EXPLORING SELF-EFFICACY AS A FACTOR IN PLANNED BEHAVIOR CHANGE FOR WORKPLACE-BASED HEALTH PROMOTION INITIATIVES

A THESIS SUBMITTED TO THE GRADUATE SCHOOL IN PARTIAL FULFILLMENT OF THE REQUIREMENTS FOR THE DEGREE MASTER OF SCIENCE BY

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Chapter One: Introduction

Introduction

The prevalence of chronic health conditions is on the rise leading to a heightened awareness of health risk factors and disease prevention and management. "Eighty-six percent of all health care spending in 2010 was for people with one or more chronic medical conditions (Centers for Disease Control and Prevention, 2015, p. 3)" and "as of 2012, about half of all adults—117 million people—had one or more chronic health conditions [and] one of four adults had two or more chronic health conditions (Centers for Disease Control and Prevention, 2015, p. 1)." Chronic disease is largely associated with physical health risk-factors such as lack of exercise or physical activity, inadequate nutrition, tobacco use, and excessive alcohol consumption (Centers for Disease Control and Prevention, 2015). Within a sedentary society that gravitates toward unhealthy or risky behaviors as a means to cope, behavior change strategies are an ideal resolution to our chronic state.

Self-care practices are key to preventing or delaying the onset of chronic disease as well as managing existing symptoms to improve quality of life. Under the current ‘paternal’ healthcare structure where the physician is viewed as the expert, there is a lack of adherence to recommendations or self-care plans given by healthcare professionals (20-40% in acute illness, 30-60% related to chronic illness, and 80% in preventive care) (Pignataro & Huddleston, 2015). Lack of physical activity and preventive self-care is tied to increased risk of chronic disease, disability, and reduced quality of life (Centers for Disease Control and Prevention, 2015; Pignataro & Huddleston, 2015). This low adherence and increased risk for disease calls for promoting self-care in modern health care delivery and there is evidence of a shift in the medical profession from treatment to empowerment (Agency & Callaghan, 2003). As the stage is being set, qualitative researchers have the opportunity to pinpoint common factors and barriers to performing health behaviors to support
the development of techniques that work to empower patients and increase the likelihood of successful behavior change.

Chronic disease increases individual healthcare costs and largely impacts Medicaid, Medicare, and employer-provided group health insurance rates. Employee wellness initiatives are becoming more common to address the effects of chronic illness in the workplace. Effects like increased healthcare costs, absenteeism and lowered productivity due to physical limitations and stress (Fleck, 2007; Soeren Mattke et al, 2014). A movement toward empowerment is underway in the healthcare realm where the individual plays a more active role in their health (Agency & Callaghan, 2003). This focus should be reflected in workplace health promotion programs centered on biometric indicators to empower individuals to assume active roles in their preventive self-care and self-management. Poor self-care practices overtime lead to poor health, low morale, and increased costs, creating a prevailing need for health promoting intervention in the workplace (Fogarty, 2008). Employers who seek to reduce healthcare costs and address issues of absenteeism, presenteeism, and turnover are investing in wellness initiatives to increase their bottom line and create a culture of health (Lin & Lin, 2014)

**Situation Statement**

In order to address the effects of chronic disease in the workplace, Ball State University's employee enhancement office has developed numerous employee wellness initiatives that invest in the health of faculty and staff and enhance the campus culture making Ball State a better place to learn and work. In 2015, Ball State introduced a 16-week lifestyle intervention based on the Diabetes Prevention Program curriculum available through the Centers of Disease Control and Prevention.

This program was made available to insured faculty and staff and incentives were offered to increase participation. Through participation in the program, employees earned points they could cash in for wellness related prizes such as half off a Fit Bit device, a free 6-month gym membership,
or tickets to attend the campus theater. While these incentives can offer temporary motivation, they do not address personal attitudes or beliefs regarding healthy decision-making or environmental barriers that influence successful behavior change. Wellness and health promotion professionals at Ball State and worldwide must aim to remove barriers to performance and assess factors of self-care such as social support, dietary health literacy, and knowledge of safe and effective weight management strategies (Agency & Callaghan, 2003; Denford, Taylor, Campbell, & Greaves, 2013; Lenhart, Daly, & Eichen, 2011; Mo, Blake, & Batt, 2011). In order to effectively develop self-efficacy toward healthy behaviors in our modern-day workforce, health and wellness professionals must continue to identify psychological, sociological, and environmental factors that lead to self-efficacy. The purpose of this study was to explore self-efficacy as a factor in planned behavior change as reported by employees participating in a workplace-based diabetes prevention program.

Research Questions

1. How do participants who have completed an employer-sponsored diabetes prevention program describe and explain the new skills and practices learned and behaviors developed during the program?

2. Which skills and practices do participants view as being the strongest contributors to their perception of self-efficacy related to performing their new behaviors?

3. How would participants recommend the new knowledge and skills be included in future lifestyle modification programs?

Delimitations

Delimiters for this study include:

1. The study is only looking at factors of self-efficacy as a factor of planned behavior change.
2. This study seeks to identify only factors of healthy eating and physical activity and will not assess factors related to tobacco or alcohol use or other factors that increase the risk of poor health outcomes.

3. This study is not focusing on a comprehensive working adult population, but the small number of faculty and staff employed at Ball State University in Muncie, Indiana who are enrolled in voluntary lifestyle intervention program.

4. This study is designed to inductively explore ideas related to participation and self-efficacy and not count and quantify the data collected.

**Limitations**

This study has the following limitations:

1. The study is based on self-reported information.

2. Study findings will illuminate ideas and concepts that will need to be further investigated to determine potential associations or cause and effect relationships.

3. Due to size of the sample population, location of study, and methods used for investigation, findings are not expected to be representative of all working adults and employees working at Ball State or in environments different from Ball State University.

**Definitions of Key Terms**

*Planned Behavior Change.* An individual's initial personal commitment to adopting a daily living practice that promotes physical wellness, such as monitoring food intake or engaging in physical activity, that ultimately results in a lifestyle modification.

*Self-Care Practices.* Any self-maintenance or health promoting action performed as a means to prevent, monitor, or manage chronic disease and symptoms of chronic disease. Examples of self-care practices may include any of the following: recognition and control of symptoms, scheduled
use of healthcare, adherence to medication or therapy, eating healthy, being physical activity, and active learning and goal setting (Denford et al., 2013).

*Self-efficacy.* An individual's beliefs about his or her ability to perform health behaviors. Self-efficacy deals with confidence in one's knowledge or skills required to accomplish a given task.

*Perceived Behavioral Control.* The perceived ease or difficulty an individual attributes to a specific task or behavior. Influences a person's confidence in their ability to manage health based on his or her beliefs toward health promoting behavior (Ajzen, 2002).

*Chronic Condition.* An illness that persists three months or more with symptoms that are often manageable but not curable with medication alone. Examples of chronic conditions represented in the literature include heart failure, type 2 diabetes, hypertension, arthritis, and cancers.

**Assumptions**

1. Due to variance in participant values and preferences, multiple factors of self-efficacy are anticipated and will be recognized and valued with equal merit.
2. Research findings are bound to Diabetes Prevention Program participant experiences and to the interview questions used in data collection.
3. Researcher created comfortable interview environment to elicit genuine responses from study participants.
4. Findings of qualitative research follow inductive reasoning as participant responses will supply evidence for but not proof of conclusion.
5. Research is intended to uncover patterns in participant responses to help explain factors of self-efficacy.

**Significance of Study**

Wellness initiatives and lifestyle interventions are limited when they are unable to engage individuals beyond the incentive period and instill lifelong behavior change. A strong association
between self-efficacy and planned behavior change offers insight into a promising behavior change approach and has been documented in several areas of the literature including weight management, diabetes self-care, heart disease self-care, and orthopedic rehabilitation (French, Wade, & Farmer, 2013; Grindley, Zizzi, & Nasypany, 2008; Lenhart et al., 2011; Riegel, Lee, & Dickson, 2011). Adequate self-care helps prevent unnecessary and costly hospitalization and from an employer's perspective, it has potential to prevent excessive absenteeism, low productivity, and high insurance costs. There is a need for individuals to take greater responsibility for their own physical wellbeing in order to prevent and manage chronic disease. If self-efficacy is a strong factor of behavior change and the practices that promote self-efficacy can be identified, employers can effectively work toward empowering workers to take responsibility for their health and wellness. Workplace wellness can be approached as a means to enhance employee self-efficacy in order to be capable of successful lifestyle modification.

This study is distinct because of the existing interpersonal connection between the participants and the researcher. As an integral part of the participant's program experience, I was able to establish trust and familiarity with each individual well before their participation in my graduate research. As a part of my graduate assistantship, I worked with the Ball State employee enhancement office and served as a program facilitator for the 16-week program for three academic semesters. I interacted with each of the program participants directly as an educator and coach. This relationship allowed me to stimulate thoughtful discussion of ideas during data collection with a deep understanding of the context both in the program and in the participant's lives. In addition to exploring factors of self-efficacy and evaluating program offerings, the completion of this study gave me the opportunity to build my expertise in sustainable behavior change and improve my abilities as a future wellness manager and coach.
Chapter Two: Review of Related Literature

This review of literature is designed to add clarity to behavioral decision making, behavior change efforts, and self-efficacy. It is divided into the headings: Changing Behavior to Enhance Physical Wellbeing, Defining Self-efficacy as a Tool for Enhancing Lifestyle Modification, Self-efficacy and Planned Behavior Change in the Workplace, Building Self-efficacy, and Tools to Measure Self-efficacy and Behavior Change. The first section outlines the need for behavior change to improve, manage, and prevent chronic disease and how this approach fits in with our current health and wellness environment. The following section takes a closer look at how self-efficacy relates to the behavior change process both in theory and in practice. In the third section, the benefits and limitations of workplace wellness initiatives are discussed as they relate to long-term behavior change. The final two sections describe the known factors that predict and enhance a person's self-efficacy related to health behaviors in addition to accepted indicators for self-efficacy and behavior change outcomes.

Changing Behavior to Enhance Physical Wellbeing

Behavior change is often necessary to reduce risk factors for chronic disease by eliminating negative habits and adopting sustainable health promoting behaviors (Anshel, 2008; Ylimäki, Kanste, Heikkinen, Bloigu, & Kyngäs, 2014). The U.S. Surgeon General has released multiple statements endorsing the benefits of physical activity as a part of a healthy lifestyle. This recommendation has also been supported by other organizations and foundations like the Center for Disease Control and the American Heart Association that promote regular exercise and view a sedentary lifestyle as a major risk factor for heart disease and more (Haber, 2013). Eating a healthy diet that avoids processed meats, refined carbohydrates, and sugars while consuming foods high in micronutrients, fiber, and beneficial fats can help prevent chronic disease. These food combinations reduce
inflammation in the body, a known precursor to chronic disease (Gonzalez-Campoy et al., 2013; Palmer, 2012). Chronic disease and conditions that can be improved or prevented through mindful eating and physical activity include cardiovascular disease, cancer, metabolic syndrome, type 2 diabetes, depression, Alzheimer's disease, osteoporosis, rheumatoid arthritis, poor sleep, and stress (Anshel, 2008; Foster, Rosenblatt, & Kuljiš, 2011; Gonzalez-campoy et al., 2013; Haber, 2013; Palmer, 2012; Ylimäki et al., 2014).

