared to adult women (27%) (NIH, 2017) and the proportion of adult women and men with obesity are not significantly different (42% and 43% respectively) (Hales et al., 2020). The rate of extreme obesity for women, however, is nearly twice the rate for men (12% and 7% respectively) (Hales et al., 2020). In the U.S., Non-Hispanic Black women and Hispanic women 20 years of age or older have higher rates of obesity than non-Hispanic White women, 57% and 44% respectively, compared to 40% (Hales, Carroll, Fryar, Ogden, 2020). Non-Hispanic Asian adult women have the lowest rate of obesity (17%) (Hales et al., 2020).

Between 2008 and 2012, the rates of obesity increased in nearly every age group from 18 to 88 years of age (Mendes, 2012). For each year between the ages of 18 and 35 years, obesity rates steadily increased from 14.4% to 26.5%. Each year between 36 to 67 years of age, obesity remained relatively stable increasing from a low of 28.8% to a high of 31.7%. Finally, a consistent decline occurred each year between 68 and 88 years of age with obesity rates decreasing from 29.3 % to 9.9%. The predominant period of weight gain and ascension into obesity coincided with the prime ages of employment, 18 – 67 years of age (Mendes, 2012).

National trends indicate that women of working age are experiencing a greater prevalence of obesity than other subsets of the population. To better understand why working women are inordinately impacted by obesity and to support their efforts to prevent obesity, information is needed to elucidate the experiences of working women trying to manage their weight prior to becoming obese.

Physical and Psychological Burden of Obesity

The increasing prevalence of obesity combined with the growing number of chronic health conditions linked to excess weight is concerning for the overall health and well-being of the nation. Overweight and obesity are leading risk factors for chronic diseases, including hypertension, heart disease, and type II diabetes mellitus (NIH, 2017). By 2030, obesity is expected to result in 8 million excess cases of diabetes and 6.8 million excess cases of cardio- and neurovascular disease (Wang, McPherson, Marsh, Gortmaker, & Brown, 2011). During the coronavirus pandemic of 2020, researchers identified obesity as a risk factor for greater morbidity and the need for hospitalization when infected with the virus (CDC, 2021). Obesity also is linked to sleep apnea (Franklin & Lindberg, 2015), osteoarthritis (Deshpande et al., 2016), infertility (Talmor & Dunphy, 2015), gallbladder disease, gastroesophageal reflux (Dixon, 2010), and Alzheimer's disease (Profenno, Porsteinsson, & Faraone, 2010). Not only is obesity a major risk factor for certain breast, endometrial, and ovarian cancers in women, it also reduces the effectiveness of standard cancer treatments resulting in poorer prognoses and increased metastatic disease (O'Flanagan, Bowers, & Hursting, 2016). Compared to smoking, obesity has an equal, if not greater impact on the overall burden of disease in the United States (Jia & Lubetkin, 2010).

In addition, obesity is associated with negative psychological consequences such as impaired body image, low self-esteem (Chu et al., 2018), and depressive disorders (Brewerton, O'Neil, Dansky & Kilpatrick, 2015; Luppino et al., 2010). White women with obesity have a greater risk of developing depression (Rajan & Menon, 2017). Individuals with obesity and extreme obesity are also more likely to suffer from binging, purging, and bulimic eating disorders, which contribute to unhealthy physical effects (Brewerton et al., 2015; Rajan &

Menon, 2017). Researchers found a bidirectional relationship between obesity and psychological disorders through multiple biologic pathways (i.e., immune-inflammation, oxidative stress, mitochondrial disturbances, and neurotransmitter imbalances) (Filho et al., 2018; Lopresti & Drummond, 2013). Although obesity is associated with a greater likelihood of treatment failure for psychiatric disorders (Lopresti & Drummond, 2013), weight loss was associated with improved depressive symptoms and lower utilization of antidepressant medications (Rutledge et al., 2012).

While obesity itself has a negative effect on psychological well-being, the insolent behaviors of others towards individuals with obesity also result in feelings of social exclusion and shame leading to emotional distress (Westermann, Rief, Euteneuer, & Kohlmann, 2015). In the workplace, weight discrimination is associated with obesity stigmatization. Researchers found that hiring managers evaluated obese females as less suitable job applicants regardless of personal qualifications and occupational demands (Flint et al., 2016). Additionally, women with overweight and obesity more frequently experienced bullying in the workplace and received lower wages compared to thinner women who performed similar duties (Puhl & King, 2013).

As individuals progress from overweight to obese, disability, quality of life, and mortality become even greater concerns. The longer individuals live with obesity, the greater their risk of developing a physical disability like impaired mobility or diminished physical capacity from chronic cardio- or neurovascular disease (Wong et al., 2015). Physical disability associated with acute injuries like fractures may be of longer than normal duration due to increased body weight (Walter, Kunst, Mackenbach, & Tiemeier, 2009).

Combined with the negative psychological effects of obesity, obesity-related disability can negatively impact quality of life (Chu et al., 2018). Adults with obesity report a significantly

lower quality of life than normal weight adults, and progressive increases in BMI coincide with progressive decreases in quality of life (Ul-Haq Mackay, Fenwick, & Pell, 2013). Obesity is second to cigarette smoking as the leading cause of preventable death (Goldman, 2020), representing nearly 20% of adult deaths in the U.S. (Masters et al., 2013). The cumulative effects of obesity have also contributed to the United States having one of the lowest life expectancy rankings among all high-income countries (Preston & Stokes, 2011).

Financial Burden of Obesity

Beyond the growing prevalence and the detrimental effects on human health, obesity has a negative effect on financial outcomes. Through a meta-analysis of twelve studies estimating obesity costs in the United States, Kim and Basu (2016) determined that obesity-related medical expenses accounted for $149.4 billion in 2014. At the individual level, each 1-point increase in body mass index (BMI) resulted in a 4% medical cost increase, and a 7% pharmaceutical cost increase (Wang et al., 2006). On average, adults with obesity spend 42% more in direct medical costs annually than normal weight adults (Finkelstein, 2014). Decreasing the prevalence rates of obesity by one percentage point by 2030 would decrease annual medical expenditures by $9.5 billion per year (Finkelstein, 2014).

Indirect expenses or costs resulting from lost or decreased work productivity related to obesity is concerning for employers (Pescud et al., 2015). Indirect costs are measured in terms of absenteeism (i.e., lost productivity from missed workdays) and presenteeism (i.e., decreased workplace productivity when present at work). Using data from 2006 and 2008, researchers found that employers lost approximately $13 billion in obesity-related absenteeism costs and nearly $30 billion in presenteeism costs annually (Finkelstein, DiBonaventura, Burgess, & Hale,

2010). Annual obesity-related absenteeism costs incurred by employers range from $57 - $6759 per employee (Goettler, Grosse, & Sonntag, 2018).

When evaluating the effects of weight categories on indirect costs, a clear dose-response relationship exists (Finkelstein et al., 2010). In general, normal weight and overweight women miss an average of 3.4 days and 3.9 days of work per year due to illness, respectively (CDC, 2015). In comparison, women with obesity miss 5.2 days and women with extreme obesity miss 8.2 days per year. Although individuals with obesity represent approximately 42% of the population (Hales et al., 2020), they account for 61% of medical and indirect costs incurred by employers (Finkelstein et al., 2010).

Workers' compensation (WC), or employer-financed insurance coverage for employee work-related injuries, is another source of costs for employers. Although few studies have examined the effects of excess body weight on WC outcomes (e.g., number of WC claims, medical costs, indemnity costs, and lost workdays), researchers using data from North Carolina WC claims found that overweight and obese WC claimants generated higher medical costs compared to normal weight claimants (Chenoweth, Rager, & Haynes, 2015). Women with obesity from the North Carolina study had twice the number of lost workdays and almost 50% higher total WC costs than men with obesity (Chenoweth et al., 2015). A second study examining WC claims demonstrated that the odds of overweight and obese claimants incurring a claim costing $100,000 or more after a severe injury were two times greater compared to optimal weight claimants (Tao et al., 2016).

Of the medical costs related to obesity, 58% are financed by private employers and insurers as opposed to federally funded insurance such as Medicaid and Medicare (Finkelstein, Trogdon, Cohen, & Dietz, 2009). Combined with indirect costs, employers incur $130 billion in

obesity-related expenses annually. Given the growth in rates of obesity among individuals between the ages of 18 to 67 years (Mendes, 2012), healthcare policy that encourages employers to provide medical insurance, and laws requiring employer coverage of work-related injuries, the private sector likely will continue to play a major role in financing obesity-related costs (Trogdon, Finkelstein, Feagan, & Cohen, 2012). The physical, psychological, and financial burden of obesity on women, and the financial burden on employers prompts the need to better understand weight-related behaviors of overweight working women to optimally address obesity prevention.

A significant body of research is dedicated to overweight and obese women's perceptions of body weight and factors that influence their weight-related lifestyle behaviors, yet there remains a lack of knowledge specific to overweight working women. Obtaining in-depth descriptions from overweight working women about their perceptions and experiences with body weight, weight gain, and weight loss with respect to various risk factors that influence behaviors, may contribute to a better understanding of overweight and obesity, obesity prevention, the challenges and weight management needs of overweight working women, and potential interventions to effectively support this population of women.

Study Purpose

The purpose of this qualitative descriptive study was to examine perceptions and experiences associated with body weight, weight gain, weight loss, and weight maintenance (i.e., weight management or weight control) from the perspective of overweight women who were employed full-time in a south-central region of the United States.

Theoretical Basis for Qualitative Inquiry

An aim of quantitative research is to identify and predict generalizable laws about human behavior (Yilmaz, 2013). Quantitative research has advanced the knowledge of predictors and outcomes associated with weight gain; however, this methodological approach offers limited information about why and how factors influence behaviors and body weight (Garip & Yardley, 2011). Comparatively, qualitative research facilitates a rich understanding of human behavior through the collection of information about individual perceptions and experiences that illuminate why and how factors contextually influence human behavior (Patton, 2015).

An inductive or deductive approach to qualitative inquiry may be used to guide data collection, organization, and analysis. While the inductive approach is useful when there is little knowledge about a phenomenon, the deductive or directed approach is appropriate when existing knowledge or theoretical models have been used to understand a phenomenon (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005; Patton, 2015). A large body of research exists on the topic of obesity and weight management along with numerous theoretical models that help explain the phenomenon including, but not limited to homeostatic theory of obesity (Marks, 2015), theory of planned behavior (Chevance, 2017), and hedonic theory (Ekkekakis, Zenko, & Werstein, 2017). Given the significant amount of information on obesity, a deductive approach was used by applying Pender's Health Promotion Model (HPM) to guide the qualitative inquiry.

Pender's Health Promotion Model

In 1986, Pender and her husband, a behavioral economist, published a study designed to determine the effects of attitudes, subjective norms, and intentions on adult engagement in exercise, healthy eating, and stress avoidance using the theory of reasoned action (Pender & Pender, 1986). They concluded that their study provided limited support for the theory and noted that new behavioral models were needed to predict health behaviors. Although the Health

Promotion Model (HPM) appeared in nursing literature as early as 1982 (Pender, 2011), the initial depiction of the HPM and description of using the model to explain exercise and healthy lifestyle behaviors was published a few years later (Pender, Walker, Sechrist, & Stromborg, 1988). The first test of the HPM involved employed adults (Pender, Walker, Sechrist, & Stromborg, 1990), and subsequent tests of the model focused on older adults, cancer patients, and patients in cardiac rehabilitation (Pender et al., 1988). In 1996, the HPM was revised to emphasize the importance of behavior-specific factors on outcomes and show that these factors may be directly influenced by individual characteristics and experiences. The concepts of activity-related affect, commitment to an action plan, and competing demands and preferences were added to the model to account for additional influences on behavioral outcomes (Pender, 2011; Pender et al., 2011).

Based on the theoretical foundations of expectancy value theory and social cognitive theory, the HPM was developed to complement health protection models like the health belief model (Pender et al., 1990). While similar to the health belief model, the HPM does not use "fear" and "threat" as motivators of behavior because unless a threat to health is imminent, fear has little motivational value (Pender, Murdaugh, & Parsons, 2011). The HPM is useful in studying healthy lifestyle behaviors where the potential for a health threat is in the distant future (Pender et al., 2011), which aligns with the insidious nature of weight gain and obesity.

Pender's HPM (see Figure 1) provides a framework for describing the multidimensional and dynamic nature of people as they perceive experiences and interact with the environment and others in attainment of health (Pender et al., 2011). According to Pender, health is an evolving life experience defined as the fruition of human potential achieved through goal-oriented behaviors, proficient self-care, and fulfilling relationships, while responding to exposures in the

environment to maintain a sense of balance and coherence (Pender, 2011, p. 3). A person is defined as a biopsychosocial organism that is molded in part by the environment, yet also influences the environment to achieve optimal health. In the HPM, the environment consists of social, cultural, and physical factors that bring context to life and can be modified by the person to generate positive facilitators of health. The HPM aligns with the social ecological perspective of obesity (Frood et al., 2013; Fung et al., 2015) in that the HPM model accounts for human and environmental interactions to produce experiences that influence behaviors and ultimately health outcomes (Pender et al., 2011).

Assumptions of the HPM include: people value positive growth, have the capacity for self-evaluation, and seek their own health potential through self-regulated behaviors (Pender et al., 2011). Another assumption of the HPM is that people with complex biopsychosocial characteristics engage in reciprocal interactions with various aspects of the environment, and these interactions are essential to behavior change. Pender classifies influential factors associated with health promoting behaviors into specific components: individual experiences and biopsychosocial characteristics, and behavior-specific cognitions and affect (Pender, 2011; Pender et al., 2011). Health promoting behavior is the desired behavioral action or outcome that results from the decision-making process and facilitates actualization of health (Pender, 2011).

According to the HPM (Pender, 2011) health-promoting behaviors may be influenced by prior experiences associated with the defined behavior and personal characteristics including race, motivations, beliefs, personality, education, economic status, and culture. Some of these influential factors moderate the relationship between cognitive functions and behavior through perceived benefits and barriers, positive/negative affect, and perceived self-efficacy in relation to the prospective behavior. Other cognitions that influence behaviors involve interpersonal and

environmental or situational influences such as, social norms, support, family/peers, role models, and aesthetics. When acting together, these factors determine behavioral outcomes, namely commitment to a behavior-change action plan and execution of the desired health-promoting behavior. Other factors may also influence the decision-making process. People may find that alternative options are more appealing, or they may be faced with competing demands that undermine their intent to commit and their ability to successfully engage in the health-promoting behavior (Pender, 2011; Pender et al., 2011). The original HPM did not include activity-related affect, commitment to an action plan, and competing demands and preferences. These variables were added in 1996 when the model was revised in accordance with research findings to account for additional factors found to influence healthy behavioral outcomes (Pender et al., 2011).

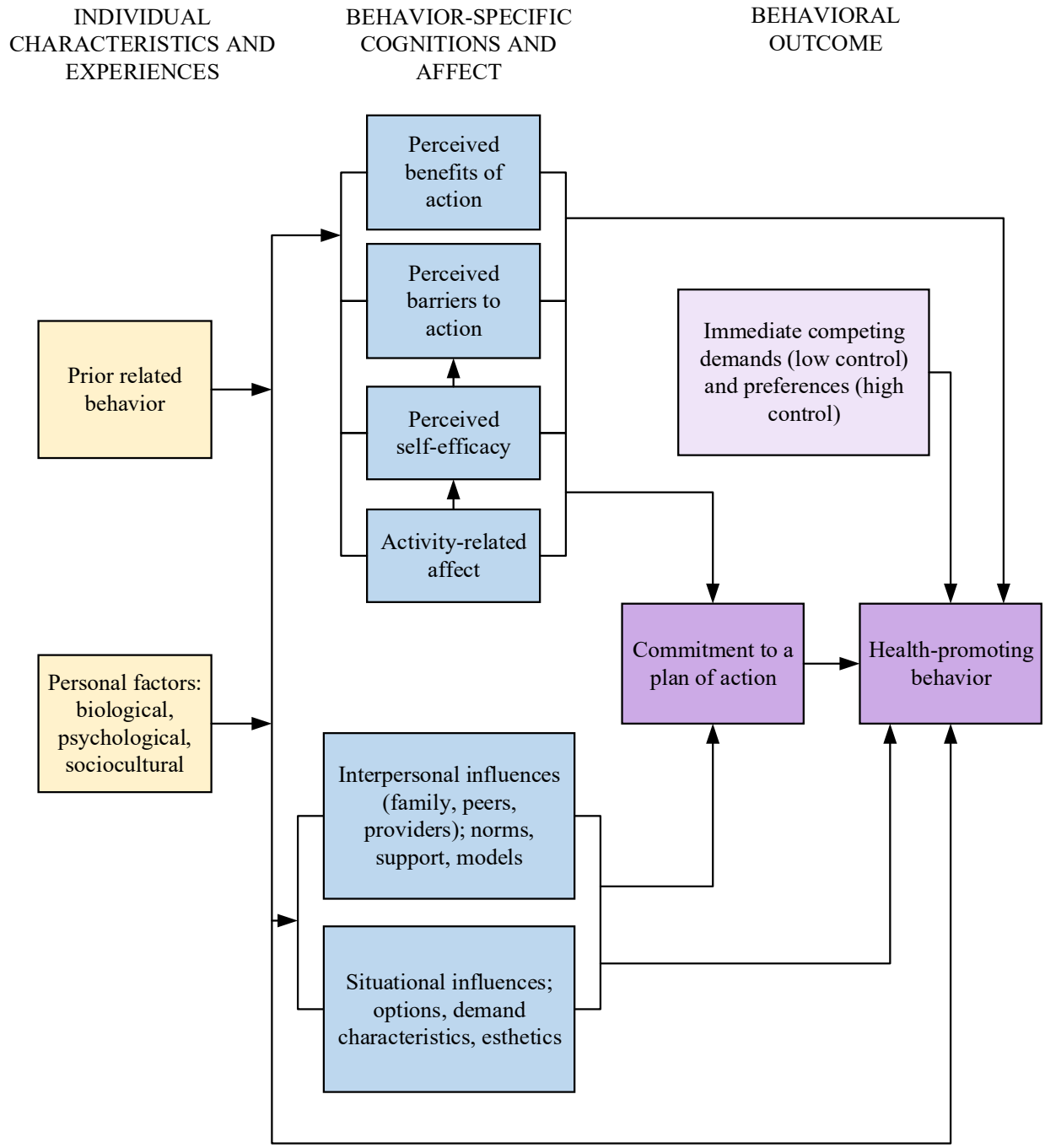
Application of Pender's Health Promotion Model

Pender's HPM was designed to better understand behaviors that promote health and the model has been applied to studies focused on a variety of behaviors including cervical cancer screenings (Kissal, 2014), immunization behaviors (Oh & Park, 2011), and performing oral care (Charkazi et al., 2016). While the HPM was not specifically created to explore weight management behaviors in overweight working women, Pender and colleagues (2011) noted that a healthy diet and physical activity, two activities that promote an optimal weight, are essential to health. Pender's model has also been used in studies predicting nutritional behaviors in women with overweight and obesity (Khodaveisi, Omidi, Farokhi, & Soltanian, 2017) and physical activity in employees (Vahedian-Shahroodi, Amin-Shokravi, Hidarnia, & Jabbari, 2013). Although this study is not designed to predict lifestyle behaviors, the HPM is relevant to the study design as it provides a framework within which to explore different human characteristics, personal experiences, cognitive processes, social interactions, and environmental

factors associated with weight management behaviors. Pender's model also was useful in this study as it accounts for the insidious nature of weight gain and the negative health effects by removing "fear" and "threat" as motivators of behavior. Using the components of the HPM, the inquiry focused on personal experiences and characteristics, behavior-specific cognitions, social and environmental influences, and preferences to understand women's weight-related behaviors. Additionally, these components were used as a framework for data organization, where appropriate. Data that did not fit into the HPM constructs were analyzed using an inductive approach.

Figure 1

Pender's Health Promotion Model - revised (Pender, Murdaugh & Parsons, 2011)



Study Aims and Research Questions

The aims of the study were to: a) describe overweight, working women's perceptions about body weight, b) describe overweight working women's perceptions about and experiences with weight gain, c) describe overweight working women's perceptions about and experiences with weight loss, d) describe overweight working women's perceptions about and experiences with weight maintenance. The research questions (RQs) for this study were:

RQ1: How do overweight, working women describe body weight?

RQ2: What are overweight, working women's experiences with weight management?

RQ3: What factors contribute to weight gain according to overweight, working women?

RQ4: What factors promote weight maintenance and loss in overweight, working women?

RQ5: What weight maintenance and loss methods are preferred by overweight, working women?

RQ6: What are the barriers to weight maintenance and loss for overweight, working women?

Summary

Obesity is an insidious and complex condition that is challenging to treat. Despite public health efforts to reverse the obesity epidemic, the problem persists. Although employers are attempting to support employee health, existing employer-sponsored weight management programs have produced similarly inconsistent outcomes. Recognizing these challenges, weight management strategies that address obesity prevention in the early stages of weight gain may hold promise for the future. However, before effective strategies can be developed to prevent obesity, more information is needed to understand how and why factors influence behaviors that

lead to weight gain in clearly defined populations. Given the prevalence of obesity among working age groups and among women, working women could benefit from effective obesity prevention interventions, yet there is a paucity of information that would inform the development of obesity prevention interventions for this population. A subset of working women with knowledge about obesity prevention are overweight women who have or are trying to manage their weight. These women have successfully managed to avoid or reverse obesity and hold valuable insight into challenges and successes with weight control that relate to distinct environmental, psychosocial, and economic factors associated with lifestyle behaviors and changes in body weight.

This qualitative descriptive study will build a foundation of knowledge about overweight working women's perceptions of body weight and their perceptions and experiences with weight management. The information gleaned from this study will provide knowledge about why and how environmental, socioeconomic, and psychological factors influence lifestyle behaviors that affect weight; insight into working women's perceptions about body weight and how these perceptions influence weight-related behaviors; an understanding of the challenges overweight working women face to maintain a healthy weight, and information about preferred methods of weight management from the perspective of overweight working women. This knowledge may inform the future development of effective employer-sponsored weight management programs designed to prevent obesity in this population of women.

Chapter 2: Literature Review

This review was conducted to examine literature pertinent to overweight, obesity, and weight management relating to working women. The literature review begins with information about working women; their rise in the workforce; the nature of their work, family, and social roles; and the impact of these roles on weight gain. The second section of the review focuses on the historical perspectives of obesity; measuring body weight; causes of obesity; differentiating between obesity prevention and treatment; and policies and interventions that address obesity. Third, an overview of the employer's role in promoting employee health through wellness programs and changes in the work environment is provided. The fourth section explores research specific to perceptions and experiences with body weight, weight management among women and working populations. The review concludes with a summary of the literature and identified gaps in literature related to working women, weight management, and obesity prevention.

The literature search was performed using Cumulative Index to Nursing and Allied Health Literature, Google Scholar, and PubMed between the years 2000-2021. Search terms included: women, female, employed, working, employer, obesity, overweight, weight gain, weight loss, weight management, obesity prevention, obesity treatment, and health promotion. Additional resources were identified by reviewing the reference list of selected articles.

Women in the Workforce

Women have faced numerous challenges to entering the workforce, including overcoming stereotypes and discrimination, lobbying for equal pay and equal rights, and balancing the demands of work and family life. A historical perspective of women's growth in the workforce detailing their past and present challenges provides insight into the factors that contribute to stress and unhealthy weight-related behaviors in this population.

Near the end of the 19th century, 17% of the labor force were women. Between 1950 and 2015, the number of working women in the U.S. increased from 18.4 million to 73.5 million and the female share of the workforce increased from 30% to 46.8% (Toossi & Morisi, 2017). The Bureau of Labor Statistics estimates the share of women in the workforce will continue to grow at a higher rate than men through 2024 with 77.2 million women representing 47.2% of the workforce (Toossi & Morisi, 2017). In 2016, 57% of all working-age women participated in the labor force (Bureau of Labor Statistics [BLS], 2017a). Since the 1980s, the median age of working women has increased from 34 to 42 years of age, as younger women have increasingly opted to attend college and have faced stiffer job competition from economic downturns (BLS, 2020; Toossi & Morisi, 2017). However, of all college graduates, more women (49.8%) than men (45.2%) were in the labor force (BLS, 2017b). By 2024, women aged 25 to 54 years will account for 63.2% of working women, and women 55 years and older will represent 25.3% of the women's workforce (U.S. Department of Labor, n.d.).

Rise of Women in the Workforce

Social, political, and economic events throughout history have influenced women's decisions to enter the workforce. During World Wars I and II, women filled the jobs vacated by servicemen to support war efforts and maintain the economy (Giang, 2013). Between 1940 and 1944, nearly 6 million women joined the civilian workforce as servicemen left, and 400,000 women served in the military alongside men (Giang, 2013). The labor shortage during wartime prompted women to enter professional roles previously dominated by men, and the government used iconic marketing materials like Rosie the Riveter to motivate women to join the workforce (Shah, 2015). Following WWII, returning servicemen wanted their jobs back and women

relinquished those jobs returning to positions traditionally held by women (i.e., teaching and secretarial work) or they left the labor market all together (Shah, 2015).

The 1950s were a period of confusion as women struggled with the idea of being a socially acceptable homemaker or following their desire to work and be independent (Shah, 2015). The social activism of the 1960's, however, forced society to acknowledge feminist principles and grow to accept women as productive members of the workforce (Walsh, 2010). The Equal Pay Act of 1963 and the Civil Rights Act of 1964, helped to normalize women in the workplace by mandating equal pay for men and women, and outlawing discrimination based on sex (Giang, 2013).

Although legislation offered women a legal course of action to overcome inequality, women continued to face challenges in the workplace when they were absent from work due to pregnancy or the birth of their child. By the end of the 1960s, the Food and Drug Administration had approved the birth control pill and 80% of married women of childbearing age were using contraceptives to give themselves greater freedom in their personal and vocational lives (Walsh, 2010). As the economic pressures of the 1970's increased, more women were motivated to join the workforce to maintain a comfortable middle-class lifestyle (Baig, 2017). The Pregnancy Discrimination Act of 1978 also provided women the legal support that allowed them to balance their roles as wife, mother, and working professional (Walsh, 2010). While activism, political and economic changes, and medical breakthroughs between the 1940's and 1980's encouraged and supported women's movement into the workforce, women were faced with additional challenges as they navigated their choice of occupations.

The Changing Nature of Women's Work

Historically, women's work primarily involved domestic tasks, household organization, child rearing, and family care giving (Shah, 2015). Women working outside of the home during the early- to mid-1900s, however, were often employed in the service industry in what were known as pink-collar jobs (Carrier, 2012). The term pink-collar was coined to differentiate female appropriate work from labor intensive blue-collar jobs held by men (England & Boyer, 2009), while the term white-collar was reserved until the 1980s for professionals who were predominately male (Carrier, 2012).

Through the mid-twentieth century, most women worked in clerical positions or in the service industry as nurses and teachers (Carrier, 2012). At the time, the female-oriented, pink-collar positions required little formal education and relied on the skills acquired through domestic work and on-the-job training. Some traditional pink-collar jobs, such as nursing and teaching, have since evolved into professional positions requiring advanced education and training (Darling-Hammond, 2005; Hoeve, Jansen, & Roodbol, 2014). The descriptive job-type labels previously used to differentiate men and women's work are no longer associated with sex and gender (Lips-Wiersma, Wright, & Dik, 2016), yet some jobs are still stereotypically considered male or female occupations.

Although women continue to dominate positions in healthcare and education, more women are moving into other industries and are being promoted into leadership roles. Seventy-four percent of human resource managers, 45% of marketing and sales managers, and 36% of lawyers are women (DeWolf, 2017). According to the U.S. Department of Labor (n.d.), women outnumbered men in the fields of accounting, veterinary medicine, and economics in 2016. Evolving social norms and the promotion of higher education have influenced gender diversification in various industries (DeWolf, 2017; Walsh, 2010).

Since 1970, the percent of women with a bachelor's degree or higher increased from 11% to 42% (BLS, 2017c). In 2017, women were more likely than men to earn a bachelor's degree by age 29 years, 34% and 26% respectively (DeWolf, 2017). Increasingly, women are entering previously male dominated jobs as executives, government leaders, and business owners (Giang, 2013). In the U.S., nearly 40% of businesses are owned by women who employ over 8.4 million workers and generate $2.5 trillion in sales annually (Giang, 2013; McManus, 2017).

In 2020, women's advances in the workplace were impeded. The coronavirus outbreak and subsequent pandemic had negative effects on the economy, personal income, and gender equality in the workforce. Dang and Nguyen (2021) reported that during the pandemic women were 24% more likely to lose their job compared to men and women's income fell by 50% more than men.

One explanation for the findings is the gender composition of certain fields of employment. Positions that were highly "telecommutable" or could be performed in work-from-home settings were less impacted and 28% of men versus 22% of women held telecommutable jobs (Alon, Doepke, Olmstead-Rumsey, & Tertilt, 2020). In 2020, women represented 76% of U.S. healthcare workers (U.S. Census Bureau, 2020). Although healthcare was classified as essential, many positions or fields within the healthcare sector were temporarily shuttered, furloughed, or working with a reduced workforce, including dentists and dental hygienists, physical therapists, medical assistants, and clinic-based nurses (Connor et al., 2020). As a result of the pandemic, gender disparities in the workforce were amplified and experts are now calling for a paradigm shift in workforce planning and policies that promote gender equality (Connor et al., 2020).

Women, Social Roles, and Family

As the nature of women's work changed over time, women's roles in society transformed and their responsibilities grew. Between 1960 and 2010, the proportion of married couples with children who had dual-income households increased from 25% to 60% (Pew Research Center, 2015). Despite the growing presence of females in the workforce and their contribution to family income, domestic duties have remained primarily women's work (BLS, 2017b; Parker & Wang, 2013).

The average number of hours per week women spend on housework and childcare is 28, compared to men whose domestic duties take up 16 hours per week (BLS, 2020, June). Full-time employed women spend more time on household activities, caring for family and friends, and civic and religious activities compared to full-time employed men, who reported spending more time participating in sports and leisure activities, eating and drinking, and working beyond normal work hours (BLS, 2017b).

Family structure and dynamics have also evolved over the last century. In 1950, married couples accounted for 93% of all families with children, compared to 68% in 2016 (U.S. Census Bureau, 2016). More women are choosing to marry later in life. The median age when women marry has increased from 20.3 years in 1950 to 28.1 years in 2020 (U.S. Census Bureau, 2020). Other women are taking different paths to building their families. Twenty-three percent of families consist of single mothers, and greater than 8 million opposite-sex couples cohabitate without marrying (U.S. Census Bureau, 2016). In addition, over 5 million women identify as lesbian, gay, bisexual, transgender, or queer (Newport, 2018), and 48% of those women are raising children independently or with a partner (Family Equality Council, 2017). Each path to family life comes with its own social challenges that can influence lifestyle behaviors and body weight in women.

While family is an important aspect of overall human well-being (Thomas, Liu, Umberson, & Suitor, 2017), the pressures associated with parenting and family life are also sources of emotional distress and fatigue for women (Musick, Meier, & Flood, 2016). Fifty-six percent of employed women feel stressed and find it difficult to balance work and family responsibilities due to time constraints (Parker & Wang, 2013). In addition to housework and childcare, a growing number of women are providing physical, emotional, and financial support to their aging parents (Wiemers & Bianchi, 2015). Women who simultaneously care for a child and aging parents reported poorer psychosocial functioning, greater conflict related to family and work, and less support from their partner or spouse (DePasquale et.al., 2017).

Women, Work, and Weight

The work-life stress that stems from conflicting family and work demands often is associated with poor health behaviors, including unhealthy food choices, inadequate exercise, and insufficient sleep which lead to unfavorable health outcomes (Hammer & Sauter, 2013). In a cohort study of 9,276 working women aged 45-50 years, increasingly longer work hours was associated with greater levels of weight gain (Au, Hauck, & Hollingsworth, 2013). In a separate study of working women aged 25-30 years at baseline, full-time working women had a greater likelihood of weight gain and a lower likelihood of weight loss than part-time workers (Au & Hollingsworth, 2011).

The type of work women engage in also has an influence on weight. Women in occupations that require sitting activities for 90% of the workday gained more weight over time than women working jobs that involved sitting only 25% of the day (Thompson, Sauver, & Schroeder, 2018). This finding is consistent with another study (Burgard & Sonnega, 2017), which revealed that women in professional occupations were less likely to maintain a normal

weight trajectory compared to women in more physically demanding farming and production occupations. While specific occupations are associated with greater risk for weight gain in women, a longitudinal study of U.S. workers concluded that interventions designed to promote weight loss and prevent obesity are needed for workers across all occupational categories as the prevalence of obesity continues to increase (Gu et al., 2014).

Summary

Women have overcome significant barriers and experienced considerable change over the last century. The transition from homemaker to working professional in combination with evolving social roles and maintaining the same level of dedication and domestic contribution to family has contributed to increased stress and poor lifestyle behaviors for many working women. Although researchers indicate that the time constraints and competing demands associated with work and family life are taking a toll on the health of working women, more information is needed to understand how and why the social and environmental factors of the workplace interact with other personal characteristics and experiences of working women to influence body weight.

Obesity

The term obesity originates from the Latin *obesus*, which means having eaten itself fat or having eaten until fat (Hoad, 2003). To a layperson, obesity has meant being fat or having a health condition (da Silva & da Costa Maia, 2012). Scientists define obesity as an outcome with specific qualifying parameters (CDC, 2016), and the American Medical Association labeled obesity as a disease (Stoner & Cornwall, 2014). While each definition is different, each is accurate according to the context in which the term is used. Other terms like weight management, weight maintenance, and different levels of BMI are defined and used differently

throughout the literature. Table 1 provides a summary of terms and definitions related to body weight that may vary based on context, or whether the term is defined as an outcome or a process.

Table 1

Definitions

Concept	Definition
Body weight	Mass of the human body generally measured in kilograms or pounds
Normal weight	BMI of 18.5 kg/m^2 to less than 25 kg/m^2 (CDC, 2016)
Overweight	BMI of 25 kg/m^2 to less than 30 kg/m^2 (CDC, 2016)
Obese	BMI equal to or greater than 30 kg/m^2 (CDC, 2016)
Weight management or control	The act of gaining, maintaining, or losing weight to attain a healthful body weight (Senagore, 2004). Weight management is typically defined by the intended outcome or in relation to a target population. For instance, interventions designed to prevent or treat obesity focus on weight maintenance or loss. Individuals trying to manage weight may experience some degree of weight gain, loss, and maintenance throughout their quest for a healthy weight.
Weight maintenance	An outcome defined as a weight change of less than 3% body weight in adults (Stevens, Truesdale, McClain, & Cai, 2006). Also, the process of retaining one's current body weight through actions that result in a balance between energy or calories consumed and burned (Hill et al., 2012).
Weight loss	An outcome defined as a decrease in body weight of at least 5% in adults (Stevens et al., 2006). Also, the process of reducing body weight by increasing energy expenditure and decreasing energy intake (Hill et al., 2012).
Prevention of obesity	In non-obese individuals, the maintenance of weight or attenuation of weight gain in excess of 29.9 kg/m^2 (Lemmens et al., 2008). Interventions that address prevention include healthy eating, specific diets, exercise, and in some cases, medications, and surgery.
Treatment of obesity	In individuals with obesity, the use of interventions to achieve a BMI less than 30 kg/m^2 or reduce weight to minimize adverse health effects of excess weight. Interventions used to treat obesity include healthy eating, specific diets, exercise, medications, and surgery.

Historical Perspectives of Obesity

Time and the contextual nature of history also has had an impact on the meaning and varying views of obesity. Historically, adiposity provided an evolutionary advantage. When society consisted mainly of hunters and gathers or relied on rudimentary agricultural practices, food scarcity and malnutrition threatened human existence (Brown, 1991; Eknoyan, 2006). During famines and times of hardship, body fat provided humans a means of storing energy for later use and increasing odds of survival. Carved figurines of obese females unearthed from the Stone Age suggest that excess body weight was held with high regard and represented an icon of fertility (Brown, 1991; Buckwald, 2018). With the advancement and modernization of societies, food sources became more readily available for those who could afford it creating greater disparity between social classes (Eknoyan, 2006).

Although the correlation between obesity and disease was first noted in medical literature during the 1700's, women with overweight and obesity during this time were revered (as depicted in paintings and other artistic products) as a representation of wealth, beauty, and high social standing (Eknoyan, 2006; Ferrucci, Studenski, Alley, Barbagallo, & Harris, 2009). Despite the positive connotations of excess weight in the 18th century, obesity remained rare outside the upper echelon of society (Bray, 2009). Throughout the 1800's, undernourishment and low body weight were a greater concern, thus the notion that carrying extra body weight was prudent and necessary for vitality prevailed (Eknoyan, 2006).

The image of obesity began to change in the 1920s partly due to the research on weight and mortality by Louis Dublin, a statistician at Metropolitan Life Insurance Company, and by the 1940s medical professionals found excess body weight problematic (Buchwald, 2009; Eknoyan, 2006). The mid- to late-1900's was a period of increasing social concern as national survey data

indicated a clear trend toward a growing population of heavier individuals (Hruby & Hu, 2015). Between 1960 and 1994, the prevalence of obesity among American adults increased from 13% to 23% (Flegal, Carroll, Kuczmarski, & Johnson, 1998), and by the early 2000's it was considered a public health issue of epidemic proportions.

Measuring Obesity

As it became increasingly apparent that body weight could positively and negatively affect health, measuring body weight became important. Lambert Adolphe Jacques Quetelet, a Belgian mathematician and sociologist, developed BMI in the 1830's to estimate the health of a person according to their weight in relation to their height (CDC, 2016; Nordqvist, 2017). Obesity is one category on the BMI scale, with the range from underweight to extreme obesity (CDC, 2016). BMI below 18.5 kg/m^2, a person qualifies as being underweight and normal weight is between 18.5 and 24.9 kg/ m^2. Overweight is defined by a BMI of 25 to 29.9 kg/m^2, and a BMI $\geq$ 30 kg/m^2 is obese. Body weight is further delineated as extreme obesity when BMI is 40 kg/m^2 or greater (CDC, 2016).

Although BMI is commonly promoted as a measure of body fat, it is a measure of excess weight that can result from increase bone density or muscle mass rather than adiposity (CDC, n.d.). This drawback has led to the development of other measures. For instance, waist circumference and waist-to-hip ratio also are used to measure body fat because they are inexpensive, easy to perform in the clinical setting, and both measures are used to calculate risk of disease development and death in adults (Harvard School of Public Health, 2019). Nevertheless, waist measurements have not been standardized and the waist-to-hip approach is prone to measurement error and decreased accuracy in individuals with obesity (Harvard School of Public Health, 2019; Suchanek et al., 2012). There are more accurate methods of measuring

body fat than BMI (e.g., skinfold thickness, bioelectrical impedance, and underwater weighing), yet BMI is considered a good estimate that is not expensive or technically demanding to execute in the clinical setting, and it is often used in relation to health risks (CDC, n.d.).

Causes and Risk Factors for Obesity

Although obesity has been associated with poor health and disease for hundreds of years, researchers are continuing to explore causes and risk factors that lead to obesity. Scientists have categorized and mapped many of these causes along with the interactions of each factor that further influence the development of obesity through physiology and behavior (Frood et al., 2013; Vandenbroeck et al., 2007). Common categories for specific causes of obesity include: biological, environmental, psychosocial, and socioeconomic.

Biological. Aside from BMI, obesity is also classified according to suspected physiologic etiology: monogenic obesity or severe obesity that results from a single gene mutation; syndromic obesity associated with genetic developmental abnormalities; and polygenic or common obesity caused by multiply genetic variations functioning together to increase susceptibility to weight gain (Herrera & Lindgren, 2010; Loos & Janssens, 2017). Whether weight gain is monogenic, syndromic, or polygenic in origin, genetic variations are responsible for defects that result in increased appetite and decreased satiety (Herrera & Lindgren, 2010; Loos & Janssens, 2017).

Most individuals with excessive weight gain suffer from a polygenic cause, as monogenic and syndromic causes are rare (Loos & Janssens, 2017). With a focus on multifactorial causes of obesity, researchers found that epigenetics, or the modification of gene expression through chemical compounds that tell the genome what to do, is the connection between genetics and the environment (Lima et al., 2017). Research in genomics and epigenetics is helping to explain

differences in individual susceptibility to obesity. Despite the importance of genetics and genomics in excessive weight gain, polygenic or common obesity also requires exposure to environmental, psychosocial, and socioeconomic factors for increased adiposity to occur (Frood et al., 2013; Herrera & Lindgren, 2010). The multifactorial etiology of obesity makes management of the condition exceptionally challenging (Lima et al., 2017).

Environmental. The environment in which individuals work, play, and live is comprised of social networks of family, friends, and co-workers; systems such as schools, healthcare organizations, and work sites; state and national policies; and economic and geopolitical dynamics (Glass & McAtee, 2006). The way individuals interact and respond to the complex factors within the different levels of the environment shape personal values, beliefs, and preferences, which influence decisions and behaviors specific to eating and physical activity (Glass & McAtee, 2006). However, the physical structure, social interactions, and psychological responses that influence decisions may vary with exposure to different environmental stimuli.

Changes in the environment and the way humans have adapted to these changes are widely regarded as a primary cause of the obesity epidemic (Llewellyn & Wardle, 2015). Changes contributory to an obesogenic environment include innovations in manufacturing and communications, modes of passive transportation, workplace settings, and entertainment (Jochem, Schmid, & Leitzmann, 2018). Advances in food production and packaging not only decreased the relative price of food, but improved processes made food less perishable and more readily available to the public (Variyam, 2004). While improving access to safe, affordable foods is beneficial especially where food scarcity is a concern, the advent of processed foods has led to “food deserts” or residential locations where affordable nutritious foods are limited, and “food swamps” or neighborhoods where fast food options outnumber healthy alternatives (Cooksey-

Stowers, Schwarts, & Brownell, 2017). The relative affordability of processed foods has also created a financial disparity between healthy and unhealthy diets. In a meta-analysis of various diets, researchers found that healthier diets consisting of fewer processed foods cost an average of $1.48 more per day per person (Rao, Afshin, Singh, & Mosaffarian, 2013), which equates to approximately $178 more per month for a family of four. As consumer interest in processed food and beverage products peaked, manufacturers and fast-food restaurants competed for sales by developing marketing communications which also helped shape consumer preferences and influenced cultural norms (Hawkes et al., 2015). The increased national household availability of overly processed foods such as colas, sweet or savory snacks, breads, cereals, and reconstituted meat products is associated with an increased prevalence of obesity (Monteiro et al., 2018).

With the advent of mechanized transportation, energy expenditure declined as humans opted to use motorized vehicles rather than walk or ride a bicycle to their destinations (Levine & McCrady-Spitzer, 2018). In a cross-sectional study of 14 countries, all 50 states in the U.S. and 47 of the largest U.S. cities, researchers found that locations with a higher share of active transportation (i.e., walking and cycling) to and from work were associated with lower rates of obesity and diabetes (Pucher, Buehler, Bassett, & Dannenberg, 2010). People have also become increasingly sedentary due to technological innovations in the workplace and at home. Jobs have shifted from manual labor to computer-driven roles that require less energy expenditure (Church et al., 2011). Today, adults in the U.S. spend more than 50% of their workday sitting (Bauman, Petersen, Blond, Rangul, & Hardy, 2018). Moreover, on-demand digital entertainment and video games contribute to an obesogenic environment. Researchers have shown that an increase in the number and size of TVs and computers in the home positively correlate with sedentary behaviors (O'Donoghue et al., 2016). In a study of 27 countries, researchers found that for every 10-

percentage point increase in the investment of TVs, computers, and other information technologies, the rate of obesity increased an average of 1.4 percentage points (Chatterjee & DeVol, 2012). Due to numerous environmental changes, humans have evolved from hunters and gathers to a grab-and-go society that often eats relatively unhealthy food on the go.

Psychosocial. Psychological factors and cognitive functions are associated with obesity and behaviors that contribute to obesity. Adults diagnosed with depression are more likely to be obese than individuals without depression, and as the severity of depression increases the rate of obesity also increases (Pratt & Brody, 2014). Researchers have found that depression and obesity each serve as a risk factor for the other diagnosis (Luppino et al., 2010). In addition to depression, anxiety is associated with increased rates of obesity and physical inactivity in adults (Strine et al., 2008).

Aside from psychological disorders, cognitive functions related to decision making influence unhealthy eating and exercise behaviors (Kahneman, 2011; Roberto & Kawachi, 2014). Information and education about healthy eating and exercise is helpful; though, too much information about nutritional content, portion size, target heart rate and exercise duration can lead to cognitive overload and decision fatigue (Kahneman, 2011). When the brain has too much information to process in a logical fashion, people resort to emotionally based intuitive judgments known as heuristics (Kahneman, 2003, 2011). Heuristics serve to ensure human adaptability and survival, yet often result in suboptimal decisions about health-related behaviors through the introduction of cognitive bias (Kahneman, 2003, 2011).

Cognitive bias is a deviation from rational decision making resulting from faulty perceptions about reality (Haselton, Nettle, & Murray, 2015). While there are numerous forms of bias that influence decisions about healthy food choices and exercise, individuals who expressed

more present-bias demonstrated a higher prevalence of obesity (Kang & Ikeda, 2016). Present-bias describes the human inclination to place a greater value on the present and discount the future, which results in people making decisions that sacrifice future health for immediate rewards (Kang & Ikeda, 2016). In other words, the desire to have an unhealthy snack right now often trumps any considerations about the cumulative effects of unhealthy snacks on future health. Present-bias also influences physical activity behaviors. In a study of 176 employees who participated in an economic field experiment, researchers found that individuals who demonstrated less present-bias (i.e., greater value on the future) exercised more each week than individuals who placed more value on the present (Hunter et al., 2018).

Social influences also shape preferences, guide decisions, and alter human behaviors (Laibson & List, 2015). Social proofing - believing that if others are doing something then it must be good – is a cognitive bias deployed to justify specific behaviors or validate decisions (Cialdini, Wosinska, Barnett, Butner, & Gornick-Durose, 1999; Griskevicius et al, 2009). In a longitudinal study of social networks, researchers found the risk of becoming obese increased 57% when friends also became obese (Christakis & Fowler, 2007). Conversely, individuals who believed their friends routinely exercised were 1.5 times more likely to engage in physical activity themselves (Ball, Jeffery, Abbott, McNaughton, & Crawford, 2010). In both instances, the perceived actions of friends and family influenced decisions about health and led others to model eating and exercise behaviors.

Socioeconomic. Education and income levels are important socioeconomic factors related to the prevalence of overweight and obesity, yet findings associated with these factors are inconsistent across gender and race/ethnicity. In a study using data from the National Health and Nutrition Examination Survey, researchers determined that educational attainment beyond high

school decreased the odds of obesity in women but had less effect on obesity in men (Flegal et al, 2016). Among women, education level had no effect on rates of obesity in non-Hispanic Asians, while obesity was lower in non-Hispanic white, non-Hispanic black, and Hispanic college graduates compared to those who did or did not graduate high school (Odgen et al., 2017).

In relation to income, rates of obesity did not significantly differ between the lowest and highest income levels in men, whereas obesity prevalence decreased with increasing income levels in women (Ogden et al., 2017). The prevalence of obesity in non-Hispanic Black, non-Hispanic Asian, and Hispanic women, however, was not significantly different in the lowest and highest income levels (Ogden, 2017). In comparison, another group of researchers who used data from the National Health Interview Survey to report on the health of U.S. adults, found that overweight and obesity were less frequent in individuals with a family income of $35,000 or less compared to those with a family income of $35,000 or more (Schiller, Lucaus, & Peregoy, 2012). Obesity is not universally associated with high or low levels of educational attainment or income making it a complex problem to address (Ogden et al., 2017).

Each risk factor independently affects obesity at the individual level, yet exposure to each risk factor and the interactions among these exposures effects individuals and their weight-related behaviors at varying degrees (Frood et al., 2013; Fung et al., 2015). Individuals with similar demographic and environmental characteristics may have overlapping similarities in the factors that influence their weight, which may be better understood through a population health lens. Further, gaining an ecologic understanding of overweight working women's health behaviors in relation to their risk factors may inform interventions designed to prevent obesity through behavior change.

Preventing and Treating Obesity

Whether preventing or treating obesity, the behavioral basis for weight control is eating a healthy diet and exercising. The terms prevention and treatment, however, are used differently in the literature and it is important to understand the context in which each word is used before delving into interventions for weight management. Defining the nuances of obesity prevention and treatment requires an understanding of weight categories in the context of populations versus the individual. When referring to a population of people the prevalence rate is typically used to denote the percentage of people who are normal weight, overweight, and obese. In the literature, obesity prevention is generically used in reference to a population to indicate efforts that would prevent the majority or an increasing percentage of the population from becoming obese. For instance, if 40% of all women in the U.S. are obese (Flegal et al., 2016), then effective obesity prevention efforts would stabilize and eventually decrease the prevalence rate in this population.

At the individual level, obesity prevention is defined as the maintenance or attenuation of weight gain in non-obese (i.e., normal weight and overweight) individuals (Lemmens, Oenema, Kleep, Henriksen, & Brug, 2008), or the prevention of weight gain in excess of 29.9 kg/m^2. In comparison, once an individual reaches the point of clinical obesity (BMI $\geq$ 30 kg/m^2), then efforts shift to treating or reversing obesity rather than preventing it. While everyone, regardless of BMI status, stands to benefit from behavioral lifestyle interventions (i.e., eating a healthy diet and exercising), robust clinical weight loss treatments and funding mechanisms for these treatments are activated once an individual becomes obese. Despite the differences in treatment and prevention based on BMI, the cumulative effects of society level policies and programs, and individualized interventions and treatments support obesity prevention.

Addressing Obesity Through Policy

Policy is an effective way to address obesogenic factors at the population level whether in private institutions like businesses, at the community or state level in schools and through taxes, or at the federal level in healthcare, environment, and agriculture (Glass & McAtee, 2006). In 2003, the U.S. Preventive Services Task Force began to address the growing concerns about obesity by recommending that primary care providers screen all adults for obesity and offer patients weight reduction counseling if they have a BMI ≥ 30 kg/m^2; still the cost of counseling remained a barrier to care (Agne, Daubert, Munoz, Scarinci, & Cherrington, 2012; Moyer, 2012). In 2010, provisions in the Affordable Care Act (ACA) removed the cost barrier by mandating insurance coverage for preventive care services, specifically weight reduction counseling for individuals diagnosed with obesity (Koh & Sebelius, 2010).

Regardless of the provisions in the ACA that facilitate treatment of obesity, the policy did not address the needs of overweight individuals. Instead, weight reduction counseling under the ACA aims to reverse obesity as a means of preventing chronic health conditions, rather than to prevent obesity in overweight and high-risk individuals. While considerable efforts have focused on obesity prevention in children and the rates of obesity in younger segments of the population have started to improve (Ogden et al., 2016), more action is needed to advocate for public policy and interventions that address obesity prevention in adult populations (Huang et al., 2015).

In 2013, against the recommendations of the Public Health and Science Committee, the American Medical Association (AMA) classified obesity as a disease. The policy change was intended to improve awareness and treatment of obesity in the healthcare community (Stoner & Cornwall, 2014). The AMA and The Obesity Society suggested that labeling obesity as a disease could encourage policies and interventions geared toward prevention rather than treatment (Rosen, 2014). Opponents of the policy argued that medicalizing obesity shifts the importance

from the personal responsibility of practicing healthy lifestyle behaviors to a reliance on medications and surgery (Stoner & Cornwall, 2014). The change, in turn, would drive greater financial investments in the development of pharmaceutical and surgical interventions, and diminish funding for behaviorally-based health promotion programs and public efforts to enhance healthy environments (Council on Science and Public Health, 2013).

There is little information to evaluate the effects of the policy change on healthcare utilization outcomes and lifestyle behaviors. In one study, however, researchers used a series of experiments to parse out the effects of messaging about "obesity as a disease" on intended healthy behaviors (Hoyt, Burnette, & Auster-Gussman, 2014). Some participants were asked to read an article about obesity being a disease that included information on compensation for treatment and reduced stigma, while others were asked to read standard public health information on tips about managing weight with health-related behaviors. After reading the information, participants provided information to determine their BMI and they were asked questions about starting a diet and food selection including descriptions and caloric content. Researchers confirmed that labeling obesity as a disease had a negative effect on personal accountability and individual behaviors associated with a healthy lifestyle as participants who read about obesity as a disease were more inclined to make unhealthy choices (Hoyt et al., 2014).

Additional policy efforts focus on changing environmental factors that exploit psychosocial and economic vulnerabilities and facilitate unhealthy behaviors that contribute to weight gain (Roberto et al, 2015). For instance, the NOURISHING framework developed by the World Cancer Research Fund International (n.d.) offers a structure for policy development around nutritional labeling, food taxation and subsidies, incentives that encourage health-focused retailers, restrictions on unhealthy food advertisements, improvements for nutritional counseling

interventions, and public awareness campaigns. However, state and federal governments are reluctant to enact public policies that address environmental factors and obesity prevention (Roberto et al., 2015). Aside from competing political dynamics, one explanation for the lack of public policies that address obesity prevention is the struggle to prioritize obesity prevention with a focus on long-term benefits over obesity treatments that generate shorter-term gains (Dietz et al., 2015). Evaluating the long-term health effects of policies can be difficult and often requires commitment to human resources and financial funding. Likewise, the time needed to show health improvements from policy changes may exceed the politically driven timelines to demonstrate positive change.

Addressing Obesity Through Weight Management Interventions

Just as policies drive individual behaviors through population-based initiatives, weight loss interventions support individual behavior change. When effective interventions are scaled or offered at a population level, individual behavior change can generate population-level results. Individual weight loss interventions range from commercially available, behaviorally-based programs to surgical procedures. Each intervention is different in terms of costs, efficacy, risks, benefits, and target populations. The following information is an overview of the more common interventions: commercial weight management programs, clinical weight loss counseling, weight loss medications, and surgical interventions.

Commercial weight management programs. Commercial weight management programs are defined interventions that are packaged and commercially marketed to the public as a solution for unwanted weight gain. Among commercial weight management companies, Weight Watchers, Nutrisystem, and Medifast held the largest market share in 2018 (IBIS World Market Report, 2018). Weight management companies such as Weight Watchers and

Nutrisystem have experienced significant business growth in recent years (Malito, 2016). In 2017, the commercial weight management market was estimated at $3.03 billion, up 9.4% from $2.77 billion in 2016 notwithstanding a 10% decrease in the number of active dieters since 2015, reports of "dieter fatigue" (Marketdata, 2017), and shifting attitudes about diet and weight control (Roepe, 2018). Market research suggests that consumers are opting for simple, sustainable, lifestyle modifications that focus on better choices rather than specific diet regimens, forcing an evolution of commercial weight management companies to meet consumer demands and remain relevant in a changing market climate (Roepe, 2018).

Commercial, public, and employer-sponsored weight management programs are similar in that they vary in terms of involvement intensity, nutritional approaches, physical activity approaches, behavioral strategies, forms of support, and costs (Gudzune et al. 2015; Kaspin, Gorman, & Ross, 2013; Mattke et al., 2013; U.S. Preventive Services, 2012). Table 2 outlines examples of variations in weight management programming.

Table 2

Variations in Weight Management Programs

Elements of Weight Management Programs	Example Variations of Elements
Intensity of involvement	Number of sessions per week, month, year Individual self-directed, peer group, expert lead group Mobile, text-message, online, face-to-face Weight loss competitions
Nutritional approaches	Meal plans: low calorie, low carbohydrates, high protein Replacement foods/meals Calorie tracking Healthy eating habits/lifestyle modifications
Physical activity approaches	Exercise plans: walking, cycling, running, weights, aerobics Activity tracking Encouraged physical activity Lifestyle modifications
Behavioral strategies	Goal setting Problem solving Self-monitoring Behavior change
Types of support	Education Peer support or expert support Health coaching or counseling Medical supervision
Costs	Self-directed including meal and activity plans with personal tracking range from $0 - $70 per month High intensity including counseling/supervision, group sessions and meal replacements range from $43 - $682 per month

Marketing strategies are an important part of commercial program success, and the variations in each program allow individuals to pick a program that falls within their means and fits their personal preferences thereby enhancing the popularity of such offerings. To expand on the commercial success of weight management programs, companies like Weight Watchers are contracting with employers to provide services as a benefit to employed populations (Mattke et al., 2013).

Although there is limited research to evaluate adherence to commercial programs or harmful effects of the interventions, evidence from a systematic review indicates that Jenny Craig and Weight Watchers resulted in greater weight loss at 12 months compared to participants enrolled in education/counseling or control groups, 4.9% and 2.6% respectively (Gudzune et al., 2015). In a study of premenopausal women randomly assigned to one of four high protein, high fat diet programs, namely Atkins, Ornish, LEARN or Zone, there were no significant differences in weight loss and the mean weight loss was 4.7 kg at 12 months (Gardner et al., 2007). Researchers conducting a meta-analysis showed that the Atkins program resulted in 0.1% to 2.9% greater weight loss than counseling (Gudzune et al., 2015). In a randomized controlled trial of men and women, Nutrisystem resulted in an average weight loss of 5.6 kg at three months (Foster et al., 2013) and an average of 3.8% more weight loss than education/counseling (Gudzune et al., 2015).