Self-care behaviors are linked to improved health status, and improved self-care is related to personal self-efficacy. Health and wellness professionals should encourage individuals to be engaged in their health decisions and care. A focus on self-efficacy and active involvement from the individual in health and behavior change decisions has a significant correlation with reduced unscheduled healthcare visits (Denford et al., 2013; Dickson, Buck, & Riegel, 2011). This approach emphasizes shared information on self-care guidance, nutrition, and promoting physical activity in order to reduce risk-factors and repeat hospital visits (Riegel et al., 2011). Hospitals, community health centers, universities, and businesses offer lifestyle intervention programs that feature information and coaching related to eating healthy, staying physically active, overcoming barriers and managing stress to enhance wellbeing (LeCheminant & Merrill, 2012; Ylimäki et al., 2014). Programs provide recommendations for safe and effective fitness practices and healthy eating guidelines related to portion control and how to read nutrition labels and product packaging. Ultimately, health enhancing interventions increase participant motivation and self-efficacy toward behavior change while decreasing the risk of chronic disease and improving well-being (Ylimäki et al., 2014).

**Defining Self-efficacy as a Tool for Enhancing Lifestyle Modification**

Self-efficacy is recognized as a construct of Bandura's Social Cognitive Theory and is defined as confidence in one's ability to accomplish a specific task (A. Bandura, 1989). The study of
self-efficacy is imperative to enhance planned behavior change efforts as self-efficacy is a key factor of adherence to health behaviors and actualizing self-made goals (A. Bandura, 1989; Choo & Kang, 2015; Schwarzer, 1997). Self-efficacy plays a large role in engaging individuals in physical activity and has a strong correlation with social support, perceived barriers to physical activity and other health behaviors (LeCheminant & Merrill, 2012; Mo et al., 2011; Pignataro & Huddleston, 2015). Poor self-efficacy reduces personal motivation and hinders the individual's ability to set goals. Higher self-efficacy means fewer perceived barriers to performance and increased confidence that the new behavior will yield desired results (Agency & Callaghan, 2003; Ajzen, 2002; A. Bandura, 1989; Grindley et al., 2008).

Studies find a strong tie between self-care self-efficacy and health behaviors while recommending an effective coaching approach based on developing self-efficacy to encourage learned behaviors that promote health (Agency & Callaghan, 2003; Grindley et al., 2008). Programs for weight control should focus on developing self-efficacy to increase performance of health promoting behavior (Brinthaupt, Kang, & Anshel, 2011; Choo & Kang, 2015; Lenhart et al., 2011). Existing wellness initiatives focus on sustained behavior change in physical activity levels and making more sound food choices are already seeing improved perceived physical ability and motivation to engage in health behaviors (Brinthaupt et al., 2011; Lockwood & Wohl, 2012; Mo et al., 2011).

Lifestyle modifications are enhanced by placing an emphasis on an individual’s belief that he or she is capable of adopting and maintaining a healthy lifestyle (Pignataro & Huddleston, 2015). Behavior change is more closely linked with beliefs toward behavior than beliefs about the illness (Brinthaupt et al., 2011; French et al., 2013). An individual's confidence in his or her ability to plan and perform health promoting behaviors influences behavior change outcomes (Lenhart et al., 2011; Mistry, Sweet, Latimer-Cheung, & Rhodes, 2015; Mo et al., 2011), creating the logical link that thoughts about behavior affect behavior change. This implies that lifestyle intervention may have a
greater impact if focused on action plans rather than education alone. Many who self-identify as overweight have a desire for positive behavior change but lack the confidence to make the necessary changes (Lenhart et al., 2011). If a plan is in place and the individual invested their efforts in creating that plan, a greater chance for adherence exists (A. Bandura, 1989).

Lifestyle intervention programs should not be constrained to teaching people how to distinguish between healthy and unhealthy behaviors. These initiatives must also provide opportunities for problem solving and self-discovery to make adopting healthy behaviors manageable and valuable (Anshel, 2008; Brinthaupt et al., 2011; Lockwood & Wohl, 2012). Lifetime behavior change must be inherent, practical, and align with the client's value system so that the client's action plan replaces negative habits with positive rituals (Anshel, 2008). For example, individuals undergoing lifestyle change may exhibit negative attitudes toward exercise but may enjoy the idea of a walk with his or her partner before dinner.

In order to fully address behavioral risk-factors of chronic disease, strategies to improve self-efficacy toward health behaviors must be evaluated and developed to engage the individual and instill a sense of confidence that enables them to reach their health goals. These behavior change strategies should be used to develop new and existing workplace-based health promotion programs.

**Self-efficacy and Planned Behavior Change in the Workplace**

The study and practice of occupational health has evolved from a more broad focus of health and safety standards in the work environment to a new strategic role companies play in improving employee health (Fogarty, 2008). This, in part, is due to the rising monthly medical costs and increased rate of chronic disease (Fleck, 2007; Mattke et al., 2013; Mo et al., 2011). Half of all employers with 50 or more employees now offer some form of workplace wellness program (Mattke et al., 2013). These programs focus on disease prevention and management through ongoing clinical screenings and lifestyle interventions. Observed health behaviors include increasing physical activity
to 150 minutes per week, eating the recommended five servings of fruits and vegetable daily, monitoring sugar and fat intake, and eating whole grains.

Wellness initiatives in the workplace are effectively enhancing employee wellbeing through healthy behavior change (Chapman, Lesch, Baun, & Ed, 2007; Fleck, 2007; Fogarty, 2008; Jones et al., 2014; Lin & Lin, 2014). The results of these workplace interventions indicate significant improvements in employee health behaviors represented as reduction in body weight, cholesterol and blood pressure levels sustained up to a two year period (LeCheminant & Merrill, 2012; Mattke et al., 2013). Improvements in employee health and wellbeing have additional side effects including reduced healthcare costs, absenteeism, presenteeism, and turnover (Chapman et al., 2007; Lin & Lin, 2014).

Worksite wellness initiatives make sense when employees are spending the majority of their waking hours with their employer. One's work environment also provides a natural social support network to facilitate behavior change. Employees in an organization already share a common culture and have learned to communicate effectively (LeCheminant & Merrill, 2012). Tools and practices have been developed by wellness program vendors and health promotion agencies to improve effectiveness of workplace interventions. Monetary incentives are often used to influence participation and short-term behavior change. However, further evaluation and research is needed to provide companies with tools to effectively educate and empower employees to adopt long term health behaviors (Mattke et al., 2013).

Building Self-efficacy

Factors of self-efficacy. Self-efficacy deals with a person's confidence in performing health behaviors in both private and social settings and can be identified based on the individual's attitudes, beliefs, and abilities. From these characteristics, we can identify three levels of self-care self-efficacy: self-care expert, inconsistent self-care, and self-care novice (Riegel et al., 2011). The self-
care expert exudes a positive attitude, is in tune with his or her body, makes decisions to improve his or her well-being, and often has experience with disease management which increases self-efficacy. Those who practice inconsistent self-care are characterized by low awareness of his or her body, health risks, and lack of social support. In older adults, inconsistent self-care may be linked to a decline in cognitive function, making it difficult to recognize or manage symptoms. The self-care novice lacks motivation and confidence, has a poor attitude toward their wellbeing often mixed with depression and daytime fatigue (Riegel et al., 2011). Those with low self-efficacy report more perceived barriers to making healthy food choices and regular physical activity including exercises being too painful, lack of energy, lack of motivation, and lack of time (Grindley et al., 2008; Mo et al., 2011).

Lack of confidence in self-care can stem from lack of clear, accurate health information and lack of confidence in self-observation (i.e., low awareness of symptoms). Disjointed or conflicting self-care instructions decrease chances for proper self-maintenance and efforts to integrate multiple health behaviors may be overwhelming (Dickson et al., 2011). Thus individuals with multiple comorbidities are less likely to engage in successful behavior change (Dickson et al., 2011). Motivation to engage in physical activity or improve eating habits is hindered when a client is preoccupied with heart failure symptoms, depression, or a diabetes self-care regimen.

Health literacy, social support, a premeditated action plan, and a positive attitude toward health behaviors all play an influential role in predicting an individual's level of self-efficacy (Brandt, 2013; Lenhart et al., 2011; Lockwood & Wohl, 2012). Separate from predictors of physical activity, there are a distinct set of motivations to plan for physical activity. Personal motivators considered when developing an action plan are key in developing positive client attitudes and perceived behavioral control toward planning behavior (Mistry et al., 2015). Perceived behavioral control is linked to self-efficacy as it relates to the individual's perceived complexity or difficulty of a task (Ajzen, 2002, 2011). If the desired behavior challenges the individual's normal self-care practices or
requires the use of new knowledge or skills, the individual's perceived ability to make the change will be low due to obstacles he or she fears an inability to overcome.

Factors of Self-efficacy

- Value wellbeing
- Health Literacy
- Optimistic Outlook
- Multiple Comorbidities
- Social Support
- Program Efficacy
- Self-made Action Plan
- Self-care Experience
- Self-observation
- Perceived Behavioral Control
- Perceived barriers (e.g. time management, physical discomfort, fatigue, lack of motivation)

**Practices that enhance self-efficacy.** Wellness programs provide tailored educational and motivational practices to build self-efficacy and increase the likelihood of health promoting behaviors through developing competencies and autonomy (Brinthaupt et al., 2011; Mo et al., 2011; Pignataro & Huddleston, 2015). To be empowered, the individual must first understand how to change his or her behavior in order to be successful in making the change, and then the person must feel confident and motivated to do so. Participant intervention should be focused on removing barriers to physical activity through advanced problem solving techniques and through various sources of social support to improve self-efficacy (Mo et al., 2011; Pignataro & Huddleston, 2015). To do this, the provider must gauge the person's willingness to change and the unique source of motivation, values, and learning style (Anshel, 2008; Grindley et al., 2008; Mo et al., 2011; Pignataro & Huddleston, 2015). Based on these personal indicators, if we can predict whether or not the participant will adhere to self-care behaviors, health and wellness professionals can address barriers to performance, provide information, and offer assistance where needed (Grindley et al., 2008).

Motivational Interviewing (MI) is becoming a common practice aimed at encouraging self-exploration of personal values and attitudes in order to resolve any resistance to change (Anshel, 2008). Incorporating MI techniques can enhance the chances of successful behavior change by identifying the person’s willingness to change and his or her intrinsic motivators while developing
confidence, responsibility, and autonomy to actualize the planned lifestyle change (Anshel, 2008; Brinthaupt et al., 2011; Chapman et al., 2007). MI considers components of the Transtheoretical Model of Health Behavior (TTM) and the Theory of Reasoned Action (TRA) in directing and motivating human behavior (Ajzen, 2002, 2011; Anshel, 2008). TRA takes into account four factors of intended change that serve as factors of behavior: knowledge, outcome expectations, attitudes and opinions, and self-efficacy (Ajzen, 2002, 2011; Anshel, 2008; Pignataro & Huddleston, 2015). TTM explains a person’s willingness to change and is used to increase effectiveness of participant intervention by connecting the current stage of change with the type of intervention deployed (Prochaska & Velicer, 1997). The stages of change include pre-contemplation stage, contemplation, preparation, action, and maintenance (Anshel, 2008; Brinthaupt et al., 2011).