OPTIFAST, a medically supervised low-calorie meal replacement program resulted in 6% more weight loss than counseling at six months in a randomized trial involving a sample of 86% women (Ard et al., 2018). In a retrospective chart review at Medifast Centers, researchers found that the meal replacement program reduced body weight by 14.3% at 6 months in men and women (Coleman et al., 2015). Gudzune and colleagues (2015) found that Medifast and

OPTIFAST produced at least 4% more weight loss than counseling, with evidence of recidivism beyond 6 months.

While researchers have conducted numerous studies to evaluate the effectiveness of commercial weight management programs, the outcome measures vary making it difficult to compare studies. Regardless of whether researchers report percent change in body weight, kilograms or pounds lost, or percent weight loss compared to an alternative program or control intervention, the CDC (2018) indicates that losing a modest 5% to 10% of body weight will likely result in beneficial health outcomes.

Clinical weight reduction counseling. Clinicians encounter patients with overweight and obesity and address their health concerns frequently. As healthcare providers, advanced practice nurses, physicians and physician assistants use weight reduction counseling as a first-line intervention for obesity. The U.S. Preventive Services Task Force (2012) recommends that all adults aged 18 years and older receive an obesity screening as part of clinical preventive services. For patients identified with a BMI of 30 kg/m^2 or greater, healthcare providers are advised to offer multicomponent behavioral interventions referred to as weight reduction counseling (WRC) (Moyer, 2012). The interventions associated with WRC include setting weight loss goals, establishing guidelines for diet improvements and increasing physical activity, building self-monitoring skills, addressing barriers to lifestyle changes, and determining how to maintain behavior changes (Moyer, 2012; U.S. Preventive Services, 2012).

Weight reduction counseling, however, is underutilized in the primary care setting with only half of obese adults receiving the service (CDC, 2013; Office of Disease Prevention, 2017). Several factors contribute to the underutilization of WRC in the clinical environment. Primary care providers are accustomed to addressing symptoms, chief complaints, and diseases rather

than treating or preventing obesity (Banerjee, Gambler, & Fogleman, 2013; Colbert & Jangi, 2013; Hayes, Wolf, Labbé, Peterson, & Murray, 2017), and physicians have indicated that they selectively provided WRC to patients based on time limitations, patient's motivation to lose weight, and their degree of comorbidity (Leverence, Williams, Sussman, & Crabtree, 2007). In the primary care setting, WRC was more commonly offered to patients who were diagnosed with obesity, were seen by a cardiologist, or had a greater number of chronic health conditions associated with weight gain (Bleich, Pickett-Blakely, & Cooper, 2011; Dutton et al., 2014).

The U.S. Preventive Services (2012) provided evidence that WRC is moderately to highly effective in promoting patient weight loss and recommended that the service be offered to patients. There is a paucity of research on the effectiveness of counseling by advanced practice nurses and physician assistants. However, patients advised by a physician to lose weight were more likely to attempt weight loss (63%) than those who were not advised to do so (42%) (Kant & Miner, 2007). In a study exploring patient experiences with clinical weight management, 70% of patients recalled discussing weight loss with their provider (Koball et al., 2018). Of those individuals who recalled the encounter, 92% felt motivated to change their eating and exercise behaviors, and 89% exhibited confidence in making the necessary lifestyle changes. In a systematic review of behaviorally-based interventions in the primary care setting, weight reduction interventions resulted in an average of 3 kg greater weight loss than individuals in the control group after 12-18 months (LeBlanc, O'Connor, Whitlock, Patnode, & Kapka, 2011). Weight loss associated with clinical counseling or behavioral interventions also reduced the incidence of diabetes in individuals with pre-diabetes (LeBlanc et al., 2011). Further, researchers using a randomized controlled trial found weight loss counseling sessions offered face-to-face or through a Web-based program to be equally successful (Appel et al., 2011).

Individual characteristics also play a role in weight loss success through medically guided behaviorally based interventions. In a study of mostly females, 124 individuals with obesity enrolled in a 12-month weight counseling and reduction program offered through a medical center, not being married was a significant predictor of weight loss at 12-months (Hadžiabdić et al., 2015). Given that the program did not include spouses and significant others, researchers surmised that being single offered more time for meal planning and preparation. Likewise, participants who were single did not have to adjust their own eating behaviors to align with those of their family. In the same study, predictors of program drop-out included a lower education level and starting the intervention with a greater body weight (Hadžiabdić et al., 2015). In a second behaviorally based intervention, personal behaviors including frequency of self-weighing, persistent food logging, and counting steps or activity were significant predictors of weight loss over a 6-month program (Painter et al., 2017). Although weight reduction counseling, diet planning, and goal-setting are an important part of weight loss, individual characteristics may limit or promote the effectiveness of weight reduction counseling or behavioral approaches to weight loss.

Weight loss medications. Prescribed medications are another approach to weight loss often used in the clinical setting. Medications approved by the Food and Drug Administration for weight loss include orlistat, lorcaserin, phentermine-topiramate, naltrexone-buproprion and liraglutide (Mayo Clinic, 2018; NIH, 2016a). Weight loss medications are reserved for patients who have medical conditions associated with overweight or obesity and are not recommended for patients wanting to lose weight for aesthetic reasons (NIH, 2016a). Patients who typically take prescribed medications for weight loss are characterized as mainly women (84%) who are

commercially insured, have a median BMI of 33.6 kg/m^2, and often report a clinical comorbidity (Zhang, Manne, Lin, & Yang, 2016).

Weight loss medications act to reduce weight by decreasing the appetite, making a person feel sated faster, or altering the absorption of fat by the body, and the side effects of medications range from constipation and diarrhea to high blood pressure and liver damage (NIH, 2016a). Although the benefits generally outweigh the risks of weight loss medications, behavior modification, counseling, or other conservative options should be attempted prior to using prescribed medications (Apovian et al., 2015).

A meta-analysis of placebo-controlled trials examining the long-term effects of medications for weight loss revealed that prescription medications resulted in 3-9% weight loss and greater reduction of cardiometabolic risk factors compared to placebo at one year (Yanovski & Yanovski, 2014). There is little research that informs the rate of recidivism after termination of prescribed medications for weight loss other than to note that recidivism is common, and medications are ineffective if not taken (Bray, 1993; Johnson & Quick, 2018; Mayo Clinic, 2018).

Weight loss medications are an effective method of weight loss, yet individuals interested in using medications to lose weight must meet specific clinical criteria. Of those who qualify for the treatment, they may not be able to tolerate the treatment due to side effects and once the medications are stopped weight regain is likely. When weight management programs and medications are ineffective or not tolerated, a surgical approach to weight loss is typically the last option.

Weight loss surgery. In 1966, the first gastric bypass was proposed for weight loss (Faria, 2017). Since the 1990s, advances in bariatric surgery have led to various types of surgical

procedures that address recalcitrant obesity and extreme obesity. The most common procedures include laparoscopic gastric banding, gastric sleeve surgery, and gastric bypass, of which only the gastric band is FDA approved for overweight patients with one or more weight-related medical conditions (NIH, 2016b).

A meta-analytic study revealed that patients 5-years post bariatric surgery reduced their BMI by 12-17 kg/m^2, had a surgical complication rate of 17%, and a mortality rate at 30 days of 0.31% (Chang et al., 2014). Although gastric bypass was associated with a higher rate of complications than gastric banding, it was more effective in producing weight loss. Comparatively, gastric banding resulted in fewer cases of mortality and complications yet had higher rates of reoperation. The effectiveness of gastric sleeve surgery was comparable to gastric bypass.

In a sample of 300 patients (80% women) who underwent gastric bypass surgery, the average weight regained was 23.4% of their maximum weight lost over the first year after surgery (Cooper, Simmons, Webb, Burns, & Kuschner, 2015). Despite weight regain, patients maintained a net loss as the weight regained was less compared to the initial weight loss. Researchers have also found weight loss medications are to be useful in minimizing weight regain following surgical intervention (Stanford et al., 2017). Long-term risks and side effects of bariatric surgery include chronic nausea and vomiting, inability to eat certain foods, malabsorption of nutrients, anemia, osteoporosis, hernias, and obstruction of the stomach or bowel from scar tissue that requires additional surgery (NIH, 2016b). In a meta-analysis of studies on bariatric surgery, approximately 7% of patients required reoperation for failed bariatric procedures (Chang et al., 2014). Although the different weight loss surgeries are

effective options for weight loss, the long-term side effects and complications can result in other physical problems that may be just as challenging and emotionally taxing as the excess weight.

Summary

Weight loss interventions vary from non-invasive, behaviorally based programs that can be scaled for larger populations, to different types of medications and surgeries for qualifying individuals. Some interventions are part of public health initiatives while others are clinically oriented. Each intervention has different financial costs, levels of efficacy, risks, and benefits that must be considered on an individual basis. Overall, weight loss interventions are useful in helping people lose unwanted body weight.

Employers' Role in Promoting Employee Health

Workplace health promotion programs, also known as worksite wellness programs and employee health and productivity programs, are comprehensive and integrated strategies designed to promote the health of employees through policies, benefits, interventions, and environmental supports (CDC, 2019). Wellness programs originated following World War II with executive fitness programs created by business leaders who valued the benefits of healthy employees (Sparling, 2010). Since the 1970s, programs have grown in popularity and evolved from gym memberships and fitness trainers for senior leaders of companies to integrated interventions that address behavioral risk factors and broad health issues at a population level (Kaiser Family Foundation, 2017; Sparling, 2010).

The National Institute for Occupational Safety and Health (NIOSH) (a branch of the CDC), the National Business Group on Health (NBGH), and the Wellness Council of America (WELCOA) have been instrumental in developing guidelines for employer wellness programs,

supporting evidence-based health promotion practices, and recognizing organizations that excel in promoting the health and well-being of their employees (NBGH, n.d.; NIOSH, 2015; WELCOA, n.d.). The leadership of these organizations and others dedicated to workplace wellness have considerable influence on the direction of the industry. Although a trend in workplace health promotion programming has been to move from purely physical health to a holistic approach that addresses multiple factors related to overall human well-being (NBGH, n.d.), weight management programs remain foundational to most workplace health promotion program offerings (Kaiser Family Foundation, 2017).

Workplace Health Promotion Programs

Employer-sponsored wellness programs generally provide employees access to weight management interventions regardless of an obesity diagnosis, thereby offering overweight individuals access to interventional support that may not be available to them through a clinical setting. These programs often are reserved for employees who enroll in the employer-sponsored health insurance plan (Heinen & Darling, 2009; Kaiser Family Foundation, 2017) despite guidelines that encourage employers to offer health promotion programs to all employees and their families (NIOSH, 2015; Sparling, 2010).

Employers integrate wellness programs with their health insurance plans as a means of justifying the programmatic costs through a return on investment based on lowered healthcare expenses (Heinen & Darling, 2009; Kaiser Family Foundation, 2017). Researchers have demonstrated that health promotion programs can produce a return on investment of -$3.27 in healthcare costs for every dollar spent on programming (Baicker, Cutler, Song, & Zirui, 2010). Other researchers have shown that effective health promotion programs are beneficial to the entire organization through improved absenteeism, presenteeism, workplace culture, and market

or overall business performance (Cancelliere, Cassidy, Ammendolia, & Côté, 2011; Grossmeier et al., 2016; Goetzel et al., 2014).

Health promotion programs offered as part of employer-sponsored health insurance plans are regulated by the Federal government through the Affordable Care Act, the Health Information Portability and Accountability Act, the Department of Labor (DOL), the Department of Health and Human Services, the Treasury (DOL, n.d.; Federal Register, 2013), and the Equal Employment Opportunity Commission (2016). Each agency issues coordinated regulations specific to maintaining the privacy of health information, addressing discrimination based on health information, limiting the use of financial incentives to encourage participation, and program design features (i.e., participatory wellness programs vs. health-contingent wellness programs). Health promotion programs affiliated with employer-sponsored health plans are heavily regulated by multiple agencies, still employer-sponsored programs offered outside of health plans remain subject to privacy, employment, tax, and discrimination laws (Gallagher, 2019).

A workplace culture of health that involves leadership support; policies that promote employee health, well-being, and safety; and the provision of healthy resources is important to the success of employer-sponsored wellness programs as the culture facilitates an environment that encourages healthy behaviors (Kent, Goetzel, Roemer, Prasad, & Freundlich, 2016). Some employers, however, place requirements on employees to enroll in health promotion programs or offer financial incentives that strongly motivate employee participation (Horwitz, Kelly, DiNardo, 2013). Despite the heavy-handed approach sometimes used to drive enrollment in wellness programs, researchers who conducted a survey of 1833 U.S. employees working for

companies that employed between 50 and 1,000+ employees found that nearly 60% of employees welcomed employer involvement in their health (McCleary, et al., 2017).

Programmatic design and engagement strategies for health promotion programs vary considerably from one employer to the next. Health risk assessment (HRA) and biometric screenings are common methods of assessing the individual needs of each employee (Kaiser Family Foundation, 2017). Employers may offer a voluntary assessment, create an incentive to encourage participation, or make screenings mandatory for all employees on the medical insurance plan (Kaiser Family Foundation, 2017). The results of the personal assessment are used to develop a tailored approach to health promotion, thereby, opening the door to weight loss discussions and interventions. Other employers skip the screening process. Instead, they leverage research that points to the overall benefits of moving more and eating better, and they create socially-driven platforms that connect people, naturally provide peer support, and engage employees in a non-prescriptive approach to healthy behaviors (D. Hoke, National Business Group on Health, personal communication, October 24, 2017).

Weight management interventions within employer-sponsored wellness programs also vary significantly. Onsite fitness centers, commercial interventions, nutritional counseling and health coaching, digital smart phone apps and text-based weight management solutions, and workplace weight loss challenges are often integrated into program designs (Heinen & Darling, 2009; Trogdon, Finkelstein, Reyes, Dietz, 2009). Some interventions are prescriptive in nature and inclusive of specific diets and exercise regimens, while others simply encourage healthier choices about exercise and nutrition through socially engaging approaches (D. Hoke, National Business Group on Health, personal communication, October 24, 2017). When developing health promotion programs, employers must also consider design elements that address shift work,

variations in work environments, multiple campuses or physical locations, turnover, and part-time workers to help ensure that programs meet the needs of employees (Heinen & Darling, 2009).

Although studies have shown that workplace wellness programs can be financially and organizationally beneficial for employers, clinical outcomes for workplace weight management programs are inconsistent. Researchers conducting a systematic review of 23 studies evaluating workplace weight loss interventions concluded that results ranged from clinically significant weight loss to an effect that was less than control treatments (Weerasekara, et al. 2016). In another systematic review of workplace weight control and weight loss interventions, outcomes varied but the pooled effect resulted in a reduction of 2.8 pounds and a decrease in BMI of 0.5% at the six- to twelve-month follow-up (Anderson et al., 2009). Researchers reviewing workplace physical activity interventions found that 60% of interventional studies included in the review reported improvements in number of steps taken, physical activity level, or BMI, yet seven of the 12 randomized controlled trials did not prove to be effective (To, Chen, Magnussen, & To, 2013). More intensive and structured programs that included behavioral counseling, and social and environmental supports or activities were reported as providing greater benefits and better outcomes (Anderson et al., 2009; To et al., 2013). Other researchers, however, found no evidence that signaled increased efficacy for specific interventions related to physical activity, dietary behaviors, or weight loss and recommended a multi-component interventional approach for weight management (Schröer, Haupt, & Pieper, 2013). Although there is a significant body of research on workplace weight management programs and interventions, there is a paucity of information that characterizes workplace weight management program participants based on their level of success in losing or maintaining weight in accordance with their goals.

Changes in the Work Environment

Employers who invest in workplace wellness programs may also make modifications to the work environment or design support features in the workplace to further encourage healthy behaviors. The work environment, much like other environments, has its own organizational structure, values, and culture that serve as influences on the decisions individuals make about lifestyle behaviors. Researchers found that workers in jobs involving primarily sitting activities have higher risks for overweight and obesity (Chau, van der Ploeg, Merom, Chey, & Bauman, 2012). In a longitudinal work environment study involving 4732 workers, researchers examined the relationship between changes in occupational sitting and BMI (Eriksen, Rosthøj, Burr, & Holtermann, 2015). Women who reported large or moderate decreases (-7.5 to -2.5 hours per week) in occupational sitting had significant decreases in BMI over a five-year period after controlling for age, leisure activity, baseline BMI, and socioeconomic status. In comparison, the BMI of men remained constant with large or moderate decreases in sitting.

In addition to sedentary work, overweight and obesity in women are associated with long work hours (more than 9 hours per day or 40 hours per week) (Kim et al., 2016; Luckhaupt, Cohen, Li, & Calvert, 2014) and job-related stressors (high demands, low job control, poor peer/leadership support, hostile environment) (Fujishiro, Lawson, Hibert, Chavarro, & Rick-Edwards, 2015; Luckhaupt et al., 2014; Nobrega et al., 2016). There is a lack of information on the relationship between workplace food offerings and obesity, yet workers have reported that unhealthy food options or a lack of affordable healthy options at work contribute to weight gain (Nobrega et al., 2016; Strickland et al., 2015).

Beyond health promotion programs, employers are addressing aspects of the work environment as a means of promoting health. Employers are testing interventions that nudge employees to make better decisions about food choices by incorporating choice architecture into the work environment. Choice architecture involves designing an environment that still allows people to make their own choice, but the choices are modified to promote optimal decision-making (Thaler, Sustein, & Balz, 2013). For instance, employers are providing price discounts for healthy options, integrating portion size control in the menu offerings, reducing food choices high in fat and low in fiber, and making default food options healthier (Allan, Quertret, Banas, & de Bruin, 2017; Geaney, DiMarrazzo et al., 2013; Thaler et al., 2013). Employers are also offering nutritional education, healthy diets, and dietary counseling (Geaney, DiMarrazzo et al., 2013; Steyn, Parker, Lambert, & Mchiza, 2009).

In office settings where seated tasks dominate work activities, employers are testing standing or sit-to-stand workstations, treadmill workstations, pedometers and step programs, computer prompts to stand and walk, and fitness tests with counseling interventions (Chu et al., 2016). Other workplace interventions include policies to promote physical activity throughout the workday, financial incentives and insurance premium penalties based on specific behaviors, and social marketing strategies that encourage healthy behaviors (Wolfenden et al., 2016). Employers are also addressing negative psychosocial factors in the work environment that can lead to suboptimal health behaviors by offering mentoring (Zhang, Quin, We, Wen, & Zhang, 2016) and stress reduction programs (Janssen, Heerkens, Kuijer, Van Der Heijden, & Engels, 2018).

In a study examining the effects of a workplace stress reduction program for women, researchers found that group support, improved coping skills, and relaxation techniques

produced lower levels of perceived stress and improved diet and physical activity behaviors among 104 participants (Werneburg et al., 2011). Workplace wellness programs and environmental interventions have diverse effects on employee health and well-being and various outcome measures are used to evaluate the effects (e.g., behavioral changes and weight change) making it difficult to compare the effects of interventions (Geaney, Kelly et al., 2013), still the effectiveness of employer-sponsored weight management programs is inconsistent (Anderson et al., 2009; Goetzel & Ozminkowski, 2008; Maes et al., 2012; Mhurchu et al., 2010). Effective workplace weight management programs and interventions that result in individual weight loss of at least 5% body weight save approximately $90 in medical and absenteeism costs per employee annually (Trogdon et al., 2009).

Workplace wellness programs may provide organizational and financial benefits to the company, yet more research is needed to improve the clinical effectiveness of weight management interventions for working adults. To address the effectiveness of workplace weight management programs, information is needed to understand why and how factors influence weight gain and weight loss from the perspective of different segments of the working population using the programs (Chan & Woo, 2010; Garip & Yardley, 2011; Yanovski & Yanovski, 2018).

Summary

Historically, adiposity facilitated human survival and was later revered as a sign of prosperity when only the wealthy could afford lavish meals. As segments of society began to flourish and obesity became increasingly prevalent, scientists soon recognized the detrimental effects of obesity on health. Decades of research led to the identification of numerous biological, environmental, psychosocial, and socioeconomic factors that contribute to obesity through

complex interactions. In turn, policymakers, clinicians, entrepreneurs, and health promotion professionals developed policies and interventions to address the growing problem of obesity. Of late, employers joined the efforts to support their employees through weight management wellness programs to improve the health and productivity of the workforce and lower costs associated with obesity. However, programmatic outcomes have been inconsistent, and more research is needed to understand the weight management needs of working populations before effective interventions can be designed.

Perceptions of and Experiences with Body Weight and Weight Management

When applying the HPM (Pender, 2011) to the behavioral outcome of weight control, personal characteristics, and experiences shape how a woman defines health in relation to body weight and her perceptions of excess weight which influence her weight-related behaviors. These behaviors are further determined by perceived benefits and barriers to health promoting actions, her perceived self-efficacy and affect, interactions with the environment and others, and competing demands and preferences. The following review of literature focuses on women's perceptions and experiences with overweight and obesity; factors contributing to weight gain; barriers and facilitators to healthy behaviors, and preferred methods of weight management.

Women's Perceptions about Overweight and Obesity

Although the AMA recognizes obesity as a disease (Stoner & Cornwall, 2014), women have varying points of view on body weight. Researchers exploring overweight and obese women's perception of obesity found that overweight and obese African American (AA) women expressed pride in their weight and had positive attitudes about larger body sizes (Befort, Thomas, Daley, Rhode, & Ahluwalia, 2008; Chugh Friedman, Clemow, & Ferrante, 2013; Coleman, Bass, Cafer, Ford-Wade, & Loftin, 2020; Shoneye et al., 2011). AA women with

obesity described themselves as full-figured or big-boned, whereas white women with obesity referred to themselves using derogatory terms like cow, fatty, and whale (Chugh et al., 2013). In a study examining culture in relation to obesity, researchers found that AA women demonstrated an acceptance of their weight and reported little social support to change their weight-related behaviors (Lopez et al., 2014). The AA women generally indicated that a personal body weight consistent with being overweight or obese was ideal (Lopez et al., 2014).

Social influences also play an important role in how women perceive their weight. In a study of overweight British women's perceptions about body size, white women reported considerable social pressure to be slim and tended to focus on the emotional consequences of weight gain unlike their black peers who emphasized the health effects of being overweight (Shoneye, Johnson, Steptoe, & Wardle, 2011). While the participants in the study were considered homogenous and affluent in terms of socioeconomic factors (Shoneye et al., 2011), other researchers found that women living in high-socioeconomic regions desired thinness and women in low-socioeconomic regions preferred heavier bodies and reported less body dissatisfaction (Swami et al., 2011).

In studies involving African American and Latina women with overweight and obesity, researchers found that the participants were inclined to describe obesity in terms of aesthetics, how clothes fit, and how they feel (Agne et al., 2012; Befort et al., 2008; Coleman et al., 2020). White women indicated that being overweight is unattractive and they associated slimness with success and happiness (Shoneye et al., 2011). Despite the collective focus on aesthetics, women from different races and ethnicities felt that losing weight would promote health and make them feel good (Agne et al., 2012; Befort et al., 2008; Shoneye et al., 2011).

In another study, researchers examined patient perceptions of obesity in relation to the role of healthcare providers and found that some overweight men and women did not view obesity as a medical matter and felt physicians should not be left to deal with the problem (Heintze et al., 2011). Similarly, overweight black women from South Africa believed their weight was normal and not a disease; however, obese and normal weight black women perceived excess weight as a threat to health (Okop, Mukumbang, Mathole, Levitt, & Puoane, 2016). Chugh and colleagues (2013) found that white women with obesity associated their weight with feelings of depression and self-deprecation and suggested that these women may need clinical support overcoming their immediate challenges with emotional distress or self-acceptance before they can effectively control their weight.

While women generally acknowledge the physical and psychosocial consequences of obesity, personal characteristics like weight, race, and culture produce variations in perceptions about overweight and obesity. Perceptions, whether related to health, social pressures, or personal beauty, serve to motivate weight-related behaviors. Thus, acquiring information about overweight working women's views of overweight and obesity is important to understanding the challenges and motivators associated weight management and obesity prevention in this population.

Perceived Factors Contributing to Weight Gain and Obesity

Although few studies are dedicated to working women's perceptions of factors that contribute to weight gain, researcher have found that women from various backgrounds point to numerous causes of obesity. Perceived factors contributing to obesity can be categorized into behavior-related causes (e.g., enjoyment of food, consumption of food due to emotional stress, lack of exercise, and factors associated with daily routines at home and at work that negatively

influence eating and exercise behaviors) (Heintze et al., 2010; Phiri, Draper, Lambert, & Kolbe-Alexander, 2014), and non-behavioral causes (e.g., menopause, nicotine withdrawal, family history and family eating patterns, age, and medications) (Heintze et al., 2010).

In a study of women and men with obesity, researchers examined perceived causes of obesity in relation to one's self and others and found that participants attributed weight gain in others to internal or personally controllable behaviors such as poor diet and insufficient exercise (Keightley, Chur-Hansen, Princi, & Wittert, 2011). However, the same participants attributed their own weight gain to both internal and external or non-behavioral factors, including genetics and hormonal conditions, as a means of reducing the psychological distress associated with engaging in unhealthy behaviors (Keightley et al., 2011).

Social and environmental causes of obesity were also reported by women. In a sample of Latina immigrant women, social isolation, stress, and transitioning to an American lifestyle were perceived contributors to weight gain (Agne at el., 2012). African American women indicated that weight gain was associated with family stress (Lopez et al., 2014) and that obesity naturally followed the transition to motherhood (Befort et al., 2008). Similarly, female college students believed stress from moving away from home and social pressures from friends contributed to weight gain (Smith-Jackson & Reel, 2012).

Two qualitative studies explored the role of the work environment on overweight and obesity in samples of low-income men and women (Nobrega et al., 2016; Strickland et al., 2015). The following themes emerged and were identified as antecedents to weight gain or determinants of obesity: physically demanding work, schedules and time pressures, poor food environment at work (Nobrega et al., 2016; Strickland et al., 2015), and psychosocial stressors (Nobrega et al., 2016). Study participants noted that standing for long hours caused fatigue and diminished a

desire to engage in physical activity after work (Nobrega et al., 2016; Strickland et al., 2015). Balancing multiple jobs, commute times, and family life resulted in the consumption of unhealthy fast foods because there was not enough time to prepare healthy meals (Nobrega et al., 2016; Strickland et al., 2015). Workers also reported that workplace cafeterias and vending machines rarely offered affordable healthy food options (Nobrega et al., 2016; Strickland et al., 2015). Last, the psychological stress and anxiety of working demanding jobs with little autonomy caused employees to choose calorie-dense "comfort foods," and to "stress eat" or consume more food overall (Nobrega et al., 2016). Although the workplace studies included men and women, the workers' reports of stress and time limitations were consistent with the findings from studies involving different population subsets of women.

Barriers and Facilitators to Healthy Behaviors and Weight Management

Perceptions about body weight and perceived causes of weight gain provide insights about weight-related behaviors, still cognitive functions such as perceived barriers and facilitators, social influences, and environmental factors can also influence health promoting behaviors (Pender, 2011). Two studies aimed to identify barriers and facilitators of healthy behaviors by focusing solely on employed individuals. In a study of men and women employed as caterers and managers in the United Kingdom, researchers revealed barriers to healthy eating such as a business culture of inadequate work-life-balance, and café operations designed to maximize business performance rather than promote health resulting in unhealthy or expensive healthy food options (Pridgeon & Whitehead, 2013). Despite a work culture that did not support healthy behaviors, the employees conveyed that family influence and a sense of personal responsibility were drivers of healthy eating behaviors.

In a second qualitative study involving 93 employed nurses, researchers examined health priorities and barriers to healthy behaviors and found that a lack of employer support (i.e., poor staffing, insurmountable workloads, and low pay) negatively influenced lifestyle behaviors (Phiri et al., 2014). The workplace factors identified in the study resulted in emotional stress which caused ineffective coping strategies such as stress eating, alcohol abuse, and working more hours to boost income. In turn, the nurses were overly fatigued, had little motivation to exercise, and a lack of time to prepare healthy meals. Similarly, other researchers exploring factors that influenced diet patterns in black families examined a sample subset of workers and found that working long hours in labor intensive jobs resulted in a lack of motivation to exercise and limited time to prepare healthy meals (Ochieng, 2011).

While there were a limited number of studies related to perceived barriers and facilitators of healthy lifestyle behaviors in employed populations, the literature review revealed no studies dedicated to working overweight women. However, research involving different population subsets including women provided information on factors that influenced healthy behaviors. Overweight and obese disadvantaged (AA) women indicated that embarrassment over their inability to complete exercises due to their body size was a barrier to engaging in physical activity (Baruth, Sharpe, Parra-Medina, & Wilcox, 2014). Moreover, these women reported being told by family and friends that they did not need to lose weight and that they were encouraged to eat more. Their behaviors were further reinforced by the desire to maintain their "curves" (Baruth et al., 2014).