During behavior change programs, the client is guided through a process of self-discovery to identify values and desires that reveal the individual's biggest obstacles to change along with key strengths to assist in the behavior change process. The goal of many wellness programs is to help the participant identify any gaps or disconnect between who they want to be and where they are (Anshel, 2008; Pignataro & Huddleston, 2015). Disconnected values occur when a person's values and actions do not align, inhibiting the person's ability to reach health goals (Brinthaupt et al., 2011). The participant is guided to create a new vision for himself along with an action plan to incorporate new healthy habits and remove perceived barriers to change (Anshel, 2008). The individual must set his own goals, decide how to practice self-care, and evaluate performance and progress (Anshel, 2008). Research shows that this co-active approach increases mutual-respect and communication between the self-care agency and program recipient, encouraging individuals to take an active role in their wellbeing and improving intervention outcomes (Anshel, 2008; Irwin & Morrow, 2005).

Building behavior change self-efficacy in a health or workplace setting requires empathy-building and empowerment techniques (Denford et al., 2013). Verbal persuasion or positive feedback has an external influence on building an individual's confidence toward an intended action. This is
attributed to the encouragement, support, and acknowledgment received from others. It is the employer or coach's responsibility to champion the client in areas of his life where he lacks self-efficacy (A. Bandura, 1989; Chapman et al., 2007; Irwin & Morrow, 2005; Patel, 2014). Reinforcing behavior through tangible or intangible means will lead an individual to seek out that desired effect in future instances. This may be as simple as receiving praise or being rewarded with a gift or experience. Acknowledging a client's action by pointing out progress or having him or her reflect how actions embody personal values is another effective tool to encourage the behavior change process (A. Bandura, 1989; Mistry et al., 2015). This increases the client's perceived access to intuition and relevant skills and develops confidence in actions as acknowledgement and reinforcement of new behaviors empowers change and builds self-efficacy (A. Bandura, 1989; Irwin & Morrow, 2005).

Tools to Measure Self-efficacy and Behavior Change

The theory of self-efficacy as it relates to planned behavior change has been thoroughly examined in the literature. Previous studies have employed quantitative tools to measure self-reported self-efficacy and planned behavior change outcomes. Such surveys were designed to measure a person's perceived ability to accomplish a task in relation to their actual performance. Self-care self-efficacy is found to be a factor of successful behavior change as it influences participant's attitudes toward health and health behaviors, barriers to physical activity, confidence in performing health behaviors, knowledge of responsible health practices, social support, improved nutrition and physical activity levels (Agency & Callaghan, 2003; Lockwood & Wohl, 2012; Mo et al., 2011).

There is less qualitative data related to self-efficacy and planned behavior change available. Interviews and focus groups can provide trustworthy, comparable qualitative data and have been used successfully in qualitative research related to self-efficacy toward other areas of interest such as breastfeeding and oral contraceptives (Moore & Coty, 2006; Peyman & Oakley, 2011). Unlike focus
groups, the flexibility of one-on-one interviews allows data collection to be scheduled at convenient times for all research participants and allows interviewees to express viewpoints freely in their own terms. The interview facilitator fosters open dialogue to promote unbiased, innovative thought and deepened understanding of the research topic (Peyman & Oakley, 2011). Through the interview process, the research can identify self-reported levels of self-efficacy and behavior change outcomes. The application of graphic elicitation is also a useful tool in the interview process in which interviewees are given the opportunity to convey their thoughts through diagrams that serve as interview stimuli and a source of raw data (Crilly, 2006).
Chapter Three: Research Methodology

Conceptual Framework and Study Purpose

The concepts examined in this study are structured according to Bandura's theory of self-efficacy which underpins his social-cognitive theory explaining how a person's adoption of new knowledge and skills is largely influenced by his cognition, environment, and behavior. Bandura and other researchers provide ample evidence that value-based, participant centered interventions are linked to improved participant self-efficacy and the successful adoption of new health promoting or self-care behaviors (A. Bandura, 1989; Albert Bandura, 2006; Irwin & Morrow, 2005).

The foundation of my study relies on the assumed strong relationship that exists between self-efficacy and successful behavior change, made evident in the literature review. Quantitative research has identified which factors are known to influence health promoting behavior change outcomes. As the researcher, I set out to examine self-reported factors of self-efficacy in order to gain a deeper understanding of how these factors influence participant confidence in achieving health goals in a workplace-based health promotion setting. I wanted to take a closer look at how self-efficacy can be enhanced in employee-sponsored wellness programs by evaluating current methods of delivery in relation to participant reported contributors to self-efficacy toward adopting new health behaviors. This was accomplished using the factors of participant reported self-efficacy identified in the participant interviews related to making healthy food choices and being physically active in addition to the

Figure 1. Conceptual Framework
development of participant case studies that offer insight into each participant's program experience. Study participants revealed their perceptions of techniques used in an employee lifestyle intervention program as factors of improved self-efficacy such as health education and social support which are represented in the literature. I also wanted to attempt to clarify what the greatest contributors to self-efficacy are by looking at the commonalities that exist among the participant's reported program experience in addition to any telling outliers.

The results of my study combined with the range of quantitative and some qualitative research regarding factors of self-efficacy and methods of program delivery establish a new basis on which to build participant self-efficacy and foster lifestyle interventions in the workplace. This is possible through an improved understanding of how self-efficacy works to improve behavior change outcomes and what tools and experiences participants' report influence their ability to reach their health goals.

Population and Sample Description

A purposeful sample of volunteer program participants were recruited from a university employee program directed at diabetes prevention through guided lifestyle change. Employees were made aware of the opportunity to participate in the program through the Ball State University employee wellness enhancement newsletter and e-mails. All participants underwent a biometric screening one week prior to start of program in order to determine health status. At the time this study was conducted the Ball State University's employee enhancement office reported that five 16-week programs had been offered over the course of three academic semesters with a total of 45 employees having completed the program (personal communication, February 29, 2016).

Participant data reflected in this study is limited to volunteer past participants who satisfy all program requirements by attended at least 14 of the 16 weekly sessions offered. Eligible study participants (N=45) received an e-mail from the university wellness enhancement office inviting
them to voluntarily participate in this qualitative research study. A verbal reminder was given in the final session of the program that was still in progress and I instructed participants to e-mail me privately in order to express their willingness to participate in the study.

It should be noted that Ball State enlisted two program facilitators in order to lead multiple employee groups at once. Six of the seven participants who volunteered for this study completed the program with me as their instructor and coach. One study participant completed the program under the guidance of another coach. However, for each new group, I made regular appearances to make observations, assist with weigh-ins, and establish familiarity with participants. I had also interacted with this particular participant during the program's grocery store tour.

Instrumentation

The qualitative tools and methods of gathering data observed in this study have been adapted from previous research settings to explore self-reported self-efficacy and planned behavior change outcomes. Open-ended interviews were selected as a data collection instrument to increase the number of sources of information and enhance the depth of the data gathered while providing perceived causal inferences (Winston, 1997; Yin, 1994). A series of one-on-one interviews with qualified program participants were conducted in order to stimulate the production of ideas within a trusting environment. The researcher's interview guide (see attached Appendices) was developed using an open-ended question structure taken from Norton's study of self-efficacy among teachers (2013) and adapted to reflect the content of the 16-week lifestyle intervention program. Each volunteer participant was interviewed once and completed a written consent form and a demographic survey at the start of the interview process. As the interviewer, I clearly communicated to participants that their interview responses provided valuable data to learn from and would not be judged.

In order to facilitate the interview process and serve as a supplementary source of data, each participant completed a graphic elicitation activity where they were asked to create three illustrations
using images and/or words they felt best represented their level of confidence in eating well and being physically active before, during, and following their participation in the program. These graphic elicitations (see attached Appendices) were narrated by each participant at the start of the interview and were referenced as needed to evoke deeper, more thoughtful responses to interview questions (Crilly, 2006).

In addition to participant interviews and the accompanying graphic elicitations, participant observations made as a facilitator of the lifestyle intervention program served as an informal research tool. All data represented for study participants reflects content from the participant interviews and graphic elicitations. However, as the researcher I chose to lean into my dual role to establish as much objectivity as possible within the given methods of analysis. This holistic view of the participants' experience enhanced the accuracy of the participant interviews and provided a sense of how the interviewee communicates (Kawulich, 2015; Winston, 1997). Prior participant observation also allowed insight into the reality and context of the subject matter as well as insight into interpersonal behavior that may have impacted participant experiences (Winston, 1997).

**Data Collection and Analysis**

Ball State University's Internal Review Board approved this study as exempt prior to the collection of any data. Seven individual participant interviews were conducted in January and February of 2016 on the Ball State University campus. The minimum number of interviews was set at six due to the study's small homogenous population with the total number of interviews determined as participant responses reached sufficient redundancy. I acted as a guide for each semi-structured interview following a formal interview guide to address each topic area and straying from the guide temporarily to elicit further discussion when appropriate.
A digital audio recording was made for each interview and written notes of the discussion were made as a back up to the digital recording. Participants were also encouraged to contact me after the conclusion of their interview with any additional comments. The interviewee's name and position held at the university remained confidential during all phases of data collection. Interviews were scheduled at isolated intervals at the interviewee's convenience. Each participant was assigned a code name and all identifiable data was password protected on a private laptop or kept in a locked cabinet. A transcription of each recorded session was typed using a word processor and each digital record was manually deleted upon completion of its transcription.

A one-page participant case study was produced for each interviewee. Using data from participant interviews a case study was assembled as a way to represent the individual's unique background, perceived self-efficacy, personal program goals and achievements, significant program experience, and perceived role of self-efficacy in reaching their goals (Winston, 1997). I achieved data source triangulation in creating the individual case studies by using the transcribed interview responses supplemented by interviewees' graphic elicitations and informal participant observations made by the researcher during the program. In addition, all seven case studies were reviewed collectively using a pattern-matching procedure focusing on changes in self-efficacy, factors of self-efficacy reported, and program outcomes (Winston, 1997). This joint analysis of related cases is helpful in trying to understand a phenomenon in a specific setting (e.g., improvement of self-efficacy in 16-week lifestyle intervention program) and for matching the observed case against the assumption that increased self-efficacy related to health behaviors improves health-related outcomes (Stake, 1994; Winston, 1997; Yin, 1994). This analysis also provided a greater understanding of self-efficacy and its influence in workplace-based health promotion by examining how the program was perceived and what components helped build participant self-efficacy.
Transcripts from interview conversations were also analyzed using a quadrant system, or framework analysis (Leedy & Ormrod, 2013). Patterns that arose using the case study methodology were enhanced by a set of matrices containing themes derived from participant interview responses supported by direct quotations that address each research question (Cohen & Crabtree, 2006; Moore & Coty, 2006; Peyman & Oakley, 2011). In an Excel spreadsheet a row was assigned for each interview question used during data collection and organized according to the research question for which it helped provide feedback. Direct quotations included in the table represent a descriptive sample of the raw responses provided by the study participants.

As the researcher, I derived a set of primary themes that represent factors of self-efficacy reported by study participants based on the interview transcripts and influenced by graphic elicitations and participant observation. Using a tabula rasa approach, I grouped like responses using keywords and contextual data in order to develop themes that characterize the past or current experience of the respondents as they relate to self-efficacy. The frequency of each identified theme was recorded in the themes matrix. Interview questions and responses were grouped based on the research question being addressed in order to easily interpret research findings.

In order to fully address each interview question, several rows contain supporting themes in addition to the primary themes within the first section of the interview questions. In the first instance these supporting themes serve as a description of the primary themes based on whether they underpin the acknowledgment or the reported lack of individual self-efficacy. In two other cases, supporting themes identify how the factors that lead to self-efficacy influenced behavior change outcomes for the interviewed participants and what factors the participants felt were responsible for their own program outcomes.
Interpretation of Results

The multiple methods approach to data collection (that includes the graphic elicitations, participant interviews, and informal participant observation) and data analysis (which includes the participant case studies and the framework analysis) were intended to add to the trustworthiness of this study. The researcher’s prolonged engagement with the interviewees created trust, reduced the likeliness of any personal preconceptions, and ultimately increase confidence in interpretation of the research results.

The thick description offered through the collective case study analysis gives this study added validity and transferability as patterns found in data are well understood. The collective case study analysis served as a clear description of the real-life context in which the behavior change intervention occurred while introducing commonalities among the study participants (Stake, 1994; Winston, 1997). Reoccurring themes identified in the framework analysis of participant interview responses help describe how self-efficacy acts as a factor of planned behavior change by acknowledging the participants' new skills and practices learned and behaviors developed during the program and what factors reportedly influenced self-efficacy.

The ceremonies and interactions that took place with the members of the committee who approved this study served as an external audit of the interpretation of the findings introduced in the following section. Findings are meant to be considered along with the existing related literature in order to make recommendations for content and delivery of health promotion programs in the workplace to effectively build self-efficacy and enhance behavior change outcomes.
Chapter Four: Analysis of Data

Demographics

The following demographic profile represents the participants' responses to set of demographic questions presented at the beginning of each interview. Six participants identified as female, one as male. Six participants declared themselves as Caucasian, one as African American. Three participants were between the ages of 45 - 59, while four participants were 60 years of age or older. Four participants were married at the time of the study; one individual stated they were single; another individual was a widow; one marked that they were divorced or separated. When asked what the highest level of education obtained was, four had received a post graduate degree or higher, one was a college graduate, one had attended some college, and one had received some college in addition to vocational training.

All of the study participants completed a 16-week diabetes prevention program focusing on healthy and sustainable lifestyle change. Any subsequent findings represented in this chapter will reflect the demographic and psychosocial backgrounds obtained from each participant during the interview process.

Participant Case Study - Interviewee 001 "Jewels"

Participant background and perceived self-efficacy prior to lifestyle modification program. As a former athlete, Jewels continues to lead an active lifestyle. She and her husband love the outdoors and enjoy spending their free time camping, canoeing, and hiking. Having been active and healthy most of her life, Jewels knows the importance of a healthy diet but had not dedicated herself to studying what it meant to eat well. Jewels works a job that sometimes requires long, inconsistent hours and likes to take on projects that benefit her community. While she is very busy
with her commitments, she makes a point to get up and walk when she can and gets between 15,000 and 20,000 steps in each day.

Jewels got into the program because her mother and sister suffer from diabetes. In addition to finding out how to manage her body composition, blood glucose, and cholesterol, Jewels wanted to know what could be done to prevent or delay the onset of type 2 diabetes. She felt confident going into the program that she could make the necessary changes to reach her health goals. She had confidence in the program itself and that the regimen, learning, and accountability it provided would allow her to succeed.

**Individual outlook on importance of self-efficacy in performing new health behaviors.** Jewels expressed that a person's confidence and subsequent performance seemed to be related but that her confidence at the beginning of the program didn't make a difference for her. While she joined the program with a high level of confidence to succeed, she was unable to reach her goals. She revealed that there were external factors, including her lack of commitment outside of the meetings and her work schedule. When asked if confidence toward making healthy decisions influenced her ability to be committed, Jewels simply replied, "No." She said it all comes down to commitment and the desire to live a good life. She feels confident that she has the knowledge and ability to reach her goals, but that it is just a matter of committing and overcoming the time-management barrier.

**Participant program experience and reported contributions to their perceived self-efficacy.** During the program, Jewels focused on learning everything she could from the group. She believes a person's education toward healthy eating combined with having a good peer mentor is crucial to building confidence and making good food choices. As the program developed, she said it became less about the weight loss and more about developing a healthy relationship with food and how that leads to overall health. Jewels also felt the classes helped reestablish the value of strength training in maintaining a healthy weight, bone density, and muscle mass.
Personal goals and achievements and perceived self-efficacy following program. At the start of the program, Jewels set out to increase her water intake and eat fewer carbohydrates in order to lose ten pounds she says she has been carrying around for the past fifteen years. While she did not reach her goal weight, she reports eating more natural foods like fruits and vegetables. She realized following the program that is was the weight training she was lacking and feels confident in adopting a formal exercise regimen in the near future. Jewels noted that she doesn't feel guilty for not reaching her goals during the program as she was devoting her energy to other aspects of her wellbeing. She recently served as a full-time caregiver for her mother and had several preplanned trips with friends so she is looking forward to finding her new routine and applying everything she learned during the program.

Participant Case Study - Interviewee 002 "Margaret"

Participant background and perceived self-efficacy prior to lifestyle modification program. Before starting the program, Margaret admits she was stuck in a rut and was discouraged about her weight and didn't know how to improve her health. She had dieted all of her life but felt she was never well-equipped with the proper knowledge to make a difference. She is no longer concerned with her body's image but rather how well it functions. She says, at her age it is about living long enough to see your grandchildren graduate high school. Margaret does not consider herself athletic but has always enjoyed walking. Prior to the program, she reported being active ten to fifteen minutes a day at most.

Individual outlook on importance of self-efficacy in performing new health behaviors. In Margaret's opinion, confidence is everything. She says it allows her to get back up, get back on track, and set new goals because she knows she can do it. She knows she will see results if she is faithful to her plan.
Participant program experience and reported contributions to their perceived self-efficacy. Margaret reports learning a lot during the program but stresses that the greatest benefit was the camaraderie established within the all female group. The ability to be acknowledged and surrounded by her peers and share experiences without any condemnation was encouraging. She also benefitted from hearing others' experiences and learning what worked for them. She expressed her gratitude for the crucial role that peer support played. She says it wasn't about being in competition with each other but supporting one another while learning to adapt to a new healthy lifestyle.

Margaret found that the visual demonstrations and being able to see what a serving size looked like was very impactful and helped her adjust her diet accordingly. She also appreciated the way in which the information was presented and the handouts. She didn't feel as though she was being talked down to, rather she felt empowered and there was a sense of responsibility to incorporate what she had learned. The weekly weigh-ins and food trackers offered accountability and discussions on goal setting and the importance of finding personal value in being physically active were two big motivators for her as well.

Personal goals and achievements and perceived self-efficacy following program. At the start of the program, Margaret set her intention to lose some weight and learn how to eat healthier. Margaret exceeded these goals and feels armed with the information she needs to guide her food decisions. While she says she has not increased her amount of formal exercise, she makes an effort to move more throughout the day. Margaret claims she has a new attitude toward leading a healthy life, is in tune with her body, and is a good judge of what is healthy and what is not. She says the class made all the difference. It help build her confidence by giving her the chance to make healthy changes and prove to herself that she can do it. She is determined to do everything possible to continue improving her health.
Participant Case Study - Interviewee 003 "Molly"

Participant background and perceived self-efficacy prior to lifestyle modification program. Going into the program, Molly admitted she was confused about her health and didn't know where to go for help. She was seeing her doctor and a hormone specialist but to be able to better understand her body's need, she needed things explained in layman's terms. Molly came from a very active family so leading an active lifestyle came easily for her. She feels that her generation is not as informed about what it means to eat healthy as the health education they may have received is outdated.

Molly has concerns about her health due to a family history of chronic disease. At home, Molly has already made a great effort to improve her and her husband's nutrition, swapping out bad fats for healthier alternatives and eating more fresh foods. This was her mission regardless of how much he resisted.

Individual outlook on importance of self-efficacy in performing new health behaviors. Molly is well aware that the program increased her confidence in making healthy decisions and this allowed her to reach her goals. Three months after completing the program, she admits her confidence has dipped a little so staying on track may be difficult without the weekly accountability. She realizes it is up to her to make healthy choices and to resist being lazy.

Participant program experience and reported contributions to their perceived self-efficacy. The classes challenged her but she was encouraged by the passion and advice shared by her peers who were in the same boat. She even met another woman who could relate with her struggle to improve her husband's diet. She claims it was this environment combined with the easy to understand information that made all of the difference. Molly believes knowledge is a key factor in building confidence toward making healthy decisions and this class fit the bill.
As a visual learner, she felt the handouts and demonstrations were most beneficial. She appreciates the conversation but she needs something concrete to help the information sink in. Molly credits the weekly food tracker and her Fit Bit with keeping her focused on her goal.

**Personal goals and achievements and perceived self-efficacy following program.** Molly's main objective was to lower her cholesterol which she was able to accomplish. She was also able to lose some weight, increase her physical activity, and reduce her stress related to food. Molly keeps a vision board, a poster representing her commitment to her own wellbeing. She keeps this at her desk and it helps remind her of her intentions every day. Molly noted that, because she created this in the program, it means a great deal to her.

Molly is now confident in gauging proper portion size and is more mindful of reading nutrition labels. She says fast food is a thing of the past and continues to prepare nutritious meals at home for her and her husband. She has made a habit of going to the gym and is motivated to keep building on her success. She knows that while she may not always do her best, she is confident she can always try again.

**Participant Case Study - Interviewee 004 "Sally"**

**Participant background and perceived self-efficacy prior to lifestyle modification program.** Like many of us, Sally was brought up eating three square meals a day where breakfast was most important, lunch consisted of a sandwich, and for dinner there was meat, potatoes, and a green vegetable which was then followed by dessert. Prior to the program, Sally ate whatever she wanted and had little idea about calories or how food influenced her health. In fact, she had not heard of cholesterol until she moved to the States.

Being raised in the UK, public transportation and walking were the norm so being active was a way of life. She would walk to the train station, take the dog on daily walks, and take the kids down to the park on weekends. Her assumption was that you ate what you wanted to get by and you would
just burn it off throughout the day. Before the program started, Sally regularly took walks and took the stairs at work during her breaks. Sally enjoys being outdoors and loves to walk but is not able to be as active as she would like working a full-time sedentary job in a car-obsessed city.

**Individual outlook on importance of self-efficacy in performing new health behaviors.** Sally believes a person's confidence toward making healthy decisions is key in reaching your health goals as her confidence has helped her. She added that a person must first value themselves and their health in order for this confidence to truly lead to changed behaviors.