American women who were overweight after completing an 18-week weight loss program indicated that accountability to others, social support, planning meals and physical activity, taking a mindfulness approach to eating, regulating portion sizes of food, and avoiding

quick fix diets were important facilitators of weight loss and optimal weight maintenance (Metzgar, Preston, Miller, & Nickols-Richardson, 2015). In the same study, women reported that negative environmental pressures on healthy lifestyle behaviors and life transitions associated with employment, family, and health limited their ability to maintain a healthy weight. Similarly, overweight women in a weight gain prevention trial reported that setting small achievable goals and using self-management and problem-solving skills facilitated weight management, while social and environmental factors like a lack of childcare, time constraints, family commitments, and limited access to gyms and healthy foods were barriers to weight management (Kozica et al., 2015).

Women and men living in rural communities indicated that financial costs, time limitations, and social norms were perceived barriers to healthy eating and exercise (Seguin, Connor, Nelson, LaCroix, & Eldridge, 2014). The rural residents also believed that a cultural value of food gathering (i.e., hunting, gardening, and canning or preserving food), and support from family and friends facilitated a healthy lifestyle.

In contrast, male and female college students reported that social relationships both helped and hindered healthy behaviors (LaCaille, Dauner, Krambeer, & Pedersen, 2011). Students shared that some friends encouraged healthy eating and exercise, while others exerted peer pressure to drink alcohol and snack on unhealthy foods. Two studies involving female college students revealed that a lack of nutritional knowledge, negative environmental and media influences, and time constraints were significant barriers to healthy lifestyle behaviors (Garcia, Sykes, Matthews, Martin, & Leipert, 2010; Smith-Jackson & Reel, 2012).

In a study of African Caribbean adults and adolescents residing in England, researchers found that living in unsafe neighborhoods and exposure to poor weather conditions were barriers

to physical activity (Ochieng, 2011). The participants also conveyed a lack of appeal for the Eurocentric approach to physical activity, which was perceived as going to a gym and engaging in a grueling form of regimented punishment. The cost of healthy foods and lack of gym access also served as barriers to a healthy lifestyle.

Although four studies reported in this section of the literature review included men, aggregate findings indicate similarities among barriers and facilitators to healthy behaviors. Family support and social influences along with time constraints and the physical environment play an important role in determining behaviors. Women who completed a weight loss program also reported specific behavioral approaches as facilitators of weight management. In each study, personal experiences and cultures influenced perceived barriers and facilitators to health promoting behaviors, which points to the need for additional research to understand the experiences of working women.

Preferred Methods of Weight Management

Whether an individual prefers chips over carrots or favors playing video games over riding a bicycle, the preference either aligns with the health promoting behavior or creates a competing demand that undermines a healthy behavior. Understanding women's preferred methods of weight management can inform strategies that nudge women to make healthier choices. Researchers examining a combined primary care and community-based obesity intervention, determined that more women opted for Weight Watchers as opposed to clinical weight reduction counseling because of the information and support included with the Weight Watchers program (Wilson et al., 2010). In comparison, researchers exploring obese women's perspective on physician's involvement in weight management found that white and AA women

desired physician involvement in weight management in the form of encouragement, weight loss advice, and individualized weight management plans (Chugh et al., 2013).

Latina women in the U.S. reported greater experience and success with socially identifiable methods of weight loss like crash diets and supplements as opposed to clinically prescribed interventions (Agne et al., 2012). Nonetheless, the Latina women believed diets, supplements, medications, and exercise regimens were not sustainable in general and preferred a comprehensive weight management program based on lifestyle changes that included their families. African Caribbean men and women with a strong cultural heritage preferred a more culturally appropriate approach to physical activity, namely community dances (Ochieng, 2011). Post-partum AA women wanted weight loss programs to include nutritional information, physical activity guidelines, personalized information related to weight loss goals, and inclusion of family members to provide support (Setse et al., 2008).

Preferred weight management methods vary among women of different races and cultural ethnicities. Women in the previously discussed studies collectively preferred nutritional information, help with planning or setting healthy goals, and social support. Despite the similarities among diverse subsets of women, little is known about the influence of employment on women's preferences. Understanding preference variations among employed women will build on the knowledge about preferred weight management interventions.

Summary of Literature Review and Gaps in the Literature

The review of the literature indicates that women are a growing segment of the workforce who suffer from increasing rates of obesity and who stand to benefit from weight management interventions designed to prevent obesity. While overweight working women are exposed to unique psychosocial and environmental factors within their home life and work life that

influence lifestyle behaviors responsible for weight gain, there are few policies and clinical interventions that support these women in the prevention of obesity. Employers, however, are leading the charge to address obesity in the workplace by changing the work environment and offering health promotion programs to mitigate the negative effect obesity has on the health of human resources, productivity, and financial expenditures. Despite employer efforts, the effectiveness of workplace weight management programs varies. Before interventions can be designed to effectively address obesity prevention, research is needed to understand how and why factors influence weight-related behaviors in clearly defined populations.

The literature is lacking in findings about obesity prevention from the perspective of overweight, working women who are managing their weight to prevent obesity or who have overcome obesity and are attempting to avoid the regain of weight. Previous studies have explored perceptions about overweight and obesity, and facilitators and barriers to weight loss in minority, student, immigrant, and underserved populations, few studies involved employed populations. The two studies dedicated to understanding employed populations examined the influence of specific work environments rather than attempting to understand the phenomenon from the perspective of a specific population. To develop interventions and policies designed to effectively prevent obesity and meet the needs of overweight working women, more research is needed to understand overweight working women's perceptions of and experiences with body weight and weight management. This study will begin to fill the knowledge gap related to working overweight women's perceptions, challenges, and preferences regarding weight control. The knowledge gleaned from this research may then inform future efforts to design effective weight management interventions that meet the needs of overweight working women.

Chapter 3: Methodology

The purpose of this study was to examine overweight working women's perceptions of body weight, and their perceptions and experiences associated with weight management. This chapter describes the study design, methods for sampling and recruitment, data collection procedures, and methods for data analysis along with supporting rationale. Considerations for methodologic rigor, protection of human subjects and data security also are discussed.

Study Design

Qualitative descriptive design (QDD) (Sandelowski, 2000) was used for this study to explore how and why individuals behaved in a particular manner (Mills & Birks, 2014). Through rich descriptions of participants' perceptions of and experiences with a phenomenon, QDD serves as a valued end-product that generates interventional actions by constructing information using minimal inference (Sandelowski, 2000, 2010). Thus, QDD aligned with the study intent to describe perceptions and experiences associated with body weight, weight gain, and weight loss to understand behaviors of overweight working women and inform future research related to health promotion program designs that meet the needs of working women.

The disciplinary underpinnings of QDD are based in naturalistic inquiry, which requires dedication to examining and understanding something in its natural environment (Sandelowski, 2010). Fundamental to naturalistic inquiry is the assumption that reality is subjective and socially constructed through interactions with other people and their environment (Armstrong, 2010; Owen, 2008; Patton, 2015). Therefore, studying the contextual environment is critical to understanding human behaviors that result from perceived realities (Armstrong, 2010; Owen, 2008). Although participants' perceptions of reality may vary depending on the social and cultural contexts that nurture and develop personal views and beliefs (Patton, 2015), the stories

shared by each participant generally represent a reality common to individuals with similar experiences allowing for a collective description of the qualitative data (Sandelowski, 2000).

Sample and Setting

The target population was overweight working women employed full-time in a south-central region of the United States. The corporate offices of a large international employer and the corporate sponsored fitness center open to employees and family members who could have been employed elsewhere served as the primary sampling sites. A homogenous sample of women is not required for QDD (Sandelowski, 2000); thus, the sample was drawn from full-time working women regardless of demographics (age, ethnicity/race, socioeconomic status), job type, or employer. Selecting a sample with maximum variation facilitated exploration of shared and unique perceptions of body weight and experiences with weight control based on emergent subgroups within the sample (Patton, 2015).

To ensure saturation of the data, the sample size was determined concurrently with data collection (Patton, 2015). Data saturation was achieved when no new data were collected on subsequent participants (Patton, 2015). According to Magilvy and Thomas (2009), a range of three to 20 participants is a typical sample size for QDD. As a guide, the sample sizes from qualitative studies of a similar nature and design involving women with overweight and obesity ranged from 11 to 25 participants (Forhan, Risdon, & Solomon, 2013; Miles & Panton, 2006; Visram, Crossland, Cording, & Triggers, 2009). When similar studies were limited to either women with obesity or overweight, the samples ranged from 5 to 15 (Burke et al., 2009; Groven & Engelsrud, 2010; Heintze et al., 2011). We planned for approximately 10 to 12 participants.

To improve credibility of the results, purposeful sampling was used to acquire information-rich cases that brought enlightened information about the questions being

investigated (Patton, 2015; Sandelowski, 2000). A person was eligible for inclusion in the study if they were: 1) self-identified female; 2) a full-time employee who worked an average of 30 hours per week or more (Internal Revenue Service, 2018); 3) 18 years of age or older; 4) overweight (BMI of 25 to 29.9 kg/m^2) based on self-reported height and weight; 5) actively attempting to lose weight or had attempted weight loss anytime in the past; 6) fluent in speaking English. A woman was excluded from the study if she: 1) had knowledge of being pregnant upon enrollment; or 2) had a direct reporting structure through work to the study investigator.

Recruitment

Study participants were recruited using three main approaches. First, an informational flyer (see Appendices A and B for flyer options 1 and 2) was posted in employee breakrooms in the corporate offices of a large private employer. The flyer also was displayed at the check-in counter in the corporate fitness center of the same employer. The flyer included a title highlighting the purpose of the study, basic eligibility requirements, what individuals should expect if they chose to participate, and how to volunteer or learn more about the study (Robinson, 2014). Flyers instructed individuals interested in participating in the study to call or email the investigator. The use of flyers was consistent with the employer's usual approach to communicating non-corporate sponsored events originating outside of the organization.

Second, participants were recruited through the assistance of dietitians and physical trainers who provide nutritional counseling and coaching at the corporate fitness center. The dietitians and trainers offered overweight female clients a flyer and invited them to speak with the investigator about potential participation in the study. The corporate fitness center was open to employees and their families who paid a fee every pay period. Women who used the facility included those employed by the sponsoring company, and women who were family members of

employees but were employed by other companies in the region. Patrons of the fitness center worked in a variety of jobs and settings in retail facilities, healthcare facilities, business offices, logistics (i.e., trucking and warehouses), etc. All overweight working women who used the fitness center and met the eligibility requirements could have participated in the study regardless of their employer.

Third, given the social influence of weight gain and loss, the investigator used a snowball approach by asking early participants for referrals to other potential participants. Snowball sampling relies on people who know other people in similar situations, allowing for the identification of information-rich candidates who are generally well-suited for the study (Patton, 2015). Snowballing is an efficient method of building a sample while simultaneously conducting interviews (Patton, 2015), thus early participants were provided the informational flyer to share with other women they knew in a similar situation.

The primary recruitment plan was expanded to yield an adequate number of participants, by posting the flyer on "Next Door," a social media application that facilitates communication between and among households in a defined region. Content on the site includes categories for community events and general information, under which the flyer was posted. Participants interested in the study used the private messaging function within Next Door to contact the investigator. Additionally, the flyer was posted at a hair salon with permission from the salon owner. The salon was located within a 15-mile radius of the corporate office and corporate fitness center, and the salon owner marketed to female clientele. One participant shared the flyer on a working mom's group in Workplace, a social media site used by the corporate employer.

When a woman called the investigator to inquire about participation in the study, the investigator asked questions to ensure the potential participant met the eligibility requirements

previously outlined. After determining eligibility, the investigator reviewed the purpose of the study, explained what the participant should expect, answered any questions, and arranged a time to meet for an interview.

Data Collection Procedures

A demographic information form, semi-structured interviews, and observations facilitated data collection. The investigator initially used semi-structured, individual, in-person interviews as this method was well suited for QDD, and for exploring perceptions, behaviors, and experiences (Gill, Steward, Treasure, & Chadwick, 2008; Sandelowski, 2000). The COVID-19 pandemic coincided with data collection. Due to quarantines and social distancing protocols, approval was granted by the University of Kansas Medical Center Human Subjects Committee to conduct virtual interviews using a research approved web-conferencing platform, specifically Zoom. During interviews, the investigator used field notes to record observations of facial expressions and non-verbal gestures to augment the voice of the participant (Onwuegbuzie, Leech, & Collins, 2010). Notations of voice inflections and pauses were used to support interpretation of the interviews.

In qualitative research, the methods used to study a phenomenon invariably influence participant perceptions and experiences (Armstrong, 2010). The investigator strived to maintain an open and emotionally neutral approach to the interview to avoid extraneous influence on participants' responses (Gill et al., 2008). As the instrument of the qualitative inquiry, the investigator also used a reflexive journal throughout the research process to document personal perceptions and views that could have influenced interpretation of the narrative information and led to bias (Patton, 2015). The reflexive journal included the investigator's own reflections on motivations, views of the field of study, personal differences compared to the participants, and

exploration of assumptions as a means of avoiding bias and authentically representing each participant's voice (Rae & Green, 2016). By acknowledging and documenting personal bias through journaling, the investigator was able to develop an objective interpretation of the data by keeping bias top-of-mind during analysis and write-up of outcomes. The journal also served as a transparency tool to allow other researchers the ability to evaluate the potential introduction of bias into the study (Ortlipp, 2008).

Semi-structured Interview Guide

To ensure that data collection was comprehensive yet salient and individualized, the investigator used a semi-structured approach to develop the interview guide (see Appendix C) (Patton, 2015). The interview guide consisted of neutral, open-ended questions to minimize a presupposition of thought and encourage the participant to provide responses in their own words (Patton, 2015). For example, rather than asking a participant "Do you want to lose weight to be healthy?" the investigator asked, "Why might you want to lose weight?" The investigator included questions that focused on participants' perceptions, experiences, values, and knowledge of the topic (Patton, 2015). Additionally, the components of Pender's HPM (Pender, 2011; Pender et al., 2011) guided development of questions that provided insight into how women interact with people and various aspects of their environment in the attainment of health (Pender, 2011; Pender et al., 2011). Appendix D includes the interview questions by topic and in relation to the model components. To ensure the semi-structured interview guide met the needs of the study, the investigator conducted pilot testing of the interview guide with two overweight working women prior to conducting interviews for the study. Although the test interviews allow the investigator time to practice and become comfortable with the interview process, no changes were made to the semi-structured interview guide.

Interview Process

At the time of the meeting and prior to beginning the interview, key elements of informed consent were reviewed with the participant. A digital or hard copy of the Research Information Sheet (see Appendix E) covering informed consent was provided to the participant for future reference. Verbal consent, rather than written consent, was obtained before conducting the interview as this study presented no more than minimal risk of harm to the participant (University of Kansas Medical Center, n.d.).

Each participant selected a pseudonym at the start of the interview process. The investigator used the pseudonym to protect the participant's identity throughout the study. To reduce interview fatigue, each interview lasted approximately one hour (Jacob & Furgerson, 2012). The interview was digitally-recorded with the participant's permission. Two recording devices were used for each interview to minimize the risk of lost data (Easton, McComish, & Greenberg 2000). The interviews took place in a private and environmentally comfortable room like a personal home, workplace conference room, or fitness center consultation room of the participant's choice for interviews conducted in person and via Zoom. The use of a private meeting room helped to ensure an uninterrupted interview and facilitate a fully engaged discussion (Easton et al., 2000).

To open the interview dialogue and ease the participant into questions, the investigator began by asking the participant about herself, her family, where she works, and what type of work she does. Through the conversation the Demographic Information Sheet (see Appendix F) guided additional data collection. The demographic data was used to enhance the interpretation of the qualitative data. For instance, data variations emerged based on age, ethnicity, and type of

employment. The investigator used the Semi-Structured Interview Guide (see Appendix C) to conduct the interview and provide consistency to each discussion.

The investigator also used field notes to document observations related to the environment and the participant's affect, body language, behaviors, and speech inflections and pauses when possible during the interview process. Addition notations signaled points of concern during the interview or topics needing clarification. Using hand-written notes from the interview, the investigator reviewed highlights of the conversation with the participant at the end of each interview to ensure the investigator's understanding of information was consistent with what the participant intended.

Data Analysis

The investigator used descriptive statistics to examine the demographic data and qualitative content analysis to explore the narrative data (Elo & Kyngäs, 2008; Patton, 2015). Qualitative content analysis is a method of distilling data from written text, verbal messages, and visual observations into meaningful information (Elo & Kyngäs, 2008; Krippendorf, 2004; Patton, 2015). The goal of content analysis is to identify categories and themes that aid in explaining a phenomenon and providing knowledge that informs a practical guide to action (Elo & Kyngäs, 2008; Krippendorf, 2004; Patton, 2015).

Data Preparation

A professional transcriptionist transcribed each digitally-recorded interview verbatim to represent the nuances of the participant's responses (Marshall & Rossman, 2016). Each interview served as the unit of analysis as the interview constituted a whole and was suitable for extracting meaningful data to create meaning units in the analysis process (Elo & Kyngäs, 2008; Graneheim & Lundman, 2004). The analysis focused on obvious or manifest content in the

narrative, although latent content or underlying meanings within the narrative and observations was also examined (Graneheim & Lundman, 2004).

Data management and organization began with the investigator correctly matching the transcribed interview, field notes, and demographic data to the appropriate participant using the assigned pseudonym. As part of the immersion process, the investigator simultaneously listened to the audio recordings and read the transcribed interview to observe for misinterpretation of recorded information and ensure accuracy of the transcription (Marshall & Rossman, 2016). During the immersive review process, the investigator supplemented the transcribed documents with the hand-written field notes to gain a holistic view of the content.

Data Analysis

Using the deductive content analysis approach, the investigator developed an unconstrained analysis matrix consisting of categories based on the components of the HPM (i.e., individual characteristics and experiences, behavior-specific cognitions, interpersonal influences, situational or environmental influences, competing demands, preferences, commitment to action, and health promoting behavior). An unconstrained matrix allows the investigator to analyze data that fit within the matrix, and to create new categories from data that do not fit the framework using principles of inductive content analysis (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005).

Analysis of the data began with reading and re-reading the interviews for manifest and latent content while writing initial thoughts in the margin of the documents (Elo & Kyngäs, 2008; Graneheim & Lundman, 2004). Meaningful information was identified by reviewing the data line by line. Each meaning unit was shortened into a condensed meaning unit and labeled with a code (Granehein & Lundman, 2004). Codes that fit into the unconstrained analysis matrix were assigned to one of the HPM categories (Elo & Kyngäs, 2008; Hsieh & Shannon, 2005).

Additional data with similar codes that did not fit the matrix were abstracted to form new categories (Granehein & Lundman, 2004). Using an inductive process, interconnected categories were identified and the investigator organically derived themes that further explained the structure of perceptions and experiences based on the research questions (Granehein & Lundman, 2004). The iterative coding process was recorded in a codebook and was maintained as part of the audit trail.

Methodological Rigor

Methodologic rigor relates to the methods of research used to establish trust and confidence in qualitative findings (Thomas & Magilvy, 2011). Although numerous scholars have developed quality criteria for designing and evaluating qualitative research, Lincoln and Guba's model of trustworthiness is commonly used (Cope, 2014). Establishing trustworthiness requires strategies that address credibility, dependability, transferability, confirmability, and authenticity (Guba & Lincoln, 1994; Lincoln & Guba, 1985).

Credibility refers to the truth or accuracy of the findings (Lincoln & Guba, 1985; Morse, 2015). The investigator addressed credibility by spending sufficient time with the participants to build rapport and trust (Morse, 2015). Development of a trusting relationship facilitated an in-depth contextual account of the phenomenon (Morse, 2015). Implementing a peer debriefing process with Drs. Teel and Peltzer, experienced qualitative researchers, enhanced the conceptual development of the study and helped identify evidence of researcher bias (Morse, 2015). Likewise, member checks were used during data collection by asking the participant "Do I have that right?" to verify accuracy of the data (Marshall & Rossman, 2016). Following the interview, the investigator conducted member checks by contacting three participants per the informed

consent to determine if themes were consistent with the participants' views and to help ensure dependability of the findings.

Dependability is the consistency of the data or the ability to replicate findings if the study were repeated (Lincoln & Guba, 1985; Morse, 2015). Given the use of semi-structured interviews, the investigator developed a coding system and documented the system in a codebook to facilitate consistency (Morse, 2015). Thick description was used to strengthen the opportunity of identifying duplication of information (Morse, 2015). Additionally, an audit trail provided a transparent account of how the data were collected and managed (Marshall & Rossman, 2016).

Transferability, or the applicability of findings to other contexts relies on a clear characterization of the study participants and thick descriptions of the phenomenon being studied (Lincoln & Guba, 1985; Morse, 2015). A clear understanding of the participants in relation to the phenomenon enhanced efforts in transferring the findings to other groups and settings (Cope, 2014). To address transferability, the investigator clearly described the characteristics of the participants and used rich description and quotes to support themes.

Confirmability is the degree of investigator neutrality or the ability to establish that findings are derived from the participants (Tobin & Begley, 2004; Lincoln & Guba, 1985). In addition to the use of rich description and quotes to depict emerging themes, the investigator described how interpretations and conclusions about the data were derived directly from the participants' narratives (Cope, 2014).

Authenticity refers to the extent to which researchers represent the essence of a phenomenon through a fair and conscientious representation of multiple perspectives (Patton, 2015; Cope, 2014; Schwandt, Lincoln, & Guba, 2007). The investigator addressed authenticity

by clearly depicting the voice of each participant and showing the range of different realities as they emerge from the data (Tobin & Begley, 2004). Last, the investigator addressed each of the quality criteria by maintaining a reflexive journal to document personal biases, feelings, thoughts, and influences on analytic decisions (Mills & Birks, 2014; Morse, 2015).

Ethical Considerations

Prior to starting data collection, the investigator sought approval from the University of Kansas Medical Center (KUMC), Human Subjects Committee. Under the revised Common Rule issued by the Department of Health and Human Services (KUMC, n.d.), research involving interviews and observations including auditory recordings qualifies as Exempt Category 2 if: 1.) information collected would not reasonably place the participant at risk if disclosed outside of the research, or 2.) the information collected is linked to participants through identifiers and the Institutional Review Board (IRB) conducts a limited review. This study met the qualifications of Exempt Category 2 research and it did not involve federal funding; therefore, under the KUMC Policy for Flexible IRB Review (KUMC, n.d.), the investigator requested a Flexible Review from the University of Kansas Internal Review Board and approval was granted (see Appendix G).

Eligible candidates who volunteered to participate in the study received a Research Information Sheet (see Appendix E) outlining the purpose of the study, the voluntary nature of the study, expectations of participating in the study, risks and benefits of participating, and contact information for the investigator and the KUMC IRB. After verbal review of the Research Information Sheet prior to the interview, verbal consent was obtained.

Each participant was asked to create a pseudonym to protect her identity throughout the study. The investigator knew the identity of the participants, yet pseudonyms were used when discussing the study with committee members, reporting outcomes, and presenting the study.

A master list identifying each participant and her pseudonym along with digital data files associated with each interview were stored on the KUMC School of Nursing network drive. Transfer of digital files between the investigator and transcriptionist or dissertation committee members occurred through the University of Kansas' secure file transfer process and identifying information was removed from the files prior to transfer of data.

Chapter 4: Findings

Eleven overweight working women participated in a semi-structured interview to answer the following research questions:

RQ1: How do overweight, working women describe body weight?

RQ2: What are overweight, working women's experiences of weight management?

RQ3: What factors contribute to weight gain according to overweight, working women?

RQ4: What factors promote weight maintenance and loss in overweight, working women?

RQ5: What weight maintenance and loss methods are preferred by overweight, working women?

RQ6: What are the barriers to weight maintenance and loss for overweight, working women?

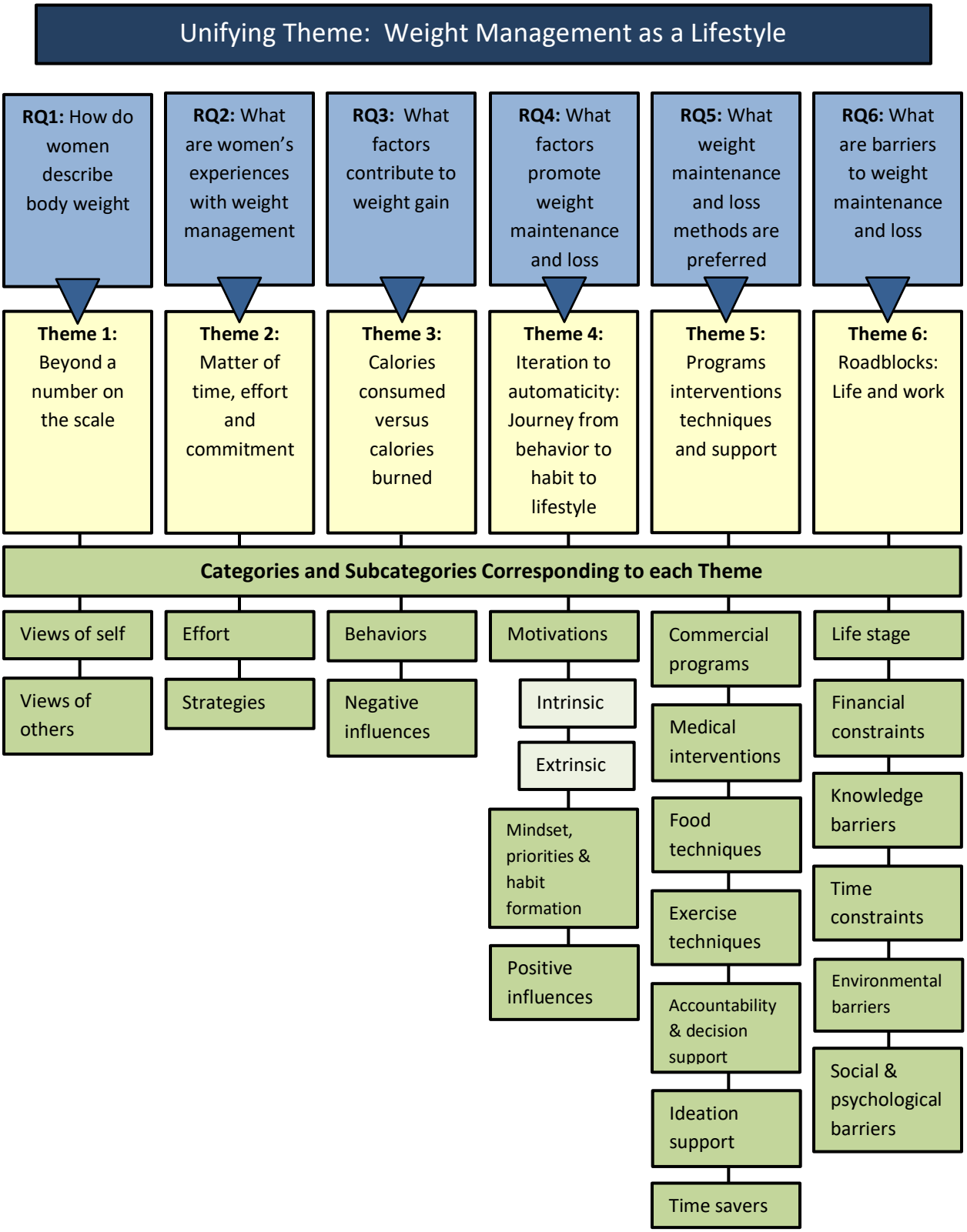
Using Pender's HPM as a framework for capturing biological, psychological, social, and environmental influences on weight related behaviors, the interviews explored participants' perceptions and experiences with body weight and weight management.

As participants consistently reported that maintaining a healthy body weight was more than a single task, *Weight Management as a Lifestyle* became apparent through six themes: *Beyond a Number on the Scale; A Matter of Time, Effort, and Commitment; Calories Consumed Versus Calories Burned; Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle; Programs, Interventions, Techniques and Support;* and *Roadblocks: Life and Work*. The unifying theme of *Weight Management as a Lifestyle* reflects the complex and interconnected nature of factors within each theme that influence overweight working women's weight-related behaviors.

The first theme, *Beyond a Number on the Scale,* included participants descriptions of different body weights in relation to self and others. The second theme, *A Matter of Time, Effort, and Commitment*, focused on women's experiences with effort and weight management strategies. The third theme, *Calories in Versus Calories Out*, contained details about behaviors and negative environmental, social, psychological influences that contributed to weight gain. The fourth theme, *Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle*, described personal motivations, mindsets, behaviors, and influential factors that promoted weight maintenance or loss in overweight, working women. The fifth theme, *Programs, Interventions, Techniques, and Support* delineated various methods of weight maintenance or loss and participants' preferences. The final theme, *Roadblocks: Life and Work* encompassed life stages, financial, knowledge, and time constrains, along with environmental and psychosocial barriers to working women's engagement in healthy weight-related behaviors.