**Participant program experience and reported contributions to their perceived self-efficacy.** The program opened her eyes to how food affects our bodies and that healthier choices make for a better life. Sally said the information and group sharing really helped her adopt a new mindset where her health and wellbeing were a top priority. Sally valued the camaraderie with participants who were going through the same thing and thought hearing about what others were going through and what helped them was very rewarding. A visual learner, Sally found the My Plate demonstration very helpful in learning what constitutes a 'healthy' meal and what a proper portion size looks like. The weekly food logs and weigh-ins also served as a source of accountability for her.

**Personal goals and achievements and perceived self-efficacy following program.** Sally's main goal was to drop her weight and learn more about healthy food options. She was able to see lose seventeen pounds during the program and has kept it off for over a year. She is very proud that she can fit into a favorite dress that had been in her closet for years. Following the program, Sally makes her food choices with caution and is always checking food labels. She always considers what is best for her body as opposed to what she think sounds good. She is quick to grab a piece of fruit when she has a sweet tooth and she willingly swaps her fries for a salad when eating out. Minding proper portions is also a skill she acquired. Even when she slips, her confidence allows her to get right back on track. With her new-found expertise, Sally has started to help her children and grandchildren make healthier food choices which brings her great joy. As she nears retirement, Sally
is looking forward to moving somewhere warm where she can pick up golf or tennis. She says she is ready to live her life and live it well. She feels very confident that she can continue to improve her health.

**Participant Case Study - Interviewee 005 "Katherine"**

**Participant background and perceived self-efficacy prior to lifestyle modification program.** At the start of the program, Katherine felt very confident in her knowledge to choose healthy foods but lacked the motivation to do so. When life got hard she would slip and use food to make her feel better. She says our culture of using food as a band-aid or to celebrate makes it difficult for many to maintain a healthy diet. She joined the program looking for a kind of accountability to help her stay on track. Katherine knows that if she puts herself in a situation that provides accountability and competition, she will actively work toward her health goals.

Katherine has been a member of Weight Watchers for years and while her family isn't in perfect health, they challenge and support one another to eat well and stay active. Katherine loves to walk and for a while was walking every morning until her schedule changed and she lost her momentum.

**Individual outlook on importance of self-efficacy in performing new health behaviors.** Katherine feel that confidence is a critical when adopting new health behaviors. She believes that if you don't feel that you can do it, you will never reach your goal. Katherine feels that knowledge on how to live well isn't the key, it is the individuals focus and persistence that allows them to be successful. It is the belief that you are the one in control.

**Participant program experience and reported contributions to their perceived self-efficacy.** Katherine thought he program in itself provided much needed accountability and helped maintain the mindset she needed to stay on track, as the weekly meetings kept healthy living on the forefront of her mind. For Katherine, tracking her food weekly, and knowing that someone would review it, was a major source of motivation. Simultaneously, having a FitBit and working toward a
certain number of steps each day was also a great way to keep herself accountable and be in healthy competition with others. Conversations dealing with nutrition education, healthier food options, and hearing what works for others was also influential.

**Personal goals and achievements and perceived self-efficacy following program.**
Katherine's program goals were action oriented. She aimed to improve her diet by tracking her food and increasing her physical activity. Katherine is not about reaching a goal weight, rather she strives to feel good. She knows that if she eats well and moves more the weight will come off but it is all about being healthy first. This approach allowed her drop ten pounds during the program.

Katherine says the key for being active is finding what you love and when it comes to living healthy it is a matter of finding something you can do every day and is sustainable. She is confident that she can make the decisions that align with her health goals but understands that she isn't perfect, nobody is, and you just keep trying. Katherine realizes the importance of surrounding herself with people who are striving to live healthier and are experiencing the same difficulties. She believes this is encouraging and is a strong predictor of personal success.

**Participant Case Study - Interviewee 006 "Benjamin"**

**Participant background and perceived self-efficacy prior to lifestyle modification program.** At the start of the program, Benjamin's confidence was low. Ben's mother was raised in southern United States and was accustomed to high calorie comfort foods which she made a tradition in her household. Ben made food choices based on what he felt like eating and understood very little about fats, sugars, and the relationship between food and health. When his mother began suffering from type 2 diabetes, Ben knew he needed to learn more and make a change.

Although Ben loved to run and strength train and had been active most of his life, he began to experience hip pain that made physical activity more and more difficult. Benjamin went into the
program knowing he was going to have hip replacement surgery. In addition to preventing the onset of diabetes, he was determined to prepare his body for a seamless surgery and quick recovery.

**Individual outlook on importance of self-efficacy in performing new health behaviors.** Benjamin believes that confidence is a major influence in making changes to his personal health. The more information he had, the more control he felt he had over his food intake, his activity regimen, and his surroundings. Ben added that if you aren't confident you will fall prey to anything and begin to let your environment control you.

**Participant program experience and reported contributions to their perceived self-efficacy.** During the program, Benjamin became more aware of the food choices he was making through weekly tracking, became familiar with My Plate, and learned how to read food labels. He felt that the group support, the education, and the way the messages were delivered were very effective in building his confidence. He also enlisted a physical trainer at the YMCA to help him meet his fitness goals as he re-learned the importance of social support and engaging in safe weight training techniques. Benjamin claims that his eagerness and ability to share the content of the program with others helped increase his confidence in performing new behaviors learned in the program. Ben lost his mother to diabetes while he was in the program. Before her death, he felt good about sharing what he learned with her and how she might be able to make some changes. Following her death, the program served as a source of comfort, allowing him to better understand what had led to her severe illness and how he can make the choice to care for his body everyday and prevent that pain and suffering.

**Personal goals and achievements and perceived self-efficacy following program.** In addition to preparing for his surgery, Ben wanted to see his weight go down. He surpassed his personal goal by going from 210 pounds down to 170 during the 16 week program. Following the program, Benjamin was so confident in his ability to make healthy food choices and lead an active life that he was able to assist family and friends. Most of all, Ben learned how to say no to foods that
did not serve his body and breakdown the cycle of guilt when he used to eat it anyway. Over the past year, he has continued to track his food and is well prepared to say, "no, thank you" when he is offered a sweet, salty, or fried treat. He loves going to the gym where he has established a supportive social network. Benjamin feels his success was driven by his willingness to learn and his commitment to his own well-being. Because of the lifestyle changes Ben made, he was able to walk the day of his hip replacement and surprised his doctors when he went home just a couple days after his surgery.

**Participant Case Study - Interviewee 007 "Melissa"**

**Participant background and perceived self-efficacy prior to lifestyle modification program.** When Melissa signed up for the program, she didn't feel very confident about making healthy food choices but was longing to know more. She was raised on meat and potatoes and had not been taught to read nutrition labels or understand the relationship between food and health. Growing up on a farm, Melissa had always been physically active and still loved to go on walks but was not dedicated to routine physical activity.

**Individual outlook on importance of self-efficacy in performing new health behaviors.** Melissa feels strongly that confidence drives personal change and helps adopt new health behaviors. The new information the program exposed her to made her feel more in control and better equipped to care for herself and reach her health goals. She believes anybody can help themselves as long as they have that desire within.

**Participant program experience and reported contributions to their perceived self-efficacy.** Melissa favored the first half of the program where she learned about calories, fats, and sugars. She felt the weekly tracking was beneficial and seeing how many calories were in the foods she was eating was a big eye opener. She quickly made changes to her diet and gained the support of her husband at home in preparing healthy foods and going on evening walks. She also enjoyed
hearing about what worked for others in the program and knowing everyone could relate to her situation. Melissa commented that the second half of the program where the topics focused on the psychological, emotional, or social aspects of behavior change were not as interesting to her and she lost her momentum. She says she is no nonsense and if she knows what she needs to do, she will do it. She feels she manages her stress and takes charge of what's around her just fine but she could see how those classes would be beneficial for others.

During the program, Melissa was diagnosed with multiple sclerosis and found it difficult to exercise comfortably. She dedicated herself to Aqua Fit and Aqua Zumba classes in order to meet her physical needs as well as her fitness goals. She also found that she could ride the stationary bike at home as long as a fan was nearby.

**Personal goals and achievements and perceived self-efficacy following program.** Melissa knew she wanted to lower her weight and her blood sugar by making changes in the program. By the end of the program, she had not reached her goal weight but her blood glucose, cholesterol, and blood pressure had all improved greatly. She said the biometrics screenings before and after the program were great and helped her see how the changes she was making really made a difference in her health. This has helped her confidence in a big way as she knows she is capable of making good decisions and working toward her goals. Melissa feels her recent diagnosis with MS was the kick in the butt she needed to take better care of her body. She is currently tracking her food and loves looking up new healthy recipes to try. She is excited to continue improving her health and see her doctor to find out more good news. She admits that finding what works and something you enjoy is hard and while the process can be discouraging, it is well worth it in the end.

**Collective Case Study Analysis**

**Participant background and perceived self-efficacy prior to lifestyle modification program.** Participants shared their experience with eating well and being physically active in
addition to how confident they felt in improving their health prior to enrollment in the lifestyle modification program. All study participants reported moderate self-efficacy toward being regularly physically active prior to the start of the program. Some individuals (n=4) were not typically engaged in structured physical activity but said they liked to go on walks and made it a point to get up and move throughout the day. A few respondents (n=3), who were former athletes, had continued exercising but continued to deal with issues related to time management, motivation, or physical limitations.

The majority of respondents admitted to having low self-efficacy toward making healthy food decisions at the start of the program (n=5). These individuals reported feeling confused, discouraged, and concerned about their health but lacked the knowledge to make the necessary changes. Additionally, several respondents (n=4) reported they were completely unaware of the how food choices effected their health and rarely read nutrition labels.

One interviewee was able to say she felt very confident in making healthy food choices. Her motivation for being in the program was to reestablish a sense of accountability and camaraderie that she knew helped her maintain a healthy lifestyle.

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<thead>
<tr>
<th>Low Self-efficacy</th>
<th>Moderate Self-efficacy</th>
<th>Program Efficacy</th>
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<tbody>
<tr>
<td>Confused</td>
<td>Experienced Confidence</td>
<td>Confidence in Program</td>
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<td>Discouraged</td>
<td>Lacked Knowledge</td>
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<td>Lacked Motivation</td>
<td>Physical Pain</td>
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Figure 2. Characteristics of Participant Perceived Self-efficacy
One interviewee stated she had high confidence toward healthy eating, but attributed this to her confidence in the program. She believed the program would provide the information, support, and resources she needed to reach her health goals.

Family and disease prevention were two key motivators identified in the participants responses. All respondents made it clear that they were inspired to improve their health, not for vanity's sake, but to spend more time with grandchildren, to influence the health decisions of those they loved, and to end a family history of battling chronic disease:

- "All you are trying to do at this stage of life is be healthy so that you can live long enough to see your grandchildren graduate high school.";
- "I try to do the healthy things with the grandkids and try to teach them."
- "I recognized that I didn't want diabetes to impact my life the way it had impacted hers.".