The influences of multiple factors within and across each theme and category were interdependent and constantly varied in magnitude. These dynamic relationships between influential factors created a counterbalance effect on weight-related behaviors. For instance, a shift toward more positive influences in day-to-day life outweighed the negative influences and supported healthier behaviors. Conversely, a greater number or intensity of barriers and negative influences led to unhealthy weight-related behaviors. Participants' ability to effectively manage the influences culminated in the unifying theme of *Weight Management as a Lifestyle*. Figure 2 depicts the unifying theme and research questions with corresponding themes, categories, and subcategories. Details about the study participants, each theme and related categories follows.

Figure 2 *Research Questions, Themes and Categories*



Sample Description

Interviews were conducted with 11 overweight, working women. The average length of the interview was 57 minutes (range 45-69 minutes). The participants ranged in age from 29-55 years with a mean age of 39.8 years. Table 3 summarizes the participant demographics. Most women in the sample were white (n = 10) and non-Hispanic (n = 10). Seven participants were married, 3 were divorced, and 1 was divorced and remarried. Forty-six percent of the sample did not have children, while 55% had two or three children. All women reported high school completion and 64% attained a bachelor's, master's, or doctorate degree. Nine participants recounted working jobs that were primarily sedentary, one woman indicated her position at work was 50% sedentary and 50% active, and one woman spent 100% of her time at work standing or walking.

Table 3

Participant Demographics (N = 11)

Demographic	Frequency (%) unless specified*
Mean age and range in years	39.8 (29-55)*
Race	
White	10 (90.9)
Indian/Asian	1 (9.1)
Ethnicity	
Non-Hispanic	10 (90.9)
Hispanic	1 (9.1)
Marital status	
Married	7 (63.6)
Divorced	3 (27.3)
Divorced and remarried	1 (9.1)
Number of children	
0	5 (45.5)
2	4 (36.4)
3	2 (18.1)
Education level	
High school graduation	1 (9.1)
Some college	3 (27.3)
Completed bachelor's degree	3 (27.3)
Completed graduate degree	4 (36.4)
Type of work	
Healthcare	
Clinic/office manager	1 (9.1)
Pharmaceutical salesperson	1 (9.1)
Hospitality – restaurant server/manager	1 (9.1)
Not-for-profit – executive director	1 (9.1)
Retail corporate office	
Manager or director	6 (54.5)
Administrative assistant	1 (9.1)
Annual household income	
$25,000-49,999	1 (9.1)
$75,000-99,999	1 (9.1)
$100,000-149,999	3 (27.3)
$200,000-149,999	2 (18.1)
$250,000 or greater	3 (27.3)
Prefer not to answer	1 (9.1)
BMI	
26	1 (9.1)
27	4 (36.4)
28	4 (36.4)
29	2 (18.1)

Theme 1: Beyond a Number on the Scale

The theme, *Beyond a Number on the Scale*, emerged from participant's descriptions of body weight. The descriptions were organized into two categories: *Views of Self* and *Views of Others*.

Views of Self

In the first category, *Views of Self*, participants described themselves in terms of how they felt and how they looked, yet often prefaced their self-descriptions by noting family characteristics or heritage as a way of justifying or explaining the origins of their body habitus. For example, phrases like "I come from hardy German stock," "a big-boned family," "an athletically-built family," "a meat and potatoes family," or "a farm family, where no one was skinny" were communicated during the interviews.

Although four participants reported being self-critical or have a negative mental image of themselves, all participants used fairly innocuous physical descriptors like "curvy," "athletic," "squishy," "fluffy," "chubby," "muffin-top" and "bloated" when referring to how they felt or looked. One participant who had gastric bypass surgery focused on the after-effects of significant weight loss by pointing to her "sagging skin," "bat wings," and "extra fat pockets around my inner thighs."

Participants reflected on how they looked before becoming overweight by noting "I used to be toned," "have awesome legs," or "be super skinny without trying." Participants also reported feeling "leaner," "tighter," or "confident" when they weighed less. Karen stated, "So, I'm apple shaped. My apple just got bigger. I used to be a Pink Lady and now I'm a Red Delicious."

When asked how the participants felt about their body weight responses ranged from "I hate my body" to "I'm ok with my weight and don't worry about it too much." Adriane declared, "My weight, it's a work in progress. I try not to so much look at my weight as I do my shape." Ellen also confirmed, "I don't need the scale…I feel good when my weight is a little bit lower. I feel like I have it more together, like I'm in control of my body."

Views of Others

The second category, *Views of Others*, constituted participants' descriptions of others, including underweight, normal weight, overweight, and obese individuals. All participants disclosed trying not to be judgmental of others or not wanting to inadvertently offend or hurt anyone based on body weight. Like the participants' self-descriptions, perceptions of others were not solely based on a body weight number. Amanda noted, "just because someone is big doesn't mean they are unhealthy and just because they are skinny doesn't mean they are healthy." "Posture," "confidence," and personal "expressiveness" played into how participants viewed others. Likewise, participants reported that "curves can look good" or "sexy" on others.

Underweight or normal weight individuals were commonly referred to as "skinny" and participants indicated that "skinny people had a high metabolism," were "fit," or "worked really hard to be thin." However, the participants viewed those who were "too skinny" as looking "sick" or like they were "trying to control something in their life" alluding to concerns about mental health.

When participants described underweight or normal weight individuals, they used terms like "twigs," "stick thin," "size 2" or "tiny." Although participants did not shy away from using adjectives to describe their own bodies and one participant referred to her heavier bothers as "big and burly," most participants refrained from using adjectives to describe other individuals with

overweight or obesity. Instead, they focused on their views and feelings toward, primarily, people with obesity. Karen declared, “I feel badly for obese people. I think they may have struggles that are really hard to overcome.” Amanda expressed that “I feel sad because there are missed opportunities when you are heavier.” And Ellen discussed her family’s view that individuals with obesity do not get the same career advancements or job opportunities.

Participants also described how being around others with different and similar body weights made them feel. Kimberly stated, “I don't feel comfortable, like, going to take pictures… [with my] sisters because they're so super small and skinny.” Whereas Amie said, “Both of my sisters have like the same body shape as me. I mean, I find it comforting.” When interacting with individuals with obesity, Tami disclosed “I get self-conscious. I don’t want them to think I’m staring so I don’t look, but I don’t want them to think I’m ignoring them either – that can be dehumanizing. I just don’t know how to react.”

Despite being overweight themselves or having family members who were obese, three participants reported that family and friends would make negative, snide, or derogatory comments about obese people. The same was not conveyed about underweight individuals. According to Tami, “my family expresses more concern for someone who might be anorexic than for someone who is obese.”

Participants shared views of body weight that stemmed from personal experiences and observations. Their responses reflected perceptions rooted in a general sense of self-acceptance and empathy toward others. Though participants clearly delineated views of body weight in relation to self and others, the perceptions collectively influenced emotional responses, individual behaviors, and social interactions.

Theme 2: A Matter of Time, Effort and Commitment

The second theme, *A Matter of Time, Effort and Commitment*, describes the participants' experiences with weight management. Overweight working women's experiences were categorized based on *Experiences with Effort* and *Experiences with Strategies.*

Experiences with Effort

The first category, *Experiences with Effort*, encompassed views on weight management and details about what was required to facilitate effort, the magnitude of work needed for weight loss, and gender differences related to effort. Participants viewed weight management or control as efforts aimed at losing excess body weight or maintaining a perceived ideal weight. Time and effort were interdependent constructs foundational to attaining a healthy weight for the women in the study. Participants indicated that time was necessary to plan and incorporate weight loss efforts into their life, and the effort itself required time to execute. Each woman spoke of "making," "finding" or "dedicating" time for "meal planning," "prepping healthy snacks," "preparing healthy meals," "tracking calories," "working out," or "going to the gym." Divya stated:

> When I don't have time to plan healthy meals – when I don't know what I'm going to eat then I don't think ahead, I just eat. When I have time to plan my meals, I have fixed things in my mind and fixed things in my refrigerator – it's good for me.

All participants conveyed that maintaining a healthy weight was not easy or that losing weight was hard to do. Although 10 of the participants expressed confidence in their ability to lose weight, they recognized it would not happen quickly or without significant effort. Amie indicated "as I get older, weight loss is not immediate – it takes more time and effort," while Karen noted, "the things I used to do for quick wins don't work anymore."

As participants reflected on their past weight-related behaviors that aided in weight control or weight loss, several noted the magnitude of effort that was required. Ellen shared she was lean when she was a competitive swimmer and rower in college, but she "worked out 20 plus hours a week, twice a day" to stay slender. Linda outlined her routine of working with a trainer three days a week and working out on the elliptical machine another three days each week. And Kimberly stated, "I lived at the gym, like five days a week" to maintain a healthy weight.

Three participants commented on how difficult it was to manage their weight compared to men. For instance, Ellen remarked that she must make different food choices than her husband because "he can eat anything without gaining weight." Another participant agreed by saying, "it's easier for men – they lose weight easy." The perceived ease with which men managed weight led to frustration and a sense of failure as Amie shared, "weight loss is easy for men…women get discouraged when things don't happen immediately. They have so much going on – they just want quick results."

Experiences with Strategies

The second category, *Experiences with Strategies*, was an amalgamation of participants' guiding principles around weight maintenance and weight loss: sustainable behaviors, persistence and iteration, and lifestyle approach. Seven participants disclosed that programs and diets are not always "sustainable" or that they would use diets and weight loss programs as a starting point for weight loss. Despite the lack of long-term diet or program adoption, the participants discussed incorporating key features, tips, techniques, or recipes from programs into their daily lives to support healthier habits. For instance, Adriane reported losing 30 pounds while on a keto diet and even though she was no longer on the diet, she learned to be mindful of

foods high in carbohydrates and sugar. As a teenager, Ellen attended Weight Watchers with her mother, and she continued to use the information she learned about portion control into adulthood. In many cases, participants continuously leveraged their cumulative knowledge about weight-related skills to facilitate ongoing healthier choices throughout their lives.

Although all participants tried multiple interventions from diets and supplements to digital apps and commercial programs with varying degrees of success, each woman conveyed the importance of persistence or not giving up. For instance, Linda stated, "like, give me a break, just leave me alone. It gets to be too much, so I just quit using it [Noom] for a bit until I'm ready to refocus." While some participants took a break from an intervention, others would immediately try another intervention to determine if it was a better fit for their lifestyle. As an example, Ellen employed an athletic trainer but did not get the results she wanted from the trainer's weightlifting routines. Instead of quitting, Ellen found another trainer who promoted aerobic activities like cycling that aligned with her exercise preferences. Whether participants engaged in weight loss efforts around eating or exercise, they maintained a "stick to it" mentality and kept trying by using an iterative approach to find what worked for them.

Participants' iterative approach to finding solutions and their unwavering determination culminated into a common sentiment – the idea that effective weight management is a lifestyle, not just a diet. A lifestyle approach implied that efforts designed to promote weight management or weight loss were incorporated into the daily routines of these participants. By relying on personal persistence, deploying an iterative process to find what works, and adopting or committing to sustainable healthy behaviors, overweight working women formulated customized weight loss strategies that harmoniously integrated with their lives.

Theme 3: Calories Consumed versus Calories Burned

The third theme *Calories Consumed versus Calories Burned* consisted of participants' descriptions of factors that contributed to weight gain through unhealthy eating and exercise behaviors. The factors were grouped into two categories: *Weight Gain Behaviors* and *Negative Social, Environmental, and Psychological Influences.*

Weight Gain Behaviors

The first category, *Weight Gain Behaviors*, included participants' illustrations of basic behaviors that contributed to weight gain, specifically bad or unhealthy eating habits and a sedentary lifestyle. Participants acknowledged choosing "quick," "easy," and "convenient" foods over healthier options; skipping meals until they were "starving" then eating whatever was available in the moment; eating "carb-heavy," "fatty," "sugary" or "unbalanced" snacks and meals and overeating or eating large portions. Apart from unhealthy eating habits, most participants did not "move" enough and needed to "walk" more, especially at work where 10 women spent most of the time sitting at desk or in a car. Participants were knowledgeable about behaviors that contributed to weight gain, yet factors related to environmental, social, and psychological influences often were stronger than their will to change behaviors.

Negative Social, Environmental, and Psychological Influences

Social, environmental, and psychological influences on weight-related behaviors were interconnected throughout participants' narratives. Whether at home or at work, social connections were an integral part of the environment. The interactions with people and the physical environment evoked emotions or psychological responses which influenced behaviors. Participants differentiated specific influences based on the behavioral effect or outcome, therefore, information will be presented thematically in terms of positive influences, negative influences, and barriers to healthy weight-related behaviors throughout this chapter.

The second category, *Negative Social, Environmental, and Psychological Influences*, contained information about factors that encouraged unhealthy weight-related behaviors. Negative influences on behaviors stemmed from perceived relationships between food and fellowship, emotional triggers, and culture. Although food is a biological necessity, it represented a symbol of fellowship and caring when shared with others as conveyed by Amanda's comment, "food is our family's love language – food is always a big part of our family." Seven participants reported that unhealthy, rather than healthy, foods and beverages were central to social gatherings with family and friends and teambuilding events with co-workers. Further, the pleasurable feelings associated with companionship and food made it easier for participants to view social interactions as a "treat" or a time to splurge on unhealthy food options.

Six participants disclosed that stressful situations at home and work triggered unhealthy eating behaviors. One woman noted, "I had a disastrous marriage and threw my good habits out the window – it was the one thing I could give up just to stay sane and not worry about my marriage." When feeling "overwhelmed" and "fatigued" by responsibilities, participants found unhealthy foods "comforting" and associated eating with relaxation. At the end of a long workday, Karen enjoyed connecting with a friend over a meal to discuss events of the day and unwind. Stress or emotional eating was problem for four participants and two participants reported eating out of "boredom" or just to pass the time at work. Although women in this study anticipated feelings of guilt after consuming unhealthy foods, the immediate need to alleviate unwanted stress-related emotions eclipsed the anticipated guilt in the moment.

Four participants remarked on cultural influences in the environment. "Southern" or "comfort" foods were frequently mentioned and associated with "fried" and "high-fat" food

options. While some women in the study had always lived in the south and recognized the "southern diet," four participants were exposed to cultural differences through family ties and relocating to different areas. Two participants with Hispanic families confirmed that food was a big part of the culture. One participant moved from Minnesota for work and noticed the South is "all about the fried foods and just not being as active." Another woman in this study who lived in India until she graduated college continued to prepare traditional Indian foods and said, "Indian food has a lot more carbs – rice is part of every meal." While culture was an integral part of participants' lives, they were quick to recognize negative influences and stress the importance of making mindful choices as Karen remarked, "I grew up on southern food, it is just so comforting…I have to really focus on the healthy foods when deciding what to eat."

Theme 4: Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle

The fourth theme, *Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle*, was comprised of participants' descriptions of factors that promote weight maintenance or loss by supporting healthy eating and exercise behaviors. Their experiences were arranged into three categories: *Motivations; Mindset, Prioritization, and Habit Formation;* and *Positive Social, Environmental, and Psychological Influences.*

Motivations

The first category, *Motivations*, was made up of two subcategories, *Intrinsic Motivations* and *Extrinsic Motivations*, which highlighted driving forces for weight loss behaviors. *Intrinsic Motivations* were derived from the individual's personal reward system, and *Extrinsic Motivations* originated from external reward systems. Participants were intrinsically motivated to lose weight to feel "healthy" and "better" or to "promote longevity" and "maintain quality of life." Aesthetics was another intrinsic motivator for weight loss as eight participants wanted to

look “good” or “professional.” When discussing weight loss in relation to exercise, participants wanted to “be strong,” “build muscle,” “tone-up,” and “get fit or lean.”

Seven participants wanted to lose weight to “boost self-confidence,” “improve insecurities,” and “feel comfortable in my own skin;” whereas others wanted to boost “energy” or “set a good example for my kids.” Weight loss generated a positive feedback loop for Karen, as she indicated that “being a healthy weight makes me want to be more active and not crave sugary bad foods.”

Several participants outlined extrinsic motivations for losing weight like being able to “buy stylish clothes” and receiving “praise” or “positive remarks” from friends and family members. One woman was motivated to eat healthier when she recognized the amount of money saved by not buying “junk food”. For mothers in the study, children were important motivators. Participants conveyed that maintaining a healthy weight was all about “being here for my kids.” A healthy weight translated to overall health and longevity, which meant participants had more time with their children and future grandchildren.

Winning a contest is a common extrinsic motivation, yet participants expressed different opinions about “bets” and weight loss “competitions” or “challenges.” Several women indicated they were motivated by competitions when commenting on past experiences with “winning a fitness center competition” and participating in “fitness challenges in the Army.” Gena shared she quit drinking sodas nearly 30 years ago when her father bet her $500 she would not succeed. She was motivated by the thrill of winning against her father and by the financial wager. Other participants were frank about their dislike of formal competitions. Karen reported that “competition demotivates me; it just doesn’t work for me…I do the exact opposite.”

Physical health was the most common motivator for all participants to lose weight or maintain an optimal weight, yet other motivating factors were individualized. Despite the variations among participants, each woman identified things in her life that inspired healthy weight-related behaviors. It was the participants' readiness to elaborate on what was important to them, rather than the actual motivator, that demonstrated the significance of motivational factors in relation to trying and adopting healthy behaviors.

Mindset, Prioritization, and Habit Formation

The second category *Mindset, Prioritization, and Habit Formation* delineated mental and behavioral processes of the iterative journey to creating a healthy lifestyle. Participants indicated that effective weight management was a "mental thing" or ethos. Establishing and maintaining a frame of mind conducive to healthy behaviors was critical for weight loss. The path to developing healthy habits and making behaviors automatic required being "mindful of choices," "recognizing triggers" associated with unhealthy behaviors, and being fully invested "in the moment" when making weight-related decisions.

Also, participants found that maintaining a healthy body weight was dependent on "prioritizing" what was important. For most women in this study the prioritization process involved finding a "balance" between work and home life, making "time for me," and staying positive and strong-willed about their conviction to attain a healthy body weight. Prioritization was exemplified by Linda's comment, "I'm finding more balance in work and prioritizing me now. I'm excited about the future and seeing the flexibility at work that allows me to take care of me. It's freeing."

When stressed or dealing with constant competing demands, participants found it easy to lose sight of priorities and fall back on past behaviors as Karen noted, "stress creates a situation

where it is hard for me to focus and there is not much motivation to change things because I'm in survival mode." Some women in the study reported that "organizing" responsibilities; establishing "achievable goals;" and "slowing down to reflect" on life, family, and accomplishments helped to alleviate stress and refocus on personal priorities.

Participants expressed the key to an optimal weight was making healthy weight-related behaviors a "way of life" by trying new healthy behaviors, determining which ones were sustainable and work best, and adopting those behaviors until each one became a habit or automatic. The additive effect of assimilating multiple healthy habits into everyday life was found to be helpful. However, the process of forming healthy habits was not easy, it required commitment. Amanda noted, "I've got to start creating good habits and doing things for myself. I've got to stick to a no excuses mentality for a certain number of days to create new healthy habits." Karen shared a similar experience, "If I can get through 3 days of eating healthy, then I'm pretty good – feel satisfied with healthy food." Getting past a period of accepting a new behavior, routinely performing the new behavior, and avoiding old unhealthy habits was key to building new healthy habits and making them automatic or a "way of life." After having been on a "clean" diet free from sugar and overly processed foods for several weeks, Ellen found the taste of sugar was "disgusting." Conquering the transition period of moving from a behavior to a habit was challenging, but participants realized it was an imperative part of the healthy lifestyle journey.

Although lifestyle was discussed in terms of healthy eating and exercise habits, five participants expanded the notion of lifestyle to reflect holistic health by recognizing the interconnectedness of mental well-being, sleep, food, and activity. Linda said, "when I eat right, I sleep better and when I sleep, I have energy to exercise. All those things really come together."

Shaelyn indicated that building a healthy lifestyle started with "mental health – that's the first thing I have to address. When my mind is healthy, I can lose weight." For other participants, mental well-being and a healthy lifestyle included taking time to "appreciate the beauty around me," and being "grateful" for all life has to offer.

Positive Social, Environmental, and Psychological Influences

The third category, *Positive Social, Environmental, and Psychological Influences*, outlined support structures valuable to participants' weight loss efforts. Positive influences on weight-related behaviors were derived from interactions with people and surroundings that created emotional, informational, and instrumental or tangible support for weight control or loss. Confiding in family, friends, or co-workers about shared weight loss experiences offered participants emotional support in knowing they were not alone in their weight loss journey, while encouragement and positive reinforcement provided by others enhanced their commitment to healthy behaviors.

Participants were more inclined to initiate weight management activities when friends and coworkers were engaged in the same activities as Amie noted, "women do better in groups or with a partner. No one likes to work out alone." Participants emphasized the importance of social connections when discussing physical activities at work and at home. Divya and Tami mentioned "walking meetings" and "yoga breaks" with co-workers, while Karen met friends for tennis or morning walks. Also, participants alluded to modeling dietary behaviors of others as Shaelyn remarked, "I'm easily influenced by other people. If I'm around someone eating healthy, then that's what I prefer to eat. I have a friend who is overweight and when I'm around her I worry." Divya indicated she ate healthier foods when she was around her friend who was

vegetarian and Linda commented, “I sit next to a total nutrition buff at work – I’m trying to catch the vibes from him.”

Social networks offered participants informational support by facilitating knowledge acquisition and strengthening understanding of existing weight related ideas. Learning about useful methods of weight loss was foundational to practicing new healthy behaviors. Through family and friends, participants cultivated knowledge by sharing healthy recipes, diets, and tips about physical activity or how to make behaviors easier. Informational support in relation to knowledge barriers and ideation will be discussed in more detail later in this chapter.

Beyond emotional and informational support, participants focused on tangible support provided by spouses in managing family needs and household responsibilities. For example, Kimberly stated “my husband and I are a team – I find recipes and do the online shopping and he prepares dinner.” Linda’s husband helped by caring for their pets and performing household chores, which afforded her more time to exercise. Eight women in the study who were married or remarried shared that the instrumental support of their husband had a positive influence on weight-related behaviors. A single mother of school-aged children also emphasized the importance of a supporting spouse by reflecting on her situation:

> It would be awesome if [my kids] could count on their dad. I’m the one who supports the boys’ school and sports activities. When there is too much going on at once, I get overwhelmed freeze up and fall back on bad habits.

Participants valued various types of support associated with social, environmental, and psychological influences. Support structures provided a sense of emotional well-being, material information, or assistance with domestic responsibilities that aided women’s intentions and efforts to attain an optimal body weight by fostering healthy weight-related behaviors.

Theme 5: Programs, Interventions, Techniques and Support

The fifth theme, *Programs, Interventions, Techniques and Support*, was developed to describe the collection of methods participants used to lose or maintain a healthy weight. The various methods were organized into seven categories based on type or how the method was used to support weight-related behaviors: *Commercial Programs, Medically Supervised Programs and Interventions, Food and Nutrition Techniques, Physical Activity Techniques, Accountability and Decision Support, Ideation Support,* and *Time Savers*. Each category included numerous things participants tried with varying degrees of success. Table 4 provides a complete list of the methods used with notations designating where participants made positive comments (+), negative comments (-), or mixed comments (±) to convey their preferences.

Table 4

Weight Loss Methods

Weight Management Programs, Interventions, Techniques, and Support	
Commercial Programs: Diets, supplements, meal replacements, behavior change guidance, exercise regimes, and combination programs delivered in-person, online, or via digital applications, books, or videos	Overall comments ± Atkins Diet Beach Body on Demand Body for Life CrossFit Dukan Diet Herbalife Keto Diet Metabolic Research My Fitness Pal Noom P90X Paleo Diet Plexus South Beach Diet Tae Bo Weight Watchers Whole 30 Zumba
Medically Supervised Programs and Interventions: Weight loss managed by a licensed clinician	New Direction ± Dietitian ± Bariatric surgery +
Food and Nutrition Techniques: Interventions, techniques, and strategies	Avoid fried food, sweets, carbs, sodas + Eat more fruits/veggies, plant based + Balanced diet + Improve water intake + Avoid alcohol + Frozen healthy meals + Avoid over-processed foods + Bring lunch to work ± Supplements, meal replacement bars/shakes ± Cooking at home ± Healthy meal planning and prep ± Eat smaller, more frequent meals ± Fasting, intermittent fasting ± Avoid red meat ± Buy quality/organic foods ± Fad diets, cleanses (e.g., grapefruit diet, lemonade diet, Jello diet) – Lecture about what to eat, written diet plan –

Table 4

Weight Loss Methods

Weight Management Programs, Interventions, Techniques, and Support	
Physical Activity Techniques: Types of exercises and strategies	Walking, hiking + Cycling + Tennis + Swimming + Cardio, aerobics + Yoga + Dancing, gardening, recreation + Gym ± Trainer, coach ± Treadmill, running ± Weight training ± Rigid training schedule – High impact sports, soccer –
Accountability and Decision Support: Techniques to ensure execution of healthy behaviors and support structures to promote healthy weight-related decisions	Set realistic goals + Cook and eat at home + Avoid junk food aisles in stores + Portion control, avoid second helpings + Grow vegetable garden + Schedule exercise time + Workout partner + Wearable tracking devices + Healthy meal planning and prep ± Exercise/weight loss competitions ± Bring own lunch to work ± Food tracking, calorie counting ± Weigh food ±
Ideation Support: Strategies to gain knowledge and generate fresh ideas around weight-related behaviors	Social media, blogs, videos for healthy food/recipe and physical activity ideas + Share healthy recipes with family & friends + Shop in-store let seasonal produce spark recipe ideas ± Internet to research healthy foods, diets ±
Time Savers: Techniques to save time and promote healthy weight-related behaviors	Online grocery shopping and pick-up + Rotate easy, healthy recipes + Cook leftovers + Kitchen equipment (Instant Pot, slow cooker, Foodie) + Semi-prepared and mail order meal kits ±

+ All positive comments *- All negative comments* *± Mixed positive and negative comments*

Commercial Programs

The first category, *Commercial Programs*, consisted of diets, supplements, meal replacements, behavior change protocols, exercise regimens, or combination programs delivered in-person, online, or via books, digital applications, or videos. Women in the study mentioned trying 18 commercially available programs presented in Table 4. Overall, participants found commercial programs helpful for weight loss, but most agreed the programs were not sustainable due to expense, time requirements, adverse effects, or dietary limitations that were too strict. For instance, Adriane lost 30 pounds on the Keto diet, but stopped the diet immediately following weight loss to enjoy a greater variety of foods. Ellen could not tolerate the flu-like symptoms experienced with the Keto diet and she found little room for error using the Whole 30 diet.

Medically Supervised Programs and Interventions

The second category, *Medically Supervised Programs and Interventions* accounted for methods of weight loss facilitated by a licensed healthcare professional. One participant utilized the New Direction program, dietary clinical counseling, and bariatric surgery to promote weight loss. She had positive results during the first attempts with New Direction, a clinical weight loss program, but little success when she tried it a second time. The participant reported the dietitian provided good information, but the consultation was not very helpful because she already knew what she should be eating she just needed help carrying out the recommendations. In hindsight, the participant was glad she had surgery. Even though she gained some of her weight back, she lost a significant amount of weight following the surgery and kept most of it off.

Food and Nutrition Techniques

The third category, *Food and Nutrition Techniques*, comprised personal interventions, techniques, and strategies to promote healthier eating behaviors. Most participants tried to avoid

or limit fried foods, sweets, carbohydrates, sugary drinks, and over-processed foods while they focused on eating more fruits and vegetables or a balanced diet. Participants had mixed opinions about fasting, eating smaller more frequent meals, and avoiding red meat. Although eight participants believed meal planning and cooking at home were important to promoting healthy eating behaviors, most indicated they "didn't have time" to plan meals. The participants acknowledged bringing their own lunch to work would promote healthier food choices, still they regularly ate in the corporate café or went to a restaurant for lunch. Four participants turned to meal replacement bars or healthy frozen meals for quick, on-the-go nourishment despite being expensive. Seven participants found fad diets and cleanses like the "lemonade diet" or the "grapefruit diet" to be ineffective.

Physical Activity Techniques

The fourth category, *Physical Activity Techniques*, delineated numerous types of preferred exercises and training strategies, such as walking, cycling, aerobics, yoga, and tennis. Participants also enjoyed recreational activities like hiking on local trails, gardening, and dancing. There were mixed feelings about using a gym. Although six women worked out at a gym regularly, five participants indicated gyms were too expensive and they were not conveniently located to work or home. Drive time to and from the gym and not having ample time to work out and shower during lunch were commonly reported drawbacks to gym utilization. The six participants who used a gym were all members of the corporate fitness center offered through their employment for $9 per 2-week pay period.

Five women in the study used a "trainer" or "coach" to guide their exercise routines. Two participants worked with the same trainer over 10 years, yet others shared concerns about financial costs and the trainer's recommendations not aligning with personal preferences.

Although exercises like running outdoors or on a treadmill and weightlifting were appealing to five working women, three participants indicated these activities were boring or they preferred less strenuous forms of exercise. Most participants did not like rigid training routines and high-impact sports like soccer were not preferred due to the stress on their bodies as Gena noted, "my knees would probably kill me if I started playing soccer again like I used to do."

Accountability and Decision Support

The fifth category, *Accountability and Decision Support*, constituted various methods used to ensure accountability to healthy weight-related behaviors and ways to promote healthier in-the-moment decisions around food and exercise. Setting realistic goals and developing a plan of action for effective weight management was important to participants. Tami took the action plan one step further by voicing her intentions with another person, "I must share this plan with my husband or friends and develop a strategy where we support one another based on the plan." Having a workout partner was an important accountability strategy. Six participants reported exercising with a friend, which made the physical activity more enjoyable and encouraged follow through with planned exercise routines.

Other preferred approaches to support accountability and healthy decisions included "avoiding junk food aisles" at stores, "growing my own vegetable garden," "blocking time on my work calendar for exercise, "avoiding second helpings of food," and "tracking my steps" with a wearable device. Grocery shopping online forced some participants to "plan meals" while considering what to add to the cart and prevented others from adding "junk" food to the cart as Divya noted, "I order my groceries online after dinner rather than going to the store after work when I'm hungry, I don't make bad choices."

Despite time limitations that interfered with meal planning, prepping healthy snacks and foods, and cooking at home, all participants agreed that these strategies were critical to ensuring healthy decisions and behaviors related to eating. Linda stated, "when I'm on my game, I have fruits, vegetables, and salads ready to eat so I don't make poor decisions." Even when Gena did not have time to prep healthy snacks, she kept fresh fruits like bananas, apples, or pears readily available so she would grab those instead of chocolate or chips.

Calorie counting or food tracking was mentioned with differing opinions. Although participants declared calorie counting an effective way to monitor food intake and often used apps to support this activity, they found the process tedious and eventually stopped logging foods. For one participant, diagnosed with Type I diabetes at an early age, counting calories, protein, sugar, and carbohydrates was not an option. She found an app made the process of managing diabetes easier and it helped to support her in-the-moment decisions about food choices.

Ideation Support

The sixth category, *Ideation Support*, consisted of ways to expanded knowledge and cultivated skills that promote healthy behaviors. Participants expressed that heathy foods became "boring," and they needed "ideas" about recipes or how to be "creative" with healthy snacks and meals. Six participants liked trying new healthy foods but continued to cook the same foods because it was difficult to determine which healthy recipes tasted good and were easy to prepare. Although most participants browsed the internet for healthy food recipes, some found the vast amount of information on the internet overwhelming. One participant commented,

> I don't want to spend 30 minutes searching for healthy meals – it would help if I had a knowledgeable person to find healthy meal recipes that are simple and tasty with not too many ingredients and quick to prepare.

Kimberly preferred social media websites like Pinterest or Facebook for ideas and she read working women's blogs to learn about healthy tips or suggestions because, "I like to follow people to see examples of what they are actually eating. See how other women are juggling everything and taking time for themselves." Sharing recipes and tips among friends was a common practice and Divya's husband helped her find new recipes to try. One woman in the study enjoyed shopping at farmer's markets or perusing the produce sections at stores to let the seasonal fruits and vegetables stimulate cooking ideas.

Time Savers

The seventh category, Time Savers, related to techniques to promote efficient use of time when buying and preparing healthy foods. Time was a valuable, albeit limited, resource, which forced participants to be innovative and find various ways to "make time." Six women in the study used online grocery shopping and store pick-up or delivery to save time as Gena commented:

> I shop online…and now I've done it so frequently there's the little favorites tab and I just go through and add, add, add. It's a time saver. I can shop at midnight; it takes 10 minutes, and I can pick up everything when I have a break in the day – it's awesome.

Participants developed a collection of healthy, easy recipes and rotated the recipes to add variety while minimizing the time spent searching for healthy meal ideas. Three participants cooked extra food for "leftovers" to reduce time spent in the kitchen and used specialized kitchen equipment like the "Instant Pot" to decrease cooking time. Buying semi-prepared meals or mail

order meal kits was a time saver for three participants, yet expense and lack of variety were common complaints associated with this approach.

To maximize efficient use of time, participants resorted to "multitasking" or combining physical activities with productive pursuits to promote efficient use of time. Gena incorporated family time with physical activity by walking to pick her child up from school and riding bikes with her boys to get ice cream and groceries. Karen enjoyed the physical exertion of gardening and growing her own vegetables, and several participants walked dogs or used local biking and hiking trails with their family.

Theme 6: Roadblocks: Life and Work

The final theme, *Roadblocks: Life and Work*, encompassed descriptions of barriers to healthy weight-related behaviors and subsequent weight loss or weight maintenance. The participants' experiences were arranged into five categories: *Life Stages, Financial Constraints, Knowledge Barriers, Time Constraints,* and *Environmental, Social, and Psychological Barriers.*

Life Stages

The first category, *Life Stages*, focused on physiologic conditions associated with various stages of life that impeded the ability to lose or maintain a healthy body weight. Pregnancy was a commonly reported cause of weight gain and inability to lose weight. Amanda said, "this is my third baby, so I started off heavier than I wanted to be because I never lost all the weight from the first one." Older women in the study, shared that "menopause," "aging," a "slowing metabolism," or having had a "hysterectomy" caused their shape to change and negatively impacted their ability to effectively manage weight. Other physiologic conditions or processes like "fibromyalgia," "joint problems," or "lack of sleep" generally caused pain or decreased

energy levels and limited participants' physical activity leading to an imbalance between calorie consumption and expenditure.

Financial Constraints

The second category, *Financial Constraints*, constituted monetary barriers or hindrances to weight loss efforts. Financial cost was an important consideration for all women in the study regardless of income level. Ten participants either reported financial stability or did not share financial struggles, however, one participant stated, "I can't afford expensive food, I buy whatever is the cheapest." Despite a sense of financial security for most participants, the women acknowledged that "eating healthy cost more," "sometimes people can't afford healthy food," or "a healthy, affordable, fast-food option does not exist."

When evaluating healthy options or practices, participants considered costs in relation to benefits or other options as part of their decision-making process. For example, Ellen commented, "[Snack Lab] is slightly expensive because it's healthy food, but we found it like the best substitute for fast food for us." Although Linda noted that "eating healthy is expensive, you get more food for your money when you get pizza or fried chicken compared to a salad," she determined the benefits of healthy eating were greater than the financial costs. In contrast, Gena reasoned, "I won't join a gym because I feel like I could do it at home - it's a waste of money to me." In situations where financial cost was a concern, participants developed alternative solutions. Adriane and Gena used money saved on a gym membership to buy equipment for a home gym or outdoor physical activities then saved gas money and time by avoiding the drive to and from the gym.

Knowledge Barriers

The third category, *Knowledge Barriers*, was comprised of obstacles to healthy behaviors originating from knowledge deficits and knowledge acquisition. Participants easily identified "what" they should eat or do to attain an optimal weight, still they recognized a need for information about "how" to make healthy alternatives easy and more enjoyable. Shaelyn summarized by saying:

> I don't want to pay a lot of money to sit in a classroom and listen to someone go on about what you should or shouldn't eat – help me with the solutions…whenever a program creates an environment that makes eating healthy and easy for you, that's what helps me be successful.

Gena valued the benefits of a vegan diet and enjoyed the taste of plant-based meals but remarked, "I just don't know how to cook vegan." Three participants reported being "bored" with raw carrots and apples, yet they did not know how to make a healthy diet enjoyable. Kimberly stated, "I would like more knowledge about being creative with food in a healthy way." Determining ways to revitalize vegetable dishes and add dimension to a healthy diet by incorporating new taste sensations was an important, though missing, aspect of participants' knowledge about healthy food options.

Acquiring new knowledge was problematic for participants because, "there is too much information and advertisements making it hard to navigate through what's healthy." The variety of diets and exercise programs made it difficult to identify the best approach or determine what would work. Before Adriane tried a diet, she spent a lot of time "researching the heck out of it." To address the abundance of conflicting information about foods, diets and exercises available on the internet, participants relied on friends and family, experts, professionals, social media, and blogs for recommendations. Women in this study needed to trust the source of information, and

to know that recommendations had been tested and worked well for other women in similar situations.

Time Constraints

The fourth category, *Time Constraints*, encompassed activities that limited the amount of time participants could dedicate to practicing healthy behaviors. Women in the study recounted dealing with incessant demands of work life and homelife making time constraints a pervasive problem along the weight loss journey. All participants referred to obligations related to work, domestic chores, children, or aging parents that required time commitments. When faced with too much to do and too little time, participants reported eating unhealthy snacks or fast foods because these types of food were quick and easy. As Divya shared, "I don't have time to add one more thing to my list – work, care for my family, cook, clean. So sometimes I just think let me eat whatever is easy – buy a pizza and call it a night." Several participants conveyed the importance of "managing time" or getting their life "organized," but they needed "more control" over their schedules at work and at home to use available time more efficiently.

The COVID-19 pandemic and subsequent national quarantine in the United States coincided with this study. Four participants entered the study during the quarantine and confirmed a shift from working in an office to working from home, which afforded greater flexibility and control over their schedules thereby freeing up time for healthy weight-related activities. For instance, Ellen stated:

> So, when the quarantine first started, it was nice because I had more control of my schedule and I could get a workout in [at home] between meetings without having to factor in drive time to the gym and showering to get back to work.

Another participant indicated that working from home reduced the unexpected late meetings in the office that often derailed her plans to exercise after work. The quarantine eliminated time needed for commuting to and from work and children's activities that were cancelled. Adriane found more time for regular walks and Gena spent the extra time on family bike rides.

The daily pressures and time limitations precipitated fatigue and the need for additional time to relax. When women in the study found an hour or two at the end of the day for themselves, they wanted to use it watching television, perusing social media, or sleeping. As Kimberly shared, "sometimes after work I just sit and look at Pinterest or Facebook, so I don't have to think about anything. Sometimes, I'm exhausted and go straight to bed." Tami agreed by saying, "part of it I think is brain power because there's even times when I feel like I have the time, but I just don't have the energy to focus…I just want to veg out" Incorporating personal time to relax and decompress from the day was important to all working women in the study.

Environmental, Social, and Psychological Barriers

In the fifth category, *Environmental, Social, and Psychological Barriers*, participants reflected on factors related to physical surroundings, social interactions, and psychological processes that obstructed weight loss or maintenance behaviors. When recounting barriers, participants presented physical barriers within the environment that were distinct from the interconnected social and psychological barriers.

Environmental barriers. All 11 participants discussed barriers in the work environment ranging from food options to workplace designs, and ways of working that interfered with healthy weight-related behaviors. Seven participants who worked in a large corporate office environment with cafés, coffee bars, and vending machines commented on food options in the

workplace. While a few participants noticed recent improvements in corporate dining, Ellen commented, “there's a grill station and a salad bar, but it's not great. And like even if I get vegetables they're slathered in butter and everything's fried. So, it's just not the easiest to eat healthy there.” Vending machine options included foods like “Snickers,” but lacked “fresh fruits.” And the coffee bars sold “sugary baked goods.” In the corporate environment, unhealthy foods were plentiful and sometimes the only option when working late and the cafés were closed.

Workplace or office design had direct and indirect impacts on healthy weight-related behaviors. For instance, Amanda liked to keep snacks close to her desk, but she only had access to non-perishable foods like chips and cookies because the breakroom refrigerators were too far away to keep sliced fruits and vegetables handy. A few participants reported distractions at work related to office design features that resulted in lost productivity and working longer hours. After transitioning from walled cubicles to an open desk arrangement Karen noted, “there is no privacy, you can hear everything that everyone says all day. I’m very sensitive to noises.” Work distractions interfered with participants getting their work done during normal working hours, which indirectly cut into personal time for exercise and preparing healthy meals at home. Five participants worked through lunch, stayed late to get work done, or took work home because there was too much work to do and too many distractions throughout the day.

All participants shared specific ways of working or aspects of their work that had a negative effect on healthy weight-related behaviors. Ten participants worked in sedentary or desk jobs. Although some women in the study walked to different buildings for meetings or parked at the end of the parking lot to get more exercise, they spent most of the day sitting. Seven participants found the work environment to be stressful. The stress stemmed from “back-to-back meetings,” “not enough time to get everything done,” and “erratic schedules.”

According to Shaelyn, “my work schedule and expectations of myself, my boss, and my team are demanding.” Stress associated with the work environment resulted in “stress eating” and “skipping lunch,” and “not having the time or energy to work out.”

Extensive work-related travel was problematic for four participants. Gena associated work travel with “being stuck in a hotel or conference center all day with buffets of food, and late-night dinners and wine.” Ellen found it “very hard to eat healthy” when traveling for work because her schedule was unpredictable, and she was unfamiliar with where to go for healthier food options. Karen enjoyed traveling for work, however, she viewed travel as an opportunity to explore new foods and her sense of culinary adventure did not always equate to healthy choices.

In participants’ personal lives, the main environmental barrier was the ubiquitous nature of unhealthy fast-food restaurants and the lack of convenient, affordable, healthy alternatives. Eight participants reported eating restaurant meals for lunch or dinner at least twice a week and as much as five times a week. When pressed for time, participants found it easy to pick up pizza or burgers because fast-food restaurants were conveniently located and offered a quick mealtime solution. Two participants mentioned “Snack Lab” a local restaurant/health food store dedicated to healthy take-out foods, semi-prepared meals, snacks, and groceries. Amanda declared, “oh my gosh, [Snack Lab] does like vegetable-based meals with grains and rice and oats, and it’s just delicious, but there are only two locations.” After discussing the limitations on access to healthy fast-foods and the difficulty in preparing healthy meals for the family Shaelyn concluded, “if healthy eating was quick and convenient and I didn’t have to think about it - it would be life changing.”

Social and psychological barriers. Social and psychological barriers were closely related in working women’s experiences. Perceived gender roles at home and a lack of social

permission at work influenced interpersonal dynamics and emotions that undermined participants' efforts to practice healthy weight-related behaviors.

Despite advancements in gender equality, participants continued to struggle with perceived societal expectations that influenced their own self-value and family dynamics. When discussing the stress women place on themselves, Shaelyn expounded on the different responsibilities of men and women by saying, "men have a breadwinner mindset, but women are more emotionally involved with everything…they strategically lookout for the family…it's way more stressful."

The man's role as a breadwinner was viewed as an integral part of work and family combined, whereas participants viewed women as having independent, time-consuming, responsibilities for their multiple roles. According to Amanda, "women place self-value on being a good mom, wife, and employee." The prevailing perceptions of traditional female roles combined with the responsibilities of working full-time led to emotional responses that compromised women's efforts to focus on their own health as Tami relayed:

> Men don't focus on all the extra things that relate to family needs because they know we will take care of it. And we don't do anything to change their behaviors or expectations, we just do it and literally put this pressure on ourselves to do it all…It's like women are always thinking of what we have to do for our family, it's constant. We simply put ourselves last…Anymore, I'm always the responsible one. At work, I'm responsible for everyone that works for me. At home, I'm responsible for cooking, cleaning, caring for the kids…Then we have this overbearing feeling of guilt when we decide to take some time for ourselves. I've got to get over the guilt and dedicate some time for me. Being responsible for everyone but myself is very taxing…It's a battle we can't win.

Viewing themselves as “caregivers,” participants were inclined to take on more responsibilities to provide for the individual needs of each family member. When trying to eat healthier, five participants prepared different foods for the same meal because the spouse or children had different preferences. For instance, when making spaghetti sauce, Linda served it over riced cauliflower for herself and pasta for her husband prompting her to share, “I would probably eat better if I wasn’t cooking different foods for my husband…it’s easier to give into what he wants for dinner.” Divya faced similar barriers as indicated by her remark, “the biggest problem for me is the food. I have to cook for my family, but I cannot eat all the things I cook for them even though I love [those foods]. That is a big challenge.”

Apart from the physical tasks associated with perceived gender roles, emotions emerged in relation to homelife experiences that served as psychological barriers to effective weight management behaviors. Ellen expressed her struggles with the emotional toll of striving to fulfill the expectations of being a wife or mother:

> Now when I cook a home cooked dinner, if my husband doesn't like it, I feel like it's my fault. And it's not because he could have participated in the preparation. I subconsciously feel like it's my fault if the meal doesn't go over well. And so, it creates a lot of physical stress of doing the shopping, bringing it home, doing the preparation. But also, the emotional stress of feeling like your cooking is somehow a reflection on your dedication as a wife or a mother.

The self-imposed emotional stress of preparing a praise-worthy meal made Ellen cook foods she knew her husband would like rather than foods to enhance her weight loss efforts. Four other participants limited physical activity after experiencing guilt for choosing to exercise instead of spending the extra time with their children. Tami shared, “I started feeling guilty about

leaving [my son at the gym childcare facility] while I worked out when he had been at daycare all day. We eventually cancelled that gym membership." Kimberly used to "live at the gym before I had kids," but she did not exercise as much anymore because "I feel guilty I'm missing out on time with my husband or boys." To compound the problem, a sense of being overwhelmed or exhausted from daily demands made it easier for participants to give in to unhealthy food choices and sedentary behaviors.

In the workplace, participants felt they needed to demonstrate the ability to excel as an employee, which translated to "working late," "working through lunch," and "taking work home." According to Linda, "men just take one thing at a time – I'm at work or I'm at home. They divide up their time better. Women are constantly stressing and trying to prove our place and we don't think about ourselves enough."

Three participants alluded to a need for social permission in the workplace to focus on their own health. Kimberly felt guilty for going to the gym during the workday because it would require her co-workers to arrange meetings around her exercise schedule. One participant considered asking her boss permission for extra time to work out during lunch but worried she would be judged for "slacking" or not putting in the hours like her colleagues.

Two participants in their 50's provided an alternative perspective on social permission. While the mature women reported past feelings of guilt from social dynamics in workplace, growth and confidence from personal experiences and witnessing positive changes in workplace over time empowered them to let go of psychological barriers and commit to healthy behaviors. These two women no longer hesitate to block work calendars or take time to go to the gym during work hours.

Working in a leadership role, Tami conveyed permission by promoting a culture of health in the office. She encouraged her employees to take advantage of nearby walking trails during the workday and participated in yoga breaks with her team. The act of granting permission removed an element of stress associated with the self-imposed demands participants placed on themselves to exceed social expectations. In response to Linda's manager saying, 'I don't care when you work, just get your work done,' Linda felt relief in knowing she had more control over managing her personal resources to get the work done and greater flexibility to focus on herself.

Unifying Theme: Weight Management as a Lifestyle

Participants consistently indicated that effective weight management required more than a diet or exercise program. Although participants did not concisely articulate a weight management solution, their narratives conveyed an interconnected network of influential factors that dynamically influenced weight-related behaviors on a daily basis. The amalgamation of personal views, experiences, interpersonal and environmental interactions, emotional responses, and how effectively women managed these influences ultimately determined participants' ability to control their weight and illustrated *Weight Management as a Lifestyle*.

Summary

The purpose of this qualitative descriptive study was to describe overweight working women's a) perceptions about body weight, and perceptions about and experiences with weight management, specifically b) weight gain, c) weight loss, and d) weight maintenance. Through information gleaned from interviews with overweight working women, the six research questions for this study were answered and summarized as follows.

RQ1: How do overweight, working women describe body weight?

Eleven overweight working women gave their perceptions of body weight in relation to themselves and others through Theme 1, *Beyond a Number on the Scale*. Consistently, participants indicated that there was more to a person than body weight and they conveyed compassion for people struggling to control weight. While they were reluctant to "judge" others and they refrained from using adjectives to describe overweight and obese people, participants freely characterized under and normal weight individuals as "twigs" or "stick thin." Working women in the study expressed a greater level of comfort being around other overweight individuals as they were concerned about being unfavorably compared to normal weight women and inadvertently offending women with obesity. Despite a wide range of feelings toward personal body weight from hate to acceptance, participants used inoffensive descriptors like "curvy" and "squishy" to depict how they looked or felt and disclosed that their own weight was "a work in progress."

RQ2: What are overweight, working women's experiences of weight management?

Theme 2, *A Matter of Time Effort and Commitment*, revealed views on weight management or control through experiences with effort and weight control strategies. Participants identified weight management as efforts used to reduce excess weight or to maintain an individually determined ideal body weight. All participants reported that having ample time was critical to controlling weight and the process of weight loss or maintenance was difficult. Several participants expressed that effective weight management was harder for women than men, which precipitated feelings of frustration or a sense of failure when comparing the magnitude of effort in relation to the outcomes for male friends and family members. Identifying sustainable weight loss or maintenance behaviors through a persistent and iterative process of

testing and adopting effective tactics was important to participants and supported their notion that weight management was a lifestyle, rather than just a task.

RQ3: What factors contribute to weight gain according to overweight, working women?

Unhealthy behaviors directly contributed to weight gain and social, environmental, and psychological factors negatively influenced weight-related behaviors as outlined in Theme 3, *Calories Consumed versus Calories Burned*. Participants identified that a sedentary lifestyle and unhealthy eating habits resulted in weight gain. Unhealthy behaviors like sitting at a desk all day and consuming too much food high in fat, sugar, or carbohydrates were to blame for excess weight. Oftentimes, the deleterious behaviors were fostered by exposures to environmental and psychosocial factors. Participants indicated that unhealthy food was integral to social gatherings and the temporal relationship between food and fellowship was associated with pleasurable emotions that made it easier for women to indulge in unhealthy foods. Women in the study also turned to food for a source of "comfort" during stressful situations. When balancing competing demands of work and family generated emotional triggers like stress, fatigue, and feelings of being overwhelmed, efforts to sustain dietary and physical activity behaviors that facilitated an optimal weight were threatened. Culture, another commonly cited influential factor, reflects social customs that are interwoven within the environment. Participants stated that certain foods and a lack of physical activity associated with "Southern," "Hispanic," and "Indian" cultures had a negative effect on body weight.

RQ4: What factors promote weight maintenance and loss in overweight, working women?

Theme 4, *Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle*, illuminated working women's process of building a healthy lifestyle by describing factors that facilitated attainment of optimal weight. Intrinsic and extrinsic motivations served as a driving

force for weight-related behaviors. Participants' desires to "maintain quality of life," "look professional," "buy stylish clothes," and "always be there for their kids," provided a foundation for establishing a healthy mindset, prioritizing one's self, and building new habits that supported weight goals. Participants reported effective weight management when they made overall health and well-being a priority and maintained a mindful approach to decision making that fostered commitment and sustainable healthy habit formation. Making new habits a "way of life" was critical to weight management success. Environmental, and psychosocial influences were instrumental to participants' efforts and to the process of building a healthy lifestyle. Family and friends offered emotional support and encouragement along the journey, shared in the experience by being an exercise partner, and served as a source of information for weight loss tactics. Husbands or significant others provided tangible support by helping with childcare responsibilities and household chores to afford women extra time for weight loss or maintenance efforts.

RQ5: What weight maintenance and loss methods are preferred by overweight, working women?

Participants revealed numerous weight loss or control methods that coalesced into categorical strategies in Theme 5, *Programs, Interventions, Techniques, and Support*. Table 4 provides a summary of the methods delineated by preference. Participants found commercial programs beneficial to start the weight loss process, but programs were not sustainable due to strict dietary limitations, costs, and side effects. One woman used medically supervised interventions, including bariatric surgery, with reported success and satisfaction. Food and nutrition techniques like avoiding fried foods, overly processed foods, and sugary sodas combined with eating balanced meals and more fruits and vegetables were useful to participants.

Although meal planning and prepping healthy snacks were important, these activities were limited by time constraints. Fad diets and cleanses were not beneficial. Women in the study preferred lower impact exercises and recreational activities like walking, cycling, and hiking. Rigid or time-intensive training routines did not fit into participants' busy schedules. Portion control, exercising with a partner and sharing recipes were beneficial techniques to promote accountability and provide ideation and decision support. Participants found calorie counting, weighing food, and using the internet to research healthy diets time consuming. Time saving techniques were very important, specifically online grocery shopping, cooking leftovers, and using cooking equipment to expedite meal preparation.

RQ6: What are the barriers to weight maintenance and loss for overweight, working women?

Theme 6, *Roadblocks: Life and Work*, unveiled participants' perceived barriers to weight loss and control. Physiologic changes associated with pregnancy and menopause negatively impacted women's ability to effectively manage weight. Other conditions that caused joint pain or fatigue like fibromyalgia and insomnia interfered with exercise. Despite financial security for most participants, costs considerations hindered behaviors related to healthy food choices and gym memberships. Knowledge deficits about preparing delicious healthy foods and the abundance of conflicting information that obstructed or slowed knowledge acquisition about recipes, diets, and weight loss programs made it difficult for participants to determine what was healthy, effective, and sustainable. Instead, participants relied on experts, social networks, and working women's blogs as a trusted source of weight-related information. Time constraints stemming from competing family and work demands led to the need for extra time to decompress at the end of the day and served as a significant barrier to meal planning, cooking,

and exercising. In the workplace, environmental barriers like café food options, office designs and ways of working directly and indirectly impeded women's weight loss and maintenance efforts. The pervasive presence of fast-food restaurants and a lack of healthy, affordable, fast-food alternatives limited participants' options for a quick meal solution. Social barriers related to perceived gender roles at home and a lack social permission at work to focus on one's self led to emotional responses that interfered with effective weight management behaviors.

Chapter 5: Discussion, Limitations, and Implications

In this chapter a discussion of the findings in relation to relevant research on body weight and weight management, a review of limitations associated with this study, and implications for education, research, practice, and policy are presented.

Obesity is an unrelenting public health problem in the United States and women are inordinately impacted. Working women specifically have experienced increasing obesity prevalence rates since 2005 (Jackson, Wee, Hurtado & Kawachi, 2016). Given the challenges of treating and reversing obesity, obesity prevention may hold promise for the future. However, to build effective interventions aimed at obesity prevention, more information is needed to understand the various factors that influence weight-related behaviors in clearly defined populations such as employed women (Chan & Woo, 2010; Garip & Yardley, 2011; Yanovski & Yanovski, 2018). A segment of women with insights into weight management and obesity prevention are overweight women who have avoided obesity or who have been obese and are now working to prevent the regain of weight (Garip & Yardley, 2011).

The purpose of this qualitative descriptive study was to examine perceptions and experiences associated with body weight, weight gain, weight loss, and weight maintenance from the perspective of overweight working women to answer the following research questions:

RQ1: How do overweight, working women describe body weight?

RQ2: What are overweight, working women's experiences with weight management?

RQ3: What factors contribute to weight gain according to overweight, working women?

RQ4: What factors promote weight maintenance and loss in overweight, working women?

RQ5: What weight maintenance and loss methods are preferred by overweight, working women?

RQ6: What are the barriers to weight maintenance and loss for overweight, working women?

To answer the research questions, eleven women who met the eligibility criteria were recruited from a south-central region of the United States. Seven participants (64%) worked for a large corporate employer and four others (36%) worked in healthcare, food service, and non-profit industries. Data were collected through individual semi-structured interviews and the investigator performed content analysis to develop themes.

Discussion of Findings

Overweight working women consistently described an overall experience of *Weight Management as a Lifestyle*, which was depicted through six themes: *Beyond a Number on the Scale; A Matter of Time, Effort, and Commitment; Calories Consumed Versus Calories Burned; Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle; Programs, Interventions, Techniques and Support;* and *Roadblocks: Life and Work*. Twenty-two categories illuminated various aspects of each theme. A discussion of each theme and corresponding categories follows.

Theme 1: Beyond a Number on the Scale

In Theme 1, *Beyond a Number on the Scale*, participants provided insights about body weight based on *Views of Self* and *Views of Others*.

Views of self. Women in this study, all of whom were white except one Asian participant, consistently revealed acceptance of and a desire for a smaller body size and stated weight loss would enhance their aesthetics. This finding aligned with a study of white women who reported that overweight was unattractive and associated slimness with happiness (Shoneye et al., 2011).

All participants confirmed that losing weight would promote health and make them feel better, reinforcing findings from other studies involving women with overweight and obesity from various racial and ethnic backgrounds (Agne et al., 2012; Befort et al., 2008; Shoneye et al., 2011). Compared to women with obesity who described themselves using derogatory terms like "cow" and "whale" and associated their body weight with feelings of depression (Chugh et al., 2013), overweight working women in this study used less disparaging descriptors like "apple-shaped" and "curvy" to illustrate their body and generally felt okay with their weight or viewed it as a work in progress. Participants alluded to the constant challenges of weight fluctuation, still they did not disclose feelings of despair or depression due to their weight.