These specific motivators are likely representative of the older adults, who accounted for the entire study sample. At this stage of life, individuals are having grandchildren, making decisions about retirement, becoming more aware of the health risks and physical limitations concerning themselves and others.

**Individual outlook on importance of self-efficacy in performing new health behaviors.**

All interviewees stated that self-efficacy is key to successful adoption of new health behaviors. Individuals who reported increased levels of self-efficacy say they have more control of their lives and surroundings. This sense of control is empowering and helps individuals prioritize health and overcome certain perceived barriers such as time management.

All respondents identified education as a major factor of self-efficacy in adopting new health behaviors. To them, knowledge is power. Education related to healthy food choices and the relationship between daily food and activity choices and total wellbeing were commonly mentioned as factor’s of self-efficacy and as factors of successful behavior change.
Respondents (n=7) also revealed that making lifestyle changes goes beyond self-efficacy and education. It is about being committed to bettering yourself, it is a desire you have to have within you. Where there is commitment there is great willpower as well as focus and persistence to work toward the ultimate goal of personal wellbeing.

**Participant program experience and reported contributions to their perceived self-efficacy.** Nutrition education and social support were the two most commonly reported contributors to participant confidence in making healthy food choices and being physically active. All interview respondents shared that learning about fats, sugars, food labels, and portion size was key in being able to make healthy foods decisions. The program's approach to personal nutrition as a means to build a healthy relationship with food and that healthier choices lead to a better life was a message that encouraged participants. Respondents who said they were visual learners credited in-class demonstrations and handouts to be the most effective in helping them learn what they needed to do to achieve their goals. In answering the questions, "What is healthy?" and "What should my plate look like?", the program was able to increase participant self-efficacy. According to respondents, the education received during the program was effective because of the clarity of the messages and the nonjudgmental environment in which conversation was facilitated.

Every interviewee stated that the social support, camaraderie, and acceptance they experienced in the program played a large part in boosting their confidence toward healthy decision making. The laughter, the shared learning, storytelling, and encouragement created a group dynamic that empowered participants and made them feel they were not alone on their path to wellbeing. The group dynamic also acted as a source of accountability to return and do your best each week. Additional sources of accountability reported included weekly weigh-ins, weekly food diaries, and activity or step trackers (i.e. pedometer, Fit Bit, My Fitness Pal).
Several interview participants added that there were factors outside of the program that improved their confidence toward making healthy decisions. For some it was establishing social support at home, work, or in the gym. This usually followed the realization that encouragement, acknowledgement, and competition influenced their ability to stay on track. For others, sharing what they had learned in the program with their family and co-workers helped them to gain confidence in their newfound knowledge and their ability to make health choices.

**Personal goals and achievements and perceived self-efficacy following program.** Six out of the seven interviewees reported they were successful in reaching their program goals. While diabetes prevention was the focus of the workplace-based health promotion program, participants said they joined the program to lose weight and planned to do it by making changes to their diet and increasing their physical activity. Respondents also listed improved biometrics and the adoption of a new mindset as key takeaways from the program.

Participants reported they had a high levels of confidence regarding healthy eating and being physically active following the completion of the program (n=7) and said they felt armed with the information they needed to make healthy decisions including how to read nutrition labels, knowledge
of portion control strategies, and knowledge of what foods are healthy. Many participants said they exceeded their goals and expectations and walked away with a new mindset and new habits they adopted during the 16-week period. Several interviewees noted that their confidence was high because the program allowed them to practice these new behaviors with added support; the program was a test drive, so to speak, before taking on the 'real world'. These participants knew that they were capable of performing the desired health behaviors because they had already proved to themselves that they could. Other participants experienced increased confidence because they found a wellness regimen or lifestyle that was enjoyable and sustainable. They stated that confidence is overlooking imperfection and doing your best time and time again. These individuals knew that if they continue on the same path they would continue to succeed.

One participant reported she was not able to reach the goals she set by the end of the program but her confidence toward making healthy food choices and being physically active was still very high. She stated that during the program there were many work, family, and community obligations competing for her attention and because of this she lacked commitment to the program and a willingness to make the desired behavior changes at that time.

Participant interviews were conducted February of 2016, ten months after three participants had completed the behavior change program in April 2015 and two months following the remaining four participants completion of the program at the beginning of December 2015. The time between participant's date of program completion and participation in study did not seem to affect levels of self-efficacy reported in participant interview though there may be moderating influences. Two participants who completed the program in April of 2015 stated they had either joined a monthly follow up group or signed up to retake the classes to maintain progress and support the lifestyle they had adopted during the program. Out of the participants who had recently finished the program in December of 2015, one had enrolled in the monthly follow up meetings and one continued her involvement with Weight Watchers.
Framework Analysis

The framework analysis, also referred to as a themes matrix, is presented in three sections representing the three research questions addressed in this study outlined in chapter one (see attached Appendices). In the following section of this chapter, I tabulate the frequency of each primary theme or factor of self-efficacy given by the study participants. It should be noted, that I do not offer a descriptive analysis of the primary and supporting themes presented in the framework analysis as any and all comments are consistent with those introduced in the participant case study analysis. All findings regarding participant self-reported rates of self-efficacy and program outcomes taken from the framework analysis are also consistent with those described in the case study analysis.

Exploring Contributions to Self-efficacy

Herein I provide the frequency of each primary theme identified in the framework analysis derived through participant responses. The occurrence of each theme represents the number of times a participant referred to a factor, or group of factors, they felt contributes to self-efficacy and successful behavior change during the seven interviews. The factors of self-efficacy are organized into one of five categories determined by type of role they play in workplace-based health promotion initiatives. Definitions and descriptions of the themes in this section are based on keywords and context provided in the participant interviews.

**Internal attitudes and traits.** The theme *commitment* was referred to seventeen times and was defined as having focus, having "stick-with-it-ness" or having persistence. *Discipline* was used four times to describe the act of dedicating yourself to a plan and following through because it is the right thing to do. *Responsibility* or sensing the duty to act was also mentioned once. *Motivation* was represented five times as an internal drive or willingness to act. The idea of *desire* occurred five times described as an inner longing for an envisioned outcome. *Balance* was brought up six times to describe an internal attribute, or state of being, that enables someone to act according to their needs
or desires as opposed to describing an outward circumstance. *Mindset*, mentioned six times, encompasses having "optimism," having an "upbeat personality," and having a positive attitude toward self-care behaviors and their outcomes.

**Learned skills and competencies.** *Knowledge* was the most commonly occurring theme used twenty-six times to describe information regarding nutrition, physical activity, and the relationship between those and your health that are necessary to make health-related behavior changes. *Experience*, mentioned ten times, refers to adherence, having familiarity with something, or the idea that "seeing is believing." The concept of *time management* was mentioned once.

*Accountability* was brought up four times to describe the state of having to answer to someone or something that makes a behavior more likely. I decided to categorize accountability as a learned skill as opposed to an internal quality due to participant explanations suggesting that you had to learn ways to keep yourself accountable such as tracking or planning ahead or by seeking out accountability by way of social support.

**Behavior change techniques and practices.** *Goal setting* was used four times to describe the process of identifying purpose and acting intentionally. *Keeping a food diary* was brought up ten times to describe...
times during the interviews as a tool to increase awareness or knowledge related to healthy food choices and as a source for accountability. *Weekly meetings* occurred once in the interviews; further clarification is needed to classify this theme as a source of accountability or social support. *Planning ahead* was mentioned once as any mental or physical preparations made to make desired behavior more likely. *Pedometers* were mentioned four times as a tool that allows you to work and see your progress toward your goal. *Visual cues* were accredited three times as a tool that assists in learning and remembering key messages.

**Health and value based interventions.** The following themes occurred in the context of reasons for participation or performance in health behaviors that influence self-efficacy. *Weight loss* was referred to five times; clarification is needed to discern whether desire for weight loss related to body image or concern for health or a combination. *Health indicators* such as blood pressure, blood sugar, and cholesterol were mentioned three times. The theme code, *value health*, was referenced four times to describe the state of caring about personal health outcomes or experiencing self-worth. The theme code, *value behavior*, referring to finding meaning or enjoyment in desired behavior occurred once.

**External advocates and barriers.** *Social support* was identified eight times within the participant interviews as camaraderie, the perception or feeling of being cared for or being a part of a supportive social network. *Stress* was used in a general sense to describe adverse or demanding circumstances three times. *Social cues* were referred to in three instances as verbal or physical suggestions to behave a certain way. *Emotional cues* were specifically addressed in one instance to describe a possible effect of stress that influenced self-efficacy toward healthy decision making. *Environmental cues* were referred to four times as someone's built environment or weather that influences self-efficacy toward desired behavior. *Physical cues* were mentioned three times to describe physical sensations or other observations such as pain or "feeling good" that influence self-efficacy. *Sugar addiction* was also brought up in one instance as a barrier to self-efficacy.
Summary

The following is a brief summary of the analysis provided within this chapter including demographic data, case study findings, and reoccurring themes identified in the framework analysis.

All of the study participants completed a 16-week diabetes prevention program focusing on healthy and sustainable lifestyle change. The seven interview participants who provided the content for this study were predominantly females over the age of 45 who identified as being Caucasian. One participant identified as male. One participant identified as being African American. All of the study participants had received some form of college or vocational training beyond high school, four with post graduate degrees or higher. There was no correlation made between participant reported self-efficacy and participant education.

All seven of the participants described a strong relationship between their self-efficacy toward health decision making and the ability to reach their health goals. Five respondents reported low self-efficacy and one person reported moderate self-efficacy when it came to making healthy food choices prior to participation in behavior change program. One participant reported program efficacy: she had confidence in the program itself as a means to reach her healthy eating goals. All seven participants reported having a moderate level of self-efficacy when it came to maintaining an active lifestyle prior to their participation in the program. Six of the seven participants reported they were successful in achieving the goals they set at the beginning of the program; one did not. All seven of the participants reported high self-efficacy in regards to their ability to continue working toward their health goals following the program. Interview respondents stated that the up-to-date health information provided in the program, regarding fats, sugars, food labels, portion size, what foods are healthy, and how many servings should be consumed from each food group, was key in being able to adopt healthy food habits.

Themes identified in the framework analysis were organized into five categories: internal attitudes and traits, learned skills and competencies, behavior change techniques and practices, health
and value based interventions, and external advocates and barriers. There were twenty-eight themes identified within the matrices that represented factors related to self-efficacy; the five most significant contributors based on participant responses were having knowledge, being committed, having experience, keeping a food diary, and having social support.

<table>
<thead>
<tr>
<th>Contributor</th>
<th>Frequency</th>
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<tbody>
<tr>
<td>Stress</td>
<td>3</td>
<td>B</td>
</tr>
<tr>
<td>Social Support</td>
<td>8</td>
<td>G</td>
</tr>
<tr>
<td>Social Cues</td>
<td>3</td>
<td>K</td>
</tr>
<tr>
<td>Emotional Cues</td>
<td>1</td>
<td>P</td>
</tr>
<tr>
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<td>3</td>
<td>A</td>
</tr>
<tr>
<td>Environmental Cues</td>
<td>4</td>
<td>U</td>
</tr>
<tr>
<td>Sugar Addiction</td>
<td>1</td>
<td>V</td>
</tr>
<tr>
<td>Desire for Weight Loss</td>
<td>5</td>
<td>D</td>
</tr>
<tr>
<td>Desire for Improved Health</td>
<td>3</td>
<td>C</td>
</tr>
<tr>
<td>Value Personal Health</td>
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<td>M</td>
</tr>
<tr>
<td>Value New Behavior</td>
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<td>K</td>
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<tr>
<td>Health Knowledge</td>
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<td>M</td>
</tr>
<tr>
<td>Accountability</td>
<td>4</td>
<td>B</td>
</tr>
<tr>
<td>Time Management</td>
<td>1</td>
<td>D</td>
</tr>
</tbody>
</table>

Figure 5. Frequency of Recorded Themes
Chapter Five: Discussion

The purpose of this study was to explore self-efficacy as a factor in planned behavior change within a workplace-based health promotion program designed to prevent diabetes and instill sustainable behavior change through measured weight loss, nutrition education, assigned food diaries, increased physical activity, and group discussion.

The seven interviews captured the personal experiences and relationships the program participants felt influenced their confidence toward making healthy decisions in addition to the self-discovery, education, and practical tools they suggest build confidence toward eating healthy and being physically active. The graphic elicitation exercise assisted in the interview process by bringing the topic of study to the forefront of the interviewee's mind and stimulating thoughtful responses to the scripted questions. As a research tool, the graphic elicitation activity was successful in bringing about clarity of thought and served as a strong warm up to the participant interviews, adding to the quality of the participant responses and strength of the interviews as a method of gathering data.

As the researcher, I feel confident in my ability to gain a clear depiction of each participant's program experience and personal journey toward improving their well-being. The roles I assumed as the program facilitator, interviewer, and researcher added value to this study as I had already established familiarity and credibility with the study participants prior to the interview process in addition to having a comprehensive understanding of the structure, content, and resources provided in the 16-week program. An important disadvantage to my role as both the program facilitator and the researcher exists in regards to gathering valuable data for evaluating the presentation of the program in question. Interview questions that sought participant recommendations for future programming or comments about the role of the instructor may have been answered differently. All other dialogue from the interviewees was uninhibited as I was able to understand or recall references made regarding specific group exercises and conversations. My observation and prolonged
engagement with each participant also assisted in the formation of each participant case study, the collective case study analysis, and interpretation of the framework analysis all used to dissect and give meaning to the data.

The themes that emerged from the participant interviews regarding contributors to self-efficacy reflect characteristics of a small primarily female population above the age of 45. All of the study participants completed a 16-week employee-sponsored behavior change program, in which they set personal health-related goals and were exposed to information and support to help them achieve those goals. During the study, each participant gave a distinct account of their program experience based on their individual needs, interests, perceived barriers, background, and learning style. The participant's demonstrated how the class influenced their self-efficacy toward healthy decision making and their ability to reach their goals.

This chapter contains a discussion of the significance of the themes defined in this study as they relate to:

1. How participants who have completed an employer-sponsored diabetes prevention program describe and explain the new skills and practices learned and behaviors developed during the program,

2. Which skills and practices participants view as being the strongest contributors to their perception of self-efficacy related to performing their new behaviors, and

3. How participants recommend the new knowledge and skills be included in future lifestyle modification programs.

The learning and development that took place during the program was described by each study participant as they experienced it. Depending on their needs and their existing knowledge and skill set going into the program, participants weighted various aspects of the program differently as they applied to him or her. Knowledge was a main topic in all participant interviews. Concepts
adopted by study participants were influenced by information presented on fat and sugar, portion size, healthy food choices, healthy food substitutes, how to make healthy decisions, and the relationship between food and health. Four of the seven respondents reported they were visual learners and claimed having visual tools such diagrams, PowerPoint slides, handouts, and the creation of vision boards were especially helpful in the discovery and learning process. The My Plate image was referenced by several participants as a useful tool for practicing portion size and increasing intake of fruits and vegetables. While all participants emphasized the key role knowledge had in developing awareness toward making health food choices and being physically active, each stated it was up to them to use that information and make healthy choices outside of the program. During the program, weekly meetings and weigh-ins served as a source of accountability for some participants while some participants expressed that they kept themselves accountable through being disciplined. Participants described practicing self-disciplined as engaging in self-talk and feeling like you are in control of your decisions.

Real world problem solving and practical devices reported by study participants include how to respond to slips, how to plan ahead, setting smart goals, having accountability, keeping a food diary, and using a pedometer. While all participants associated these tools and practices with their ability to reach their health goals, many claimed it was their commitment, discipline, motivation, or mindset developed during the program that enabled them to reach their goals. Participants also reported that peer support, camaraderie, and feeling like you're not alone were helpful in adopting new behaviors. There were no comments made specific to the knowledge provided about physical activity but many described a process of finding what type of physical activity was enjoyable for them and how they fit it in their schedule so that their new behavior was sustainable.

The strongest contributors to participant self-efficacy related to performing new health behaviors were considered to be the contributors identified in the framework analysis that occurred with the greatest frequency. Study respondents revealed which factors they felt were significant
developing their confidence or the confidence of their peers in performing new health behaviors. The most common contributors to self-efficacy identified in this study were knowledge, being committed, having experience, keeping a food diary, and having social support. Knowledge was considered a necessary component of successful behavior change as participants felt you had to know what to do before you could do it. For many participants, knowledge translated into confidence. The more information the participant had the more equipped he or she felt to make healthy decisions and to help inform their loved ones about the importance of healthy behaviors.

Commitment was acknowledged as an abstract personal quality that participants felt enables people to focus in on a goal and repeatedly do what it takes to achieve that goal. Many ideas were shared about what factors influenced or were associated with an individual's ability to be committed included self-efficacy, motivation, desire, and self-discipline. Several respondents felt that being committed was something you were inherently good at while others felt the person had to be moved to act. Based on this study alone, commitment and self-efficacy seem to work together to enhance behavior change but it is not clear how.

Experience was a common contributor to self-efficacy; participants reported that practicing their new behaviors, getting used to a new routine or movement, seeing changes in weight or biometric indicators, or simply feeling or looking better increased their self-efficacy toward their new health behavior over time. Adherence to the program was often given as a factor of self-efficacy as it presented the opportunity for participants to practice their new behaviors in a protected environment allowing individuals to gain confidence toward eating healthy and being physically active before going it alone.

Keeping a food diary was mentioned as a contributor to participant self-efficacy toward making healthy food choices ten times by five of the seven interviewees. One interviewee stated that they lacked commitment to log their food intake among other practices recommended in the program and was not successful in reaching their program goals. The other respondent who did not complete a
food diary stated she was able to reach her program goals but felt participants who tracked their food had greater or more effortless success. Keeping a food diary was said to help increase awareness of existing habits, and increase knowledge related to healthy food choices. Additionally, many participants felt keeping a food diary that was turned into a coach each week served as a source of accountability.

In regards to the program, social support was defined as a sense of camaraderie or being a part of a supportive social network. The relationships formed in the classroom were said to enhance the participant's program experience and impart a sort of collective confidence founded on the notion that we are all in this together. In general, social support was described as the perception or feeling of being cared for or about. Social support was thought to minimize the occurrence or affect of social cues and increase confidence in performing health behaviors in social environments. Some participants chose to surround themselves with family or friends that supported their new behaviors, challenged them, or kept them accountable. Other participants discovered an ability to voice their needs and gain support when needed.

Participants made recommendations for how future programs should provide activities, tools, and resources to help increase participant confidence in eating well or being physically active. All study participants felt the program design consisting of weekly weigh-ins, turning in weekly food and activity trackers, and participating in group learning and discussion were all crucial components of healthy behavior change. Participants reported that the use of simplified diagrams and other visual cues, such as My Plate, portion size comparisons, and food labels, were especially beneficial during the learning and behavior change process. Demonstrations and simplified handouts with key takeaways were recommended by participants to provide clarification and build self-efficacy.

Several participants noted having access to a registered dietitian as an employee of the university improved their confidence toward making healthy decisions. In addition, being offered a dietitian-led grocery store tour following the nutrition education portion of the program to help
practice reading food labels, visualize portion size, and shop for a healthier diet. Based on participant responses, the program should continue to emphasize the relationship between food choices and overall health including providing firsthand information on type two diabetes so participants can better understand what they are working to prevent. Finally, participants who did not keep a food diary during the program recommended the program facilitator modify the way tracking is presented in the program to increase participant use of food diary and fitness trackers. The participant suggested to create more accountability around handing in a weekly food diary and providing more direct support in learning how to use tools like My Fitness Pal and Fit Bit in order to increase participant confidence in tracking physical activity and food intake.

The majority of contributors to participant self-efficacy toward performing new health behaviors revealed in this study are consistent with those identified in the largely quantitative research summarized in the literature review. Factors of self-efficacy introduced in the literature review and supported in this study include valuing personal wellbeing, health literacy or knowledge of healthy foods and behaviors and their influence on health, social support, goal setting and having an action plan. The established research also recognized optimistic outlook, program efficacy, self-care experience, and perceived barriers (e.g. time management, physical discomfort, social cues). Participant experience or practice using their new behaviors was said to increase their confidence because they knew they had been successful before. While perceived barriers were reported by each participant interviewed, time management was only listed once and this occurrence coincided with the only instance of poor program outcomes and lack of commitment. This study strengthens the idea that increased self-efficacy improves successful adoption on healthy behavior change and increased self-efficacy reduces the effect of perceived barriers.

The results of this study did diverge from the reviewed literature and is likely linked to the qualitative nature of this study and influenced by the demographics of the study sample. A person's level of commitment was a significant factor of self-efficacy given by study participants as it was a
thought to be a key factor in adherence to new health behaviors. The results of this study suggest that high self-efficacy is associated with feelings of being committed and affirm that confidence toward eating healthy and being physically active are greatly influenced by adherence and social support.

Additional factors of self-efficacy discussed in this study that were not directly addressed in the established literature include tracking food and activity, social and cultural cues, stress and emotional cues, and valuing new behavior. Sources of accountability and social support were mentioned throughout participant interviews in relation to overcoming social and emotional cues. Participants acknowledged tracking food intake and minutes of physical activity were helpful in creating an awareness of existing eating behaviors and monitoring progress toward health goals. Some participants stated that tracking during the program provided accountability because they knew someone else would see what they ate. Similarly, having family, friends, or coworkers that encouraged or challenged participants to make healthy decisions played a significant role in participant reported self-efficacy.

Previous research identifies valuing health and wellbeing and discusses the role of the individual's perception of the new behavior in successful behavior change. The interviews in this study emphasized the participants assigned value or enjoyment of new behaviors as way to clarify the theoretical concepts represented in the reviewed literature and Bandura's Health Belief Model. Participants who found healthy foods that they enjoyed eating and a form of physical activity that was comfortable and matched their interests were able to reach their health goals. Additionally, if a participant assigned value to eating well or being physically active because of the perceived benefits and meaningful rituals associated with those behaviors, he or she was able to achieve their health goals and feel confident in continuing to perform their new health behaviors.