One explanation for the difference in findings between women with overweight and obesity is the complex relationships between self-efficacy, depression, emotional eating, and BMI. Researchers found that higher depressive symptoms were positively correlated with emotional eating and greater BMI, while self-efficacy was negatively correlated with depressive symptoms and emotional eating, and lower self-efficacy was a significant predictor of obesity (Konttinen, Silventoinen, Sarlio-Lahteenkorva, Mannisto & Haukkala, 2010). Self-efficacy of the participants was not measured in this study, still all noted prior success with weight loss and expressed confidence in their ability to lose weight. The interconnected relationships between self-efficacy, depressive symptoms, emotional eating, and BMI will be important to consider when designing future programs and interventions aimed at obesity prevention. Programmatic features that support mental health during the weight management journey may be beneficial to achieving and maintaining an optimal weight.

Views of others. Several participants agreed that people with obesity experienced struggles and missed opportunities in life and at work. This finding is consistent with research

that identified a greater incidence of bullying in the workplace, hiring biases based on weight, and lower wages for women with overweight and obesity (Puhl & King, 2013). Additional studies documented challenges associated with excess weight like disability and diminished quality of life (Chu et al., 2018) further validating participants' perceptions.

All women commented that they were not comfortable judging others based on weight and they refrained from using descriptors to illustrate other overweight or obese people. However, participants used labels like "stick thin" and "twigs" to describe underweight and normal weight individuals. The disconnect between participants avoiding the use of terms to describe others who are overweight or obese yet using negative terms to describe underweight or normal weight individuals may stem from empathetic pathways.

Cameron (2018) referred to experience sharing and compassion as motivators of empathy. Overweight women easily related to others trying to control weight – they had shared experiences. These similar experiences evoked compassion exhibited in empathetic behaviors toward other individuals with overweight and obesity. Because overweight women desired thinness, the use of labels for underweight and normal weight individuals were not viewed as judgmental. One participant who accidently hurt a co-worker's feelings by calling her "Skinny-Minnie," confirmed that she did not equate comments about being thin as offensive. Though this study was not designed to explore weight discrimination and bias, participants' narratives substantiated the need to address these issues across BMI categories.

Additional research indicates weight bias is problematic in healthcare and negatively influences the delivery of care for overweight and obese individuals by causing stress that leads to care avoidance and poor adherence to treatment recommendations (Dieterich & Demirci, 2020; Phelan et al., 2015). Understanding motivational pathways to empathetic responses and

incorporating strategies to address weight-related attitudes and stereotypes into weight management interventions can help diminish the stigma and bias associated with extreme weight variations thereby supporting women who seek help for their weight without the fear of being judged.

Theme 2: A Matter of Time, Effort, and Commitment

Describing overweight working women's experiences with weight management, namely weight gain, weight loss and weight maintenance was another aim of this study that was addressed through the remaining five themes. In Theme 2, *A Matter of Time, Effort, and Commitment*, participants provided information about their experiences with weight management in two categories, *Experiences with Effort* and *Experiences with Strategies.*

Experiences with effort. Women in this study highlighted the significant amount of time and work required to lose and maintain weight. Working women had considerable demands on their time and reported balancing the needs of family and work while allocating a portion of their life to focus on their own health. This finding is consistent with reports from other overweight adults who shared their weight management experiences regardless of employment status (Robertson, Mullan & Todd, 2014). While women acknowledged the effects of competing demands on perceived effort associated with weight management, researchers note that biological mechanisms make it increasingly difficult to lose and maintain weight once a woman becomes obese (Evert & Franz, 2017). The combined effects of work-life demands and biological influences on weight management efforts bolsters the support for providing working women obesity prevention interventions.

Experiences with strategies. Throughout the narratives, women consistently spoke of creating a healthy lifestyle that supported effective weight control. This aligns with the sentiment

of other women who had lost and maintained weight loss (McKee, Ntoumanis, & Smith, 2013). In this study, the process of curating a healthy lifestyle relied on commitment to attaining a healthy weight and adoption of an iterative mindset that encouraged creative problem solving, persistence in testing potential solutions, and an ability to determine the effectiveness of solutions through reflection then incorporate those solutions into their life.

There is a lack of research on iterative mindset and weight loss. Researchers in the field of education, however, opined that an iterative practice mindset grounded in creativity and reflexivity is critical to developing autonomous learners or students who take ownership of their learning experiences and adapt to changing environments to become lifelong thinkers and problem solvers (Henriksen, Cain, & Mishra, 2018). Although the iterative practice mindset was attributed to a way of teaching and developing an effective learning environment, the approach parallels the strategy overweight working women deployed throughout their self-taught journey to a healthy lifestyle. According to Henriksen and colleagues (2018), educators encouraged students to think creatively, to take risks without the fear of failure, and to iterate and evolve class projects throughout the semester while reflecting on cumulative knowledge. This process facilitated exploration and educational growth with a focus on the process of learning and minimized the emphasis on a pass or fail outcome.

Participants in this study approached weight management in a similar fashion. Although some women shared preferences for certain weight loss solutions, no two women adopted the exact same set of weight loss methods. The participants conveyed individualized approaches to weight management, yet the iterative process used to learn about weight management, adapt weight-related behaviors, and evolve their healthy lifestyle was consistent for all participants. They took ownership of their journey and concentrated on incremental weight loss process

improvements rather than an overall weight loss goal that could, if not successful, lead to a sense of failure and abandonment of weight loss efforts. Research is needed to explore the critical elements of an iterative practice mindset specific to weight loss and gain an understanding of the effects of an iterative mindset on weight control.

Theme 3: Calories Consumed versus Calories Burned

In Theme 3, *Calories Consumed versus Calories Burned*, participants revealed factors that contributed to weight gain. Working women expounded on *Weight Gain Behaviors* and *Negative Social, Environmental, and Psychological Influences* that caused weight gain and made weight maintenance difficult.

Weight gain behaviors. Information obtained from participants about perceived behaviors that resulted in weight gain was revealed in *Weight Gain Behaviors*. Like findings from other research involving women with overweight and obesity trying to lose or maintain weight (Robertson, Mullan, & Todd, 2014), overweight working women were knowledgeable about basic behaviors associated with weight gain. Participants discussed activities that equated to decreased energy expenditures and increased consumption of calories, specifically sedentary behaviors and eating larger portions of calorie-dense foods. According to the women in this study, their inability to effectively manage weight was not due to a lack of knowledge about contributing behaviors, rather it was a matter of overcoming the underlying influences that caused the unhealthy weight-related behaviors.

Negative social, environmental, and psychological influences. The negative influences of social, environmental, and psychological factors were conveyed as women discussed the relationships between food and fellowship, emotional triggers, and culture. Feelings of comfort and relaxation were commonly associated with socializing and sharing meals with family,

friends, and co-workers. This finding aligned with outcomes of another study involving overweight and obese adults who found it difficult to practice weight loss behaviors when socializing because social gatherings were viewed as a time to have fun or relax and enjoy the experience rather than follow a diet (Robertson, Mullan, & Todd, 2014).

Although working women focused on the experiential aspect of dining with family and friends, the phenomenon referred to as the social facilitation of eating is quite complex. In a scoping review, Herman (2015) cited numerous factors that accounted for consumption of food in social settings, including the number of diners, relationships or familiarity between eating companions, duration of the meal, disinhibition and excitation in group meal settings, and whether all diners in the group consumed food. Despite the lack of a conclusive explanation for the social facilitation of eating, the body of evidence supports participants' overall perception that social situations encourage greater consumption of food whether it is through disinhibition and relaxation or other mechanisms (Herman, 2015).

Similarly, when overweight working women were stressed, overwhelmed, or fatigued from balancing the demands of work and homelife, unhealthy foods provided a sense of comfort that helped to mitigate the undesirable emotions. Park and Sung (2020) reported similar findings in a study of Korean workers who consumed "comfort foods" in response to stress as a coping mechanism. Another researcher studying the relationship between eating and the physiological response to stress found stress activates hormones that increase glucocorticoid and insulin levels stimulating a desire for energy rich foods (Dallman, 2010). In turn, consumption of the desired food diminishes release of corticotropin releasing factor in the amygdala and stimulates pleasure centers in the brain thereby reducing the effects of stress. Of importance for participants is the

need for programming to help women identify and address the causes of stress while offering stress management solutions to help mitigate the underlying influence of stress on weight.

Cultural influences on preferences for physical activity and food options was another important consideration for participants in this study. Working women noted an acceptance of a sedentary lifestyle in the south and expressed preferences for comfort foods specific to personally identifiable cultures. According to Larson and Story (2009), cultural norms and values are an important part of the environment that shape weight-related behaviors. As humans interact with the cultural environment, however, both individuals and the culture evolve over time. The evolutionary process became evident in this study as women recognized the cultural factors that contributed to weight gain and reconciled the need to change those behaviors through behavior modification. When behavior modifications are sustained, the new behaviors are passed down to the next generation through the enculturation process (Larson & Story, 2009) or what participants referred to as "setting a good example for my kids." Including family members in weight management programs is an important consideration as it not only serves as a support structure for women, but it also facilitates cultural change by establishing new dietary norms within the family that can be passed on to the next generation.

Theme 4: Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle

In Theme 4, *Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle,* participants presented factors that promote weight loss and maintenance. The factors were grouped into three categories: *Motivations; Mindset, Prioritization, and Habit Formation;* and *Positive Social*, *Environmental, and Psychological Influences*

Motivations. In the category, *Motivations*, women described factors that inspire healthy weight-related behaviors such as overall desire for health, longevity, looking good or

professional, and being able to buy fashionable clothes. Maintaining health was a leading motivator among all participants and factors related to aesthetics was similarly important to most working women. Interestingly, age was not a determinant of whether women were more concerned about looks or health. This finding contrasted with a study that compared motivations for weight loss in younger (aged 18-35 years) and older (aged 36-50 years) adults, where younger adults were more likely to be motivated by appearances and health was the primary motivator for older adults (LaRose, Leahey, Hill, & Wing, 2012).

Employment may be a differentiating factor between the participants of the two studies. While LaRose and colleagues (2012) did not specify employment status, women in this study were all employed in primarily professional roles and several participants alluded to discriminatory practices against women with overweight and obesity in the workforce. Personal experiences or beliefs about how women with overweight and obesity are treated in the workplace may have a bearing on working women's motivation to look good or professional regardless of age.

Mindset, prioritization, and habit formation. The process of preparing a foundation for habit formation was important to weight management success for overweight working women. Once motivated to change eating behaviors, the journey to a healthy lifestyle involved adoption of a mindfulness mentality, prioritizing one's self and healthy behaviors, and committing to a new behavior long enough to develop a habit.

Participants stressed the value of being mindful of choices in the moment, a mindset consistent with other research that pointed to the worthiness of self-monitoring or deliberately paying attention to decisions and behaviors as a means of maintaining an optimal weight (McKee et al., 2013; Metzgar et al., 2015). This finding is supported by Kahneman's (2003) research on

heuristics in human decision-making, which indicated that people fall back on mental rules established through an evolutionary process to expedite the decision-making process. Heuristics, however, may lead to suboptimal choices that do not align with the intended goal of weight control. Participants' descriptions of being fully invested "in the moment" when making decisions was a mechanism for overcoming the heuristic decision-making process. Creating weight management programs that help women understand how decisions can be hijacked by mental rules or heuristics and can lead to unhealthy decisions can reinforce the mindfulness approach and reduce the sense of failure, guilt, and self-blame engendered through unhealthy personal decisions.

Self-prioritization established a mental framework for dedicating the personal time needed to build long-term healthy habits, a requisite for creating a healthy lifestyle. Women in this study described putting themselves first as a strategy for coping with competing demands of work and family while iteratively practicing behaviors and creating new habits. Comparatively, researchers found that individuals who were not successful in controlling weight used lifestyle interruptions or competing demands as an excuse to justify unhealthy behaviors rather than taking personal action to proactively manage interruptions (Chambers & Swanson, 2012). Acknowledging that personal health and weight control are of equivalent importance to family and work obligations provides women a frame of reference for ranking and engaging in daily activities that support their priorities. Programmatic features designed to reinforce self-prioritization during the weight management journey can help working women reconcile the struggles of competing demands.

Overweight working women recognized the path from behavior iteration to a healthy lifestyle required time to practice healthy behaviors to the point of automaticity. The idea that

practiced behaviors become habits and practiced habits become a lifestyle over time aligns with research on the psychology of habit formation (Gardner, Lally, & Wardle, 2012). Although there is significant variation based on the type of behavior, a behavior practiced daily becomes automatic or habitual in 66 days on average (Lally, van Jaarsveld Potts, & Wardle, 2011).

The iterative mindset strategy, previously discussed, combined with mindfulness, self-prioritization, and habit formation strategies work synergistically to support the commitment needed to practice and build a new healthy lifestyle. While iteration minimizes the shame of failure and encourages a test and learn approach to weight management, mindfulness brings one's conscious awareness to the present to improve weight-related decisions, and self-prioritization diminishes the internal struggles of competing demands. Together these methods used by overweight working women to manage weight and prevent obesity create a mentality that helps sustain new behaviors until healthy habits are developed. Further, psychologically preparing women for the iteration to automaticity journey is critical to developing programs that effectively support weight management in working women.

Positive social, environmental, and psychological influences. While psychological preparation primes women for healthy weight-related behaviors, an ecosystem of positive support structures facilitates and enhances the transition to a healthier lifestyle. Rather than drawing a distinction between the sources of positive influences, women in this study described interactions with people and how actions of people made their environment psychologically supportive and conducive to healthy behaviors. Participants acknowledged the importance of social and environmental factors that served as positive emotional, informational, and tangible support structures throughout the weight management process.

Like other women with overweight and obesity, (Metzgar et al., 2014; Perry, Ciciurkaite, Brady, & Garcia, 2016), participants in the current study reported that family and friends offered emotional encouragement, positive reinforcement, and a source of information from which to model healthier behaviors. Women noted that the tangible support from spouses or domestic partners who shared household and family responsibilities helped alleviate time constraints, a barrier to weight loss activities reported by other women (Welch, McNaughton, Hunter, Hume, & Crawford, 2009). Although working women focused on the experiential aspects of positive support structures, research validates their perceived association between support and weight management.

Findings from this current study have implications for the design of weight management programs. Given the importance of support structures rooted in social interactions, a dyadic or family-based approach that includes education on supportive family dynamics may be beneficial for working women and their domestic partner (Gorin et al., 2019). Virtual support groups within digital weight management programs also can provide a milieu where family, friends, or similarly situated women can share information and experiences about the weight management journey.

Theme 5: Programs, Interventions, Techniques and Support

Theme 5, *Programs, Interventions, Techniques and Support*, answered RQ5 by outlining preferred methods of weight control and supported the aim of describing overweight working women's perceptions of and experiences with weight management. The participants delineated methods based on seven categories: *Commercial Programs, Medically Supervised Programs and Interventions, Food and Nutrition Techniques, Physical Activity Techniques, Accountability and Decision Support, Ideation Support,* and *Time Savers.*

Commercial programs. Each participant reported use of at least one commercial program. In general, working women found commercial programs useful to "jump start" weight loss, noting program effectiveness was dependent on adherence. In many cases, working women reported they could not sustain a program over time due to dietary restrictions or adverse responses to food limitations. This finding mirrored outcomes from a systematic review of commercial weight management programs that showed significant variability in adherence and effectiveness of programs (Gundzune et al., 2015).

An important aspect of commercial weight management programs was the knowledge women gained about various skills that support an optimal weight. Despite the lack of long-term adherence to programs, women adopted learnings about portion control and mindfulness into their daily lives. This cumulative knowledge about healthy techniques served to enhance the participants healthy lifestyle through the iterative process of testing, learning, and embracing what worked best for the individual. Future consideration for weight management programs should include providing women the resources to explore different weight-related skills and behaviors while supporting an iterative approach. By moving away from programs designed around eating and exercise rules, it could liberate women to take ownership of the weight control process, minimize the sense of guilt when rules are not followed, and improve program adherence.

Medically supervised programs and interventions. One participant completed a medically supervised program twice, worked with a dietitian for nutritional counseling, and underwent bariatric surgery prior to joining this study. Like the commercial programs, the participant had inconsistent success with the medically supervised weight management program

although being accountable to a healthcare professional positively influenced her adherence to and completion of the program.

Evidence from a meta-analysis indicated that nutritional counseling for weight management was associated with modest weight loss that diminished with time (Dansinger, Tatsioni, Wong, Chung, & Balk, 2007). The participant in the current study reported a similar experience and added that the diet plan and information provided by the dietitian was useful, but it did not help her permanently change behaviors. Following bariatric surgery, the participant reported weight recidivism consistent with findings from other research on weight regain post-bariatric surgery (Cooper et al., 2015). She was, however, satisfied with the surgical result and was grateful for the medical support when other programs and interventions did not produce desired effects. Although only one woman in this study participated in medically supervised interventions, her experience points to the need for weight-management support from healthcare professionals to address recalcitrant weight gain.

Food and nutrition techniques. Most overweight working women acknowledged foods high in fat and carbohydrates contributed to weight gain and tried to limit or avoid these foods. Further, participants tried to eat smaller meals or reduce calories through portion control. Many of these nutritional techniques were acquired through education about weight control and interactions with commercial diets or weight management programs. The nutritional techniques used by participants aligned with dietary behaviors found to be effective for weight loss in a systematic review (Kirk, Penney, McHugh, & Sharma, 2011).

A significant finding of this study was the considerable variation in dietary techniques women chose to try and the effects these changes had on weight, perceived responses like fatigue or food cravings, and duration of adherence. Food preferences and choices were very

individualized among the 11 participants, which suggests that a program designed around a specific, restrictive, diet may be self-limiting given women's preference to iteratively test different dietary techniques and adopt what worked for them individually. Future consideration should be given to the importance of personalization, lifestyle variations, and a preference for iteration when designing the dietary component of weight management programs for working women.

Physical activity techniques. The type and intensity of physical activities participants engaged in were individualized based on personal preferences and included running, aerobics classes, tennis, weightlifting, and cycling. Recreational activities like dancing, gardening, and hiking were popular among working women, a finding echoed by other overweight women (Ochieng, 2011). At work, participants enjoyed walking or taking yoga breaks with co-workers. In a study of workers from Australia, researchers found that women were more likely than men to participate in workplace walking and yoga groups (Blackford, Jancey, Howat, Ledger, & Lee, 2013). Given the importance of personal preferences for different types of activities and exercise partners or groups among women, workplace weight management programs that support the formation of affinity groups would allow working women with common exercise interests to connect and coordinate group activities that support one another's weight management goals.

Accountability and decision support. Establishing support mechanisms that made participants answerable to their weight management intentions and helped with in-the-moment decision making were important to working women. Participants favored having an accountability partner or person who would join them in eating healthy foods and exercising. Alternatively, engaging with a trainer, coach, or healthcare professional was also reported as a beneficial accountability technique.

The relationship and level of accountability, however, varied between family or friends and professionals. Researchers have shown that the behaviors of an intimate partner can have positive and negative effects on an individual's weight loss goals (Theiss, Carpenter, & Leustek, 2015). For instance, the same family member who helps prepare a healthy meal may be the one who suggests taking a day off from the gym or splurging on a meal out with friends, which can derail weight management efforts. A professional relationship based on supportive accountability is rooted in the idea that the client expects defined benefits and supervision based on personal health goals and expected outcomes rather than the type of emotional support proffered through friendship (Mohr, Cuijpers, & Lehman, 2011). Although accountability support from family or friends can be inconsistent and professionally supervised interventions may be limited by frequency of interactions with the professional, both support strategies are associated with greater adherence to weight management interventions (Lemstra, Bird, Nwankwo, Rogers, & Moraros, 2016).

Aside from social accountability support, techniques like scheduling time for exercise, grocery shopping online to avoid unhealthy impulse purchases, and prepping healthy snacks in advance provided working women with other sources of accountability. Also, working women reported the use of digital applications and devices for tracking physical activity and calorie counting or food logging. Like participants from other research, most women in this study noted that the process of tracking foods was tedious and time consuming (Didžiokaitė, Saukko, & Greiffenhagen, 2018), yet logging foods and activity held them accountable to a weight management plan and helped them make better choices in the moment.

Niva (2015) examined women's experiences with digital food diaries and found that those who used the tool as a learning opportunity to inform healthy eating choices rather than a

calculative approach to weight loss were more inclined to internalize the information and use it to build a healthier lifestyle. Priming women on the educational purpose and usefulness of a food tracker application may help users broaden their acceptance of digital tracking tools as a means of developing and adopting healthier habits over time.

One participant found food tracking applications not only improved her food choices, but it enhanced her quality of life. For this woman, logging food was a necessary aspect of living with Type I diabetes and the food tracking applications added value by reducing time spent on the activity and improving accuracy of the macronutrient counts. While the participant did not view her excess weight as a disease, she realized weight gain had a direct effect on her diabetes and the way she felt which motivated her accountability behaviors.

Ideation support. Participants expressed that preparing meals at home was associated with consumption of a healthier and lower calorie diet, which was confirmed by Wolfson and Bleich (2015) in a study that examined the nutrients of food consumed by individuals who prepared home cooked meals compared to those who did not. In the current study, one issue with cooking healthy meals was sorting through the immense amount of information on the internet to settle on a recipe that was healthy, quick and easy to prepare, and tasted good. To bypass the frustration of futile internet searches, working women relied on sharing recipes with friends and family, interacting with others through social media to get new meal ideas, and following blogs of other working women to gain information and inspiration. The social aspect of being able to observe and model the behaviors of similarly situated women aligned with findings from other research (Kerr, Tan, & Chua, 2014).

In most cases, the need for new recipe ideas was driven by boredom with existing healthy options and a desire to find tastier health foods, a commonly reported complaint about healthy

eating habits (McMorrow, Ludbrook, Macdiarmid, & Olajide, 2016). Still, working women found the prospect of searching for new healthy recipes overwhelming, which resulted in dependence on trusted, less healthy meal plans or getting meals from restaurants.

Interest in ideation support rooted in social connection has implications for weight management programs. Creating a social platform for program participants to crowdsource healthy recipes that can be reviewed and verified as a healthy option by dietitians would give working women a trusted repository of ideas. Making the crowdsourced recipes searchable by ingredients on-hand, time needed to prepare, and macronutrient specifications would offer additional support for busy working women. A social platform within weight management programs includes the added benefit of being able to share strategies about meal planning, weight loss, and balancing the demands of work and life, which provides a sense of community and inclusion.

Time savers. Working women considered time a limited, hence, valuable resource. According to participants, the process of building a healthy lifestyle to promote weight control required time for researching information about food, exercise, and how to incorporate new behaviors into a busy life; time to contemplate and perform new behaviors; time to iterate unsuccessful behaviors; and time for habit formation. To "make time" for healthier lifestyle behaviors working women endorsed online grocery shopping and curbside pick-up as a leading time saving activity that also helped them minimize impulse purchases of unhealthy foods. This finding echoes the sentiment of other women who affirmed that online grocery shopping was easy, convenient, and saved time (Jilcott Pitts et al., 2020). Technology in the kitchen further enabled participants to save time prepping, cooking, and cleaning up after meals by using devices like the Instant Pot®, Foodi®, and slow cooker.

Participants referred to "multitasking" or combining health promoting behaviors with family activities to promote efficient use of time. For instance, participants spoke of family bike rides to get ice cream or walking to pick kids up from school as ways to promote exercise while being productive or participating in recreational family activities. These types of activities are facilitated by a built environment or man-made structures and features designed to support physical activity like parks with bike or hiking trails, dedicated bike lanes on streets, sidewalks, and neighborhood proximity to schools and stores. More recently, the term "built environment" has expanded to include community gardens and spaces that enhance walkability or bikability and healthy food access (Kaklauskas & Gudauskas, 2016). Gell and Wadsworth (2014) conducted a study of working women that confirmed the importance of a built environment in achieving physical activity recommendations. As women in the workforce continue to find ways to compress more demands of life into a fixed amount time, a built environment that supports "multitasking" behaviors will become increasingly important.

Theme 6: Roadblocks: Life and Work

In theme 6, *Roadblocks: Life and Work*, working women revealed barriers to weight loss and weight maintenance (RQ6), which supported the overall aim of describing their perceptions of and experiences with weight management. The women's experiences were organized into five categories: *Life Stages, Financial Constraints, Knowledge Barriers, Time Constraints,* and *Environmental, Social, and Psychological Barriers.*

Life stages. Like other overweight women (Heintze et al., 2010), working women in this study described physiologic changes across stages of life that served as barriers to weight loss and weight maintenance and were believed to be beyond their control. Among participants who had given birth, pregnancy and childbearing were perceived contributors to weight gain retention

and inability to lose weight. Middle-aged working women cited menopause as another physiologic factor associated with changes in body composition. In both cases, the findings are substantiated in the literature. Using data from the prospective Midlife Women's Health Study, researchers found that carrying a child to term was associated with excess weight that persists after pregnancy and increases the risk of obesity as women age (Pacyga et al., 2020). Research also indicates that menopause causes metabolic changes that correlate with obesity (Stefanska, Bergmann, & Sypniewska, 2015).

Additional research, however, indicates that pregnancy and menopause-related weight gain is not inevitable (Sarwer, Allison, Gibbons, 2006; Kozakowski, Gietka-Czernel, Leszczynske & Majos, 2017). Lifestyle interventions delivered by healthcare professionals that include diet modifications and physical activity promote effective post-partum weight management (Lim et al., 2019). Further, a low-calorie diet rich in fruits, vegetables, fish, and absent of fast foods protects menopausal women against metabolic changes that contribute to weight gain (Neuhouser et al., 2012). Other conditions like arthritis or fibromyalgia were seen as barriers to weight control too, yet researchers have demonstrated the success of weight loss interventions tailored for individuals with painful or degenerative conditions (Cooper et al., 2016; Magrans-Courtney et al., 2011)

The identification of conditions working women viewed as barriers to a healthy weight signals a need for educational interventions to enhance knowledge and empower women. Further, women's perceived lack of control over the conditions indicates a need for customizable interventions designed around locus of control or the degree to which an individual believes he or she has personal control over life situations (Rotter, 1966). People with an internal locus of

control believe they have greater control over circumstances and externally oriented individuals believe situations are beyond their control.

While strong internal locus of control has been correlated with greater weight loss and weight maintenance through independent efforts, people with an external locus of control responded more favorably to weight loss interventions delivered by an expert (Anastasiou, Fappa, Karfopoulou, Gkza, & Yannakoulia, 2015). Locus of control in the context of perceived barriers may help explain variations in outcomes of weight loss interventions, an area of research that deserves more attention dedicated specifically to working women. These findings suggest that designing interventions within weight control programs that are customizable based on individual characteristics, knowledge, and needs could positively influence the user's experience and the overall effectiveness of a program.

Financial constraints. Despite evidence that demonstrates the comparative affordability of healthy foods (Banks et al., 2012; Carlson & Frazão, 2012), working women declared eating healthier foods was expensive. The cost of healthy foods is a perceived barrier consistently reported across low-income and high-income populations (Wolfson, Bleich, Smith, & Frattaroli, 2016). Findings from the current study provided additional insights into how overweight working women in the middle- to high-income class made decisions about healthy foods and physical activities in relation to costs.

The self-reported household income of women in this study was on average 400% above the 2020 federal poverty level (U.S. Department of Health and Human Services, 2020), and yet their decision-making processes around affordability exhibited similarities to financially disadvantaged individuals. In a study designed to understand how low-income individuals evaluated the cost of food, Daniel (2020) reported that participants used a price reference point to

make parallel judgments about healthy versus unhealthy options but final decisions diverged from the cost comparison based on personal preferences for taste, convenience, or impact on health. These behaviors were consistent with how women in this study evaluated food options.

Though decision-making processes were similar in both groups, women from the current study demonstrated behaviors that portrayed cost as less of a true barrier to healthy eating and more of an observation that served as a parameter used in the decisioning process. Compared to the low-income sample (Daniel, 2020), overweight working women expressed less concern about making food last from one pay period to the next. A higher income level afforded participants greater leniency in making decisions based on preferences like taste and convenience as evidenced by most women frequently dining out or getting take-out food due to convenience despite viewing the activity as a costlier and less healthy option. According to Carlson and Frazão (2014), the decision dynamic around cost, convenience, and health is the main reason overall diet quality does not improve commensurate with income - because households with higher incomes dine at restaurants more frequently and meals prepared away from home are generally less healthy.

Another concern of working women was financial wastefulness and ensuring the best value for the money. Like the participants who were in low-income households (Daniel, 2020), unused food or resources was viewed as a waste of money. In the current study, wastefulness extended beyond food as working women refrained from joining a gym because not using the membership constituted a waste of money. Instead, money was diverted to an investment in bikes or home exercise equipment to support preferred activities that the family enjoyed on a regular basis – again supporting the notion of cost being a decision parameter rather than a true barrier.

While most overweight working women in this study expressed financial security, mindfulness of the cost of healthy options and economic use of financial resources was an influential part of their decision-making process. Future research is needed to better understand weight management decisions among working women across income levels. Knowledge in this area could help inform the development of decision-support tools that could enhance effective weight control efforts in this population.

Knowledge barriers. As the prevalence of women in the workforce has increased over the years, growth in fast food restaurants accommodated time-strapped, dual-income families and cooking skills became less of a necessity. Working women in this study conveyed a lack of knowledge and skill around how to cook healthy meals, how to make healthy foods more palatable, and how to diversify healthy food options. Greater perceived confidence in cooking ability and higher levels of cooking skills is associated with more frequently cooking at home (Namin, Ratchford, Saint Clair, Bui, & Hamilton, 2020), preparing more meals that include vegetables, and less consumption of fast foods over time (Utter, Larson Laske, & Winkler, 2018). Addressing women's lack of knowledge and skills around cooking healthy foods through educational programs and training would increase confidence and support a healthier lifestyle.

Although participants tried to identify satisfactory sources of educational support, they considered their efforts time consuming and a fruitless endeavor. Most women complained it was difficult to know what information was reliable or which new recipe was tasty, healthy, and easy to prepare. Some women watched cooking television shows to spark ideas, but noted the shows were designed for entertainment rather than educational or training purposes and the activity did not change their cooking behaviors. This finding aligns with other research that showed

individuals involved in hands-on cooking classes lost significantly more weight than individuals who observed cooking demonstrations (Alpaugh, Pope, Trubek, Skelly, & Harvey, 2020).

To address the need for basic skills that drive healthy eating habits, considerations should be given to the use of integrated, digital, on-demand cooking classes. Offering classes based on a searchable list of ingredients, a flavor profile for each dish, estimated preparation times, nutritional information, and step-by-step instructions designed for active participation would support working women's educational needs. This type of intervention would also provide women skills that could be passed down to the next generation through an enculturation process.

Time constraints. Among overweight working women, lack of time was the leading cause of undue pressure and inability to engage in healthy eating and exercise activities. Participants acknowledged that a home-cooked meal was the healthiest approach to eating, a finding confirmed in the literature (Wolfson & Bleich, 2015). Still, women opted for restaurant-prepared meals because it was a quicker and easier way to feed the family after working all day.

The concerns over time constraints identified in this study are supported by Tavares (2009), who indicated the leading barrier to participating in physical activity for working women with and without children is a lack of time. Researchers have shown that physical activity declines as women transition from school to the workplace (Gordon-Larsen, Nelson, & Popkin, 2004; Kwan, Cairney, Faulkner & Pullenayegum, 2012). The decline results from more time being dedicated to work and the start of a family; two activities that shift time away from self to other competing demands.

While this study was not designed to explore the effects of a pandemic on weight-related behaviors, a serendipitous finding emerged when comparing data collected pre- and post-coronavirus outbreak. The last four participants were interviewed while working from home

during the quarantine. Compared to the first seven participants interviewed pre-pandemic, variations in weight-related behavior patterns became apparent. Women interviewed during quarantine spent more time planning and preparing meals, in part because restaurants were temporarily shuttered, but also because they had more time during the day. Working from home eliminated the time needed to commute to and from work and it gave women the flexibility to complete household chores between work activities, freeing up time in the evening. The four participants who worked from home reported spending more time participating in leisure activities like walking and riding bikes as a way of getting out of the house at the end of the workday.

Of the four participants impacted by the quarantine, each had different family structures and jobs which influenced time demands. All were married, two had children and two did not, one was a salesperson and previously spent much of her workday in a car, one had worked in a healthcare clinic, and two had desk jobs. This made it difficult to identify similarities in behavior patterns among the quarantine group. It was evident, however, that the quarantine provided women some respite from the chaos of daily activities and served to demonstrate how a shift in work altered time demands on women and influenced weight-related behaviors.

Reflecting on the last four interviews, only one interview question was added – "How has the quarantine impacted you're your life and eating or exercise behaviors?" The interviews were conducted early in the pandemic, a time when little was known about the lasting effects it would have on work, family, and life. Had this investigator known the extent of the pandemic additional questions could have provided more insights into working environments and ways of working that support the needs of overweight working women.

Being a part of the workforce is a trade-off for some women. Though working women are significantly contributing to the household income, the money they earn is being spent on childcare and dining out in many cases because time reserved for these responsibilities is limited. What little time is left at the end of the workday is relegated to managing the day-to-day household responsibilities and there is insufficient time for personal care. As employers contemplate ways to attract more female talent into the workforce, considerations should be given to providing flexibility in how, when, and where women get their work completed when feasible. This control and flexibility in the workplace can help women effectively manage their time and support weight management efforts.

Environmental, social, and psychological barriers. Overweight working women discussed several environmental, social, and psychological factors at work and at home that created barriers to healthy eating and physical activity. Most participants worked in an office setting where open floor plans created visual and auditory distractions that impaired productivity and resulted in women working extra hours to complete responsibilities. Participants noted the distractions make it difficult to concentrate increasing cognitive load, stress, and fatigue. This finding is supported by other research on the effects of similar work environments (Minutillo, Cleary, & Visentin, 2020).

In a study of two groups of office workers relocated to an open-plan workspace, satisfaction with the work environment decreased in both groups, yet stress was only experienced in the group that lacked access to workplace quiet rooms (Haapakangas, Hongisto, Varjo & Lahtinen, 2018). The quiet rooms mitigated the activation of stress by offering a reprieve from workplace distractions. In the current study, overweight working women indicated the time lost to decreased productivity and fatigue were barriers to healthy behaviors like exercising, meal

planning and cooking at home. When exposed to stressful workloads and sedentary work environments participants reported stress eating, skipping lunch, and prolonged periods sitting throughout the day. Some employers are addressing these types of worker concerns by testing adjustable sit-stand workstations, treadmill desks, and technology prompted microbreaks with positive results on stress reduction overall employee well-being (Foley, Engelen, Gale, Bauman & Mackey, 2016; Mainsbridge et al., 2020).

The ubiquitous nature of unhealthy, affordable, fast foods was another environmental barrier identified inside and outside of the workplace. Women working in an office setting with cafés and vending machines noted easy access to an abundance of fried foods and foods high in sugar, salt, and carbohydrates making it difficult to maintain a healthy diet at work. A lack of affordable, healthy, fast food options compounded the problem for working women who were trying to find quick meal solutions for lunch away from the office or for the busy family after a full day of work. These barriers are consistent with findings from other research involving office workers (Blackford, Jancey, Howat, Ledger, & Lee, 2013).

Due to the popularity and profitability of unhealthy food options, removing or replacing these items with healthier choices can be met with resistance in the workplace. To avoid restricting food choices while attempting to facilitate healthier choices, employers are testing choice-architecture interventions (Allan, Querstret, Banas, & de Bruin, 2017). Choice-architecture refers to modifying properties of the dining environment to influence behaviors (Hollands et al., 2013). Interventions include changing the ambience of dining situations, adjusting the portion sizes of healthy vs. non-healthy foods, functionally designing cafés to bring healthier options to the forefront, and priming people with environmental cues to influence subconscious behavioral responses. Choice-architecture provides employers an intermediate

solution that balances consumer demands with promoting healthier food options in the workplace. It can also gradually shift consumer food preferences over time to the point that unhealthy food options may be phased out as sales decline.

Participants expressed social and psychological barriers that stemmed from perceived gender roles and societal expectations. Working women in this study struggled with juggling the demands of work and family while trying to excel at both roles. When variance exists between an individual's preferred versus actual level of role participation at work and at home, and failure to meet the expectations of gender role norms is perceived, then work-family guilt is experienced (Hochwarter, Perrewé, Meurs, & Kacmar, 2007; Livingston & Judge, 2008). Studies have shown that work-family guilt is experienced by men and women, still both genders agreed that higher expectations are placed on women (Korabik, 2015). The time needed to effectively manage weight may compound the guilt when women are forced to dedicate more attention to themselves and away from work or family. In many instances, women abandoned the personal weight management activities to ensure they dedicated adequate time for work and family.

When trying to balance perceived societal expectations as mothers and working women, participants relayed a need for a workplace culture of health. A culture of health extends beyond delivering employer-sponsored health promotion programs. Through leadership and co-worker support, employee engagement, and strategic communication, a culture of health becomes part of the corporate identity and gives employees permission and encouragement to dedicate time to self-care (Payne, Cluff, Morgan-Lopez, Lang, & Matson-Koffman, 2018). Participants in the current study felt relief when managers communicated the importance of personal health and provided the flexibility to get work done on their own terms.

From an ecological perspective, the environment, social connections, and psychological influences impact working women's eating behaviors. Creating effective, employer-sponsored, weight management programs should expand beyond programs focused on portion control and calorie counting to include environmental modifications that positively influence social interactions and psychological responses in ways that support a healthy lifestyle inside and outside of work. Workplace policies that offer flexibility in ways of working and corporate initiatives that promote a culture of health are important considerations, yet more research is needed to evaluate potential ecological solutions that directly and indirectly address the weight management needs of working women.

Unifying Theme: Weight Management as a Lifestyle

The unifying theme of *Weight Management as a Lifestyle* emerged from the consensus that maintaining a healthy weight was more than a diet or single task. In the weight management literature, lifestyle is discussed in terms of behavior modification interventions or teaching opportunities related to diet and exercise (Chopra, Malhotra, Ranjan, Vikram, & Singh, 2020). Further, understanding adherence to diet and exercise modifications has focused on correlates like age, gender, education level, depression, and self-efficacy with a recommendation for more research to identify factors that influence adherence to healthy lifestyle behaviors (Leung, Chan, Sea, & Woo, 2017). Participants in the current study provided a broader view of lifestyle that encompassed multiple psychosocial and environmental factors that influenced their ability to sustainably modify diet and exercise behaviors.

The lifestyle approach that emerged from this study required participants to reflect on how they viewed body weight, to create a frame of mind that supported ongoing weight control, to test and learn what techniques worked best then dedicate the time to building healthy habits

using those techniques, and to recognize the positive and negative influences as well as barriers to overcome. Although the visual organization (see Figure 2) of themes, categories, and subcategories gives the appearance of linear relationships, the various factors that influence overall weight control are interconnected. For example, participants discussed time constraints that stemmed from balancing the demands of work and duties associated with perceived social roles. When women dedicated personal time for healthy weight-related behaviors, the time away from work and family created feelings of guilt which negatively influenced attempts at healthy behaviors. Adequate social support from a family member or friend, however, helped to nullify the emotions and provide extra time for women to practice healthy behaviors. The dynamic relationships between factors added complexity to women's ability to manage weight and resulted in individualized journeys on a path to achieving an optimal weight. Ultimately, the coalescence of influencing factors and how participants effectively navigated or managed each factor culminated into a lifestyle that supported women's efforts to control weight.

Study Limitations

Descriptions about overweight working women's perceptions and experiences with weight management were collected from 11 participants from a local community in a south-central region of the United States. Given the study examined environmental influences on weight-related behaviors, the findings may not be transferable to women working in other areas of the United States. Several participants, however, previously lived in other domestic and international regions and spoke of the influence of cultural and environmental variations.

A lack of diversity in age, race, and ethnicity in the participant population was another limiting factor. The study was designed to focus on adult, overweight, working, women, although women between the ages 18 and 28 were not represented in the sample. All participants

were from similar racial and ethnic backgrounds except two woman who were Asian and Hispanic. Diversifying the sample may offer findings useful when comparing various demographic characteristics of working women.

The coronavirus pandemic was a limitation in that the outbreak and subsequent quarantine changed many aspects of life that unexpectedly influenced women's weight-related behaviors. Though data from the women pre- and post-pandemic provided a comparison of weight-related behaviors that resulted from changes in the work and home environment, the coronavirus outbreak disrupted data collection and shifted the target population from being employed full-time to being employed full-time and working from home. This limited the ability to achieve data saturation on the intended sample. To minimize this limitation, women automatically discussed or were prompted to reflect on pre-pandemic behaviors during the interviews. Further, data collection concluded approximately six weeks into the quarantine at which time individuals were still hoping for a resolution to the situation and to resume usual activities. The timing of data collection early in the pandemic did not allow time for women to reflect on the significance of mandatory lifestyle changes in relation to body weight.

The experience level of the investigator was another limiting factor. Although practice interviews were conducted to test the semi-structured interview guide and build experience, the novice investigator continued to develop interview skills throughout the study. One coder conducted the data analysis, which limited interpretation of the data to a single point of view. To mitigate this limitation, the investigator met with faculty to review preliminary findings and guide thematic development.

Another limitation of this research was the time commitment associated with the qualitative interview considering the finding that working women were under significant time

constraints. One woman who inquired about the study declined after learning more about the length and nature of the interview process indicating she did not have time. It is possible other working women refrained from participating because of time requirements.

Considerations and Recommendations

This study developed foundational knowledge about overweight working women's perceptions and experiences with body weight and weight control. The insights participants shared highlighted factors that influenced weight-related behaviors in an under-explored population, and the results stimulated ideas for education, future research, implications for practice, and considerations for policy development.

Implications for Education

Research provides evidence that health professionals feel educationally unprepared to address the weight management needs of patients (Croghan et al., 2019). While educational gaps identified by students focused on guidelines for diet, exercise, and medications (Fruh et al., 2019), this research indicates a need for students to understand the ecological aspect of human behavior and the underlying causes of overweight and obesity. Promoting effective weight management is largely driven by healthy personal behaviors. Given that behaviors are influenced by social and environmental interactions, an educational emphasis on social ecology would enhance health professions students understanding of human behavior in the context of weight management. This knowledge could strengthen the health professional's ability to deliver meaningful patient education about behavior change and effective ways to sustain a healthy diet and exercise.

Educating health professions students on the socioecological causes of obesity will reduce weight bias in the healthcare community (Hill, 2020). Weight bias or the perception that

overweight and obesity is the result of the patient's inability to control eating behaviors or engage in physical activity leads to weight-based stigma and prevents patients from seeking professional help for weight management. An in-depth understanding of the socioecological approaches to weight management shifts the blame away from the patient and on social and environmental causes of weight gain. And the educational processes give students pause to reflect on and address personal biases toward individuals with overweight and obesity, which bolsters development of therapeutic patient-provider relationships.

Implications for Research

Results from this study indicate a need for additional research to understand obesity prevention and weight management needs in various populations of workers. Working women may face unique situations that influence healthy behaviors, nevertheless variations exist between and among women in different weight categories, family configurations, job types, and working environments. Additional research would generate comparative knowledge to understand differences and similarities in weight management needs of working women with different BMIs, marital status, number of children, and job types. This knowledge could help inform additional studies on the effectiveness of targeted interventions.

Research exploring how working women want to be supported in their weight management efforts is missing from the literature. In the current study, only one participant sought help from a medical provider, and all other participants used commercial programs and interventions. Even though seven women had access to an employer-sponsored weight management program, no participant reported use of a workplace program. Understanding overweight working women's preferences for medical, commercial, and employer-sponsored

weight control interventions can help identify educational opportunities and better support working women in their weight loss efforts.

More exploratory studies are needed to identify factors that influence working women's weight-related behaviors from an ecological perspective. Women in the workforce are exposed to unique circumstances that shape how they interact with their environment, family, friends, and co-workers. These interactions influence eating behaviors, physical activity, and habit formation in ways that impact body weight. Research of the ecological factors that contribute to effective weight management may drive innovative weight loss solutions for defined populations of working women.

Implications for Practice

This study identified weight control strategies and interventions preferred by overweight working women. These findings have implications for nursing and health promotion practices. When counseling or building interventions aimed at weight management, a focus on building self-efficacy, minimizing failure, and creating support to manage stress is needed. Self-efficacy and perceived failure can be addressed by concentrating on processes rather than outcomes and by helping women curate small but buildable behavior modifications that harmoniously integrate into their lifestyle. An iterative process to behavior change mitigates the negative effect of failing to adopt a specific healthy behavior or lose a predetermined amount of weight. By directing one's attention to a behavioral process, weight loss becomes a derivative outcome rather than the goal and adopting healthy behaviors that work for the individual becomes the goal. This approach nurtures self-efficacy as women iteratively identify weight management behaviors that work for them.

Stress that stemmed from time constraints and perceived social roles and responsibilities had negative effects on working women's weight-related behaviors. Nurses and health promotion professionals involved in counseling and program development should think broadly about the factors that influence eating and exercise, and incorporate strategies that strengthen women's ability to manage life stressors. Helping women recognize the underlying causes of stress and offering possible solutions can help women take control of the stress-inducing situation and minimize the negative effects on weight-related behaviors.

Implications for Policy

Understanding environmental, social, and psychological factors that influence eating and physical activity provides support for workplace policies that promote work-life balance. In office settings, policies that provide sufficient and equitable access to quiet spaces enhance workers ability to complete tasks without interruptions thereby reducing inefficient use of time and fatigue that disrupts healthy behaviors. Likewise, giving employees control, when feasible, over how, when, and where they complete tasks promotes job satisfaction and reduces stress when trying to manage multiple demands at once. Investments in flexible work accommodations like the result-only work environment and the accommodation model support sustained productivity while promoting employee well-being (Perlow & Kelly, 2014).

The coronavirus pandemic forced many companies into technology-supported ways of working and illuminated the effects of gender inequality in the workplace that signaled a need for innovative policies. As men and women began working remotely simultaneously, men started witnessing the demands on women of running a household, caring for children, and working full-time (Smith and Johnson, 2020). In turn, more men began supporting women with the unpaid responsibilities, recognizing the importance of flexible workplace policies, and requesting

employer support. These social dynamics that emerged from the pandemic are helping to normalize flexible work accommodations. As employers consider return-to-the-office strategies, more attention should be given to flexible work policies that facilitate work-life balance and enhance employee well-being.

Adoption of progressive workplace policies that support employee well-being also promotes an organizational culture of health. By institutionalizing a focus on health, employers facilitate supportive manager behaviors and reduce stigma associated with employee requests for accommodations to address personal needs. A culture that emphasizes the importance of employee well-being can be beneficial in supporting the weight management efforts of working women. For employers, the benefits of a culture of health include lower worker stress, better morale, and improved productivity (Safeer & Allen, 2019). Further, a culture of health may help attract more female talent into the workforce.

Conclusions

Overweight working women's perceptions of and experiences with body weight, weight gain, weight loss, and weight maintenance have been under-studied, resulting in a knowledge gap that undermines efforts to prevent obesity in this population. The findings from this qualitative descriptive study provide foundational knowledge that can be used to better understand and support the weight control needs of working women.

Overweight working women described body weight (RQ1) as being something *Beyond a Number on the Scale*. Body weight shaped how they viewed themselves and how they interacted with others. Participants' experiences with weight management (RQ2) were summarized as a *Matter of Time, Effort, and Commitment* that included iterative mindset strategies. By focusing on the process of weight control rather than a predefined outcome, women were able to adopt

successful behaviors, modify unsuccessful behaviors, and avoid the feeling of failure when weight loss was not immediately achieved.

Factors that contributed to weight gain (RQ3) consisted of the fundamental behaviors that resulted in an imbalance between the *Calories Consumed versus Calories Burned*. Despite knowledge of behaviors that caused weight gain, women found it difficult to overcome the powerful influences on weight-gain behaviors that stemmed from the relationships between food and fellowship, emotional triggers, and culture.

The last three research questions concentrated on information specific to weight maintenance and weight loss. Women illustrated factors that promote weight maintenance and loss (RQ4) through *Iteration to Automaticity: Journey from Behavior to Habit to Lifestyle.* Whether motivated by physical health, family, or aesthetics, participants underscored the importance of being mindful of choices, prioritizing one's self, and reserving adequate time for healthy habit formation. These strategies combined with the positive influence of social support structures allowed women to build the foundation for a healthy lifestyle.

Overweight working women clearly outlined preferred methods of weight maintenance and loss (RQ5) in *Programs, Interventions, Techniques, and Support*. Commercial programs and medical interventions commonly kickstarted the weight loss process for participants as they continued testing and adopting various food and exercise techniques as part of their iterative behavior change process. To support their overall efforts to lose or maintain a healthy weight, women leverage accountability and decision support tools, ideation support, and time saving techniques.

At the same time, participants struggled to overcome barriers to weight maintenance and loss (RQ6) identified in *Roadblocks: Life and Work*. Overweight working women were

challenged by physiologic changes, financial constraints, and knowledge barriers that impeded their weight management efforts, nevertheless time constraints were the leading roadblock. Environmental, social, and psychological factors at home and at work also created barriers to eating healthy and exercising.

The findings from overweight working women's perceptions of and experiences with weight control coalesced into the unifying theme of *Weight Management as a Lifestyle*. Although participants commonly initiated weight loss with a diet or program, it was the iterative behavior changes adopted over time and harmoniously integrated in daily life that made a meaningful difference in women's ability to control their weight. These insights offered by working women who avoided or overcame obesity can inform the development of weight control interventions that support obesity prevention and meet the needs of overweight working women.

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Appendices

Appendix A: Recruitment Flyer Option 1

KU SCHOOL OF NURSING
The University of Kansas

Are you a Woman in the Workforce Trying to Lose Weight?

University of Kansas Medical Center researchers want to learn more about your weight loss journey

This study might interest you if you:

- Are an overweight woman
- Are working full-time
- Are at least 18 years old
- Have attempted or are currently attempting weight loss

If you decide to volunteer and you qualify for this research study:

- You will participate in an interview with a registered nurse
- The interview will last about 1 hour
- The interview will take place at a location of your choice
- There is no cost to you to participate

To volunteer or learn more about this study, contact Mendy Fisher, RN at 479-721-3833 or afisher4@kumc.edu

Appendix B: Recruitment Flyer Option 2

KU SCHOOL OF NURSING
The University of Kansas

Are you a Working Woman Trying to Lose Weight?

University of Kansas Medical Center researchers want to learn more about your weight loss journey

This study might interest you if you:

- Are an overweight woman
- Are working full-time
- Are at least 18 years old
- Have attempted or are currently attempting weight loss

If you decide to volunteer and you qualify for this research study:

- You will participate in an interview with a registered nurse
- The interview will last about 1 hour
- The interview will take place at a location of your choice
- There is no cost to you to participate

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Appendix C: Semi-structured Interview Guide

1. To open the conversation, please tell a little bit about you and your family.
2. What are your thoughts or perceptions about body weight?
3. How do you feel about your current weight?
4. What does it mean to you to have a healthy body weight?
5. What are reasons behind your interest in losing weight?
6. How do your family and friends feel about your weight?
7. What do you think caused you to become overweight?
8. What do you think contributes to unhealthy eating and exercise for working women?
9. Are there factors that influence your eating and exercise?
10. How does your work affect your eating and exercise?
11. What factors in your home or work setting support or undermine healthy weight-related behaviors?
12. What have you done to lose or maintain weight?
13. What techniques/strategies have been most helpful?
14. What has been least helpful?
15. What do you think makes losing weight or maintaining a healthy weight difficult for working women?
16. What do you think can be done to overcome these problems or barriers in the future?

Appendix D: Theory Guided Interview Question Development

Topic	Interview Questions	Related HPM Components
Describe body weight	1. How do you feel about your current weight? 2. What does it mean to you to have a healthy body weight?	Personal characteristics and experiences, perceived benefits
Factors that contribute to weight gain	3. What do you think caused you to become overweight? 4. What do you think contributes to unhealthy eating and exercise behaviors for working women? Are there factors that influence your eating and exercise behaviors? 5. How does your work affect your eating and exercising behaviors?	Personal characteristics and experiences, situational or environmental influences, competing demands, preferences, self-efficacy, affect
Factors that promote weight management	6. What are reasons behind your interest in losing or maintaining weight? 7. How do your family and friends feel about your weight? 8. What factors in your home or office support or deter from (barrier) healthy weight-related behaviors?	Perceived benefits, interpersonal influences, situational or environmental influences, self-efficacy
Preferred methods of weight management	9. What have you done to lose or maintain weight? 10. What has been most helpful? 11. What has been least helpful?	Personal characteristics and experiences, preferences
Barriers to weight management	12. What do you think makes losing weight or maintaining a healthy weight difficult? 13. What do you think can be done to overcome these problems or barriers in the future?	Perceived barriers, competing demands, preferences, interpersonal, situational or environmental influences, self-efficacy

Appendix E: Research Information Sheet

RESEARCH INFORMATION SHEET
Weighing in: Overweight working women's descriptions of body weight, weight gain, and weight loss
Mendy Fisher
479-721-3833 or afisher4@kumc.edu

I am inviting you to take part in a research study through the University of Kansas Medical Center (KUMC) being done by Mendy Fisher. Taking part in this study is voluntary, and you may change your mind at any time.

People who join the study will participate in an interview with Mendy, a registered nurse, for about 1 hour. I will ask questions about body weight, weight gain, and weight loss, in addition to questions about your age, race, educational status, and employment. The interview will be audio-recorded to ensure I have accurate notes about what was said. Recordings will be stored on a KUMC secure server until completion of the study at which time the information will be destroyed. I may contact you after the interview to clarify or confirm information for the study.

I hope that the study information is useful in understanding overweight working women's weight-related lifestyle behaviors. The interview questions may be personal. You do not have to discuss any information that you are not comfortable sharing and having recorded. Efforts will be made to maintain your confidentiality throughout the study. To protect your identity, I will ask you to create a pseudonym that will be used when writing-up or discussing the results of the study.

There are no risks, benefits, or payment for participating in the study.

If you have questions about this study, please contact Mendy Fisher at 479-721-3833 or afisher4@kumc.edu. For questions about your rights as a research participant, you may contact the KUMC Institutional Review Board (IRB) at (913) 588-1240 or IRBhelp@kumc.edu. You are being given a copy of this information sheet to keep for your records.

Sincerely,

Mendy Fisher, MNSc, RN

Appendix F: Demographic Information Form

The following demographic information will be collected during the individual interviews

Pseudonym: Click or tap here to enter text.

Age: Click or tap here to enter text.
Race:
☐African American/black ☐American Indian/Alaska Native
☐Asian ☐European American/white
☐Native Hawaiian/Pacific Islander ☐Other race

Ethnicity: Latinx/Hispanic:
☐Yes
☐No

Are you married or living with a significant other: ☐Yes ☐No
Number of children who live with you: Click or tap here to enter text.
Your highest education level:
☐Completed some High School ☐Completed High School or Earned GED
☐Completed some College Courses ☐Completed Undergraduate Degree
☐Completed Graduate Degree

Where do you work (Employer): Click or tap here to enter text.
What kind of work do you do: Click or tap here to enter text.

What is your household income:
☐Below $10,000 ☐$100,000 - $149,999
☐$10,000 – $24,999 ☐$150,000 - $199,999
☐$25,000 - $49,999 ☐$200,000 - $249,999
☐$50,000 - $74,999 ☐$250,000 or greater
☐$75,000 - $99,999 ☐Prefer not to answer

Height in feet and inches: Click or tap here to enter text.
Weight in pounds: Click or tap here to enter text.
How many times have you attempted to lose weight: Click or tap here to enter text.

Appendix F: IRB Approval

The University of Kansas Medical Center

Human Research Protection Program

APPROVAL OF SUBMISSION

September 27, 2019

Cynthia Teel
CTEEL@kumc.edu

Dear Cynthia Teel:

On 9/26/2019, the IRB approved the following submission:

Type of Review:	Flexible IRB Review
Reviewed by:	KUMC Human Research Protection Program
IRB#:	STUDY00144646
Title:	Weighing In: Overweight, Working Women's Descriptions of Body Weight and Weight Management
Investigator:	Cynthia Teel
Funding:	None
Documents submitted for the above review:	• Weighing In, Demographic information form, • Weighing In, Employer permission letter, • Weighing In, Fitness center permission letter, • Weighing In, Flyers, • Weighing In, Information sheet, • Weighing In, IRB Response Letter, • Weighing In, proposal protocol, • Weighing In, Salon permission letter, • Weighing In, Semi structured interview guide, • Weighing In: Flexible Review Project Description
Special Determinations:	• Waiver/alteration of the consent process • Waiver of consent documentation

This project was reviewed and approved under the KUMC Policy for Flexible IRB Review. It is eligible for Flexible IRB Review because it is minimal risk and is not associated with any federal funding or support. As such, you are under this KUMC policy, rather than federal regulations, when you conduct the research.

This review and approval is granted because you attested that it meets the criteria for Flexible IRB Review. If there is a change to any of the conditions listed below, you must promptly notify the IRB office so that the project can be re-reviewed under the federal regulations governing human subjects research.

Mail-Stop 1032, 3901 Rainbow Blvd., Kansas City, KS 66160
Phone: (913) 588-1240 Fax: (913) 588-5771 IRBhelp@kumc.edu