The contributors to self-efficacy identified in this study and the values held by study participants reflect that of an older adult population, characterized by slowing down the effects of aging to spend more time with family and learning how to put oneself first and make health a
priority. Participant's motivation to end a family history of battling chronic disease and wanting to extend their quality of life aligns with Bandura's Health Belief Model discussed in the literature review; the participants perceived seriousness, perceived susceptibility, perceived benefits, and perceived barriers of disease prevention and living a long healthy life. These considerations would not have been as prevalent within a younger population. The variance in factors of self-efficacy reported among individuals in this and previous studies presents a strong argument for tailored program content and interactions in order to create meaningful experiences that build self-efficacy.

**Implications of the Research**

The findings discussed in this study are valuable to health and wellness practitioners as well as employers who struggle to guide employees through meaningful and sustainable behavior change. Improving intervention outcomes through the use of tailored content and the provisions of social support provides the potential for a healthier working population and improved business outcomes. The themes identified in the framework analysis were presented within distinct categories based on how they reportedly influenced self-efficacy toward healthy behavior change. Four of the top five contributors to self-efficacy recognized in this study underpin a different layer of influence, showing further support for my recommendation that in order to build participant self-efficacy toward performing desired health behaviors, program facilitator's must take a comprehensive approach in order to address the complexity of the human psyche. Health and wellness professionals should consider designing behavior change programs that mirror the five categories or layers of influence represented in Figure 6. Such programs would seek to develop internal attitudes and traits, teach skills and competencies, utilize effective behavior change techniques and practices, promote health and value based interventions, and coach participants concerning external advocates and barriers.
The cultural norms established in the United States related to diet and exercise pose a considerable challenge to participants working to adopt new lifestyle behaviors to improve their wellbeing. Individuals must be coached on how to respond to social and environmental cues in order to improve confidence in taking charge of their surroundings. This includes topics that make performing new behaviors more likely such as planning ahead, healthy dining out, and communicating personal needs. In addition to individual and group coaching, participants should be advised to create or strengthen their social network to help support their new health behaviors and stay focused on their health goals. Social support provided within behavior change programs through group sharing and interaction allows participants to see that their current behavior is shared by others and that they are not alone in wanting to make changes to their lifestyle. Programs that provide group support also give participants the opportunity to hear other participants' stories from about how they found what worked for them and what they enjoy most about their new behavior or subsequent achievements.

It is apparent, based on this and other studies, that in order to empower someone to take charge of their wellbeing the person must first value their wellbeing or the desired result as well as the new health behavior. This requires a process of self-discovery and a focus on the individual's core strengths, core values, and interests. Individual goal setting and creating a vision for our personal wellbeing is also vital in developing meaning and motivation for performing new health behaviors. Participants who reported successful behavior change stated it was a matter of finding what matters to them, what behaviors align with their current value system, and what healthy foods and activities
they enjoy. The concept of ritualizing a behavior so that it builds self-compassion was discussed in the program as an alternative to conforming to a new behavior due to a sense of responsibility or self-discipline.

Techniques and practices traditionally used in the context of healthy behavior change that were supported in this study include education, goal setting, problem solving, and group support. The use of food diaries and activity trackers were also featured in this study as contributors to self-efficacy. Participants felt that food diaries served to increase awareness of existing habits, offer accountability, and track progress; respondents who tracked nutrition content stated they retained a lot of information about calorie, fat, sugar, or fiber content of foods they ate which helped build confidence in making healthy decisions. Pedometers and other wearable tracking devices were said to increase awareness and serve as a physical reminder in addition to providing healthy competition which motivated some participants.

The contents of this study also suggest an increased emphasis on participant self-discovery and reflection as a way to strengthen the individuals sense of purpose and meaning as well as social connectedness. During the program, I observed inconsistent or lack of self-care influenced by participants' feelings of low self-worth, exacerbated by failed attempts to make positive changes in their health. A lack of commitment to the behavior change process was also observed as result of participants' tendency to overexert themselves at work or by giving time to family, friends, or community and considering their wellness needs. The immediate gratification from helping others or pleasing others often outweighed the perceived benefit of practicing their new health behaviors. As a coach and researcher, I propose this phenomenon is influenced by feelings of unworthiness of one's desired vision. For certain individuals, keeping busy offers the illusion of control and power when the individual lacks those qualities when it comes to making changes to improve their health. Topics on shame resilience, self-love, stress management, and responding to slips provided opportunity for personal discovery and improvements in participant attitude and outlook were observed.
In addition to teaching participants how to take control of their health and set personal goals, the research shows us that self-efficacy stems from knowing what you need to do and knowing that you can do it. Skills and knowledge regarding what healthy choices are, proper portion size, and the relationship between food choices and overall health were given ample credit for increasing participant self-efficacy. Participants desired to understand the reasons why they should adopt new behaviors whether it was to prevent disease, have more energy, lose weight, or give them longevity. As a program facilitator, I found that participants were hungry for biological, dietetic, and psychological explanations for the topics introduced but needed to have them delivered in layman's terms. While it is important to simplify key messages to direct participant actions, explanations for why it is important to engage in healthy behaviors or how our bodies and minds work should not be dismissed. When introducing new information, participants brought up the importance of teaching methods that matched their style of learning. Four of the seven participants in this study stated they were visual learners and the visual aids were a main take away from the program. While not a focus of this study, participants suggested using varied teaching methods to auditory, verbal, tactile, visual; this could be accomplished through lecture, group discussion, being encouraged to share new information with coworkers, family, and friends, providing visual aids and handouts, and performing demonstrations and hands on activities.

A significant observation was made regarding barriers to commitment during the program and study. Participants who lacked a sense of commitment often experienced difficulties in fitting new behaviors into existing lifestyle and often reported issues with time management. Participants who reported being committed to the behavior change process or described other individuals they felt were committed described how adopting a new identity and creating a new lifestyle makes performing new health behaviors effortless and meaningful.

In addition to creating a new identity as someone who makes healthy food choices and is physically active, participants found that living that new identity led to greater confidence in
performing health behaviors. One of the top contributors to self-efficacy identified in this study was experience, described by study participants as adherence, having familiarity, or seeing or feeling results. Program facilitators should emphasize tracking results, identifying progress, and giving verbal praise to help bring about the realization that the participant's learning and new behaviors are responsible for his or her success. This association also tells us that time plays an important role in building self-efficacy toward adopting new health behaviors and with this confidence becomes fewer perceived barriers and increased perceived behavioral control.

**Summary of Implications**

Employers, program facilitators, and wellness professionals should consider the skills and practices that build self-efficacy when implementing effective employee-sponsored health promotion programs designed to empower participants to care for their wellbeing. Study participants identified their strongest contributors to self-efficacy related to making healthy food choices and being physically active, namely knowledge, being committed, having experience, keeping a food diary, and having social support. These and other important factors of self-efficacy reported by study participants can be used by program facilitators and coaches to develop internal attitudes and traits, teach skills and competencies, and employ effective behavior change techniques and practices within health and value based interventions. Participants should be immersed in group learning and sharing and be coached on the importance of social support and how to navigate external advocates and overcome barriers.

Programs should be tailored to promote self-discovery and teach self-compassion as way to help participants find meaning and motivation. Behavior change programs should focus on directing participant behavior by presenting what they need to do to be healthy and why through simplified key messages, visual cues, and interactive demonstrations. Participants should be provided coaching, opportunities to practice, and positive feedback to help overcome barriers to change and be
encouraged to use tracking tools, create accountability, and seek social support. It's about creating a new identity and choosing behaviors that align with your vision for your future self.

**Recommendations for Future Research**

The contributors to self-efficacy identified in this study strengthen existing research and provide new insights into developing self-efficacy that should continue to be explored. Workplace wellness is a steadily growing industry put in place to address the high prevalence of chronic disease, improve wellbeing and performance in the workplace, and reduce costs associated with group health plans. Wellness professionals and employers are in need of continued research that uncovers the factors that influence individual self-efficacy related to making healthy food choices and engaging in routine physical activity. In doing so, employee-sponsored health programs that seek to ignite employee participation, empowerment, and subsequent behavior change can achieve these objectives through cost effective means.

The existing literature related to self-efficacy and behavior change is primarily quantitative and does not help us understand how to bring about successful program outcomes, only what correlations can be made. More qualitative research is needed to help employers and wellness managers understand how to empower participants, how to teach participants, and how to communicate and deliver what is truly valuable to participants. Information is also needed to help us understand why individuals are motivated to adopt new health behaviors to develop meaningful behavior changes programs.

Through this and other cases of research, it is evident which skills and practices contribute to self-efficacy and what self-efficacy means for behavior change outcomes. Future qualitative research should shed more light on what motivates participants, how they learn, and what they value. Qualitative research gives people a voice and is the key to discovering effective intervention strategies that build self-efficacy and empower individuals to take control of their wellbeing.
Interviews and focus groups allow qualitative researchers to hear the stories of how individuals are successful in adopting new behaviors and why individuals lack motivation and commitment to the behavior change process. Participant feedback regarding the relationship between self-worth and valuing personal wellbeing could help program facilitators address internal perceptions and develop self-compassion and self-efficacy that lead to behavior change.

There is a need to explore sources of accountability, both internal and external, as accountability may help increase adherence and build self-efficacy making behavior change more likely. Qualitative researchers could also examine the connection between personality types and levels of commitment to performing new health behaviors to help employers and coaches interact effectively with program participants and improve program adherence and outcomes.

As a wellness professional and researcher, I recommend we continue to search for new and best practices to educate and support participants in employee-sponsored health promotion programs while adopting a wholehearted focus on finding meaning and purpose, developing core values and strengths, and creating opportunities for human connection.
References


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Dickson, V. V., Buck, H., & Riegel, B. (2011). A Qualitative Meta Analysis of Heart Failure Self-Care Practices Among Individuals with Multiple Comorbid Conditions. *Journal of Cardiac Failure*, 17(5), 413–419. http://doi.org/10.1038/2091178c0


Appendices
Appendix A: Researcher Interview Guide
Researcher Interview Guide: Self-efficacy to Eat Well and Be Active

Graphic Elicitation Activity: On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program. Narrate your illustrations to the best of your ability.

1a. Think back to when you signed up for the Live Well Diabetes Prevention Program at Ball State. At that point in time, tell me about your confidence level in making healthy food choices?

1b. What personality traits or skills do you think are necessary to maintain a healthful diet? Think of a person who you feel makes healthy food choices on a regular basis. Describe their personality.

2a. At that point in time, how confident were you in maintaining an active lifestyle?

2b. What personality traits or skills do you think are necessary to maintain an active lifestyle? Think of a person who you feel leads an active lifestyle. Describe their personality.

3. How do you think your confidence toward making healthy decisions influences your ability to reach your health goals?

4a. What personal goals did you set at the beginning of the program?

4b. How successful were you in achieving those goals? Why do you think that is the case?

5. If you did not reach your goal, how confident are you in your ability to continue working toward a healthier you?
6. What do you think other participants would say impact their confidence in their ability to reach their health goals?

7a. What factors, do you feel, improve a person's confidence in eating well?

7b. What factors would you say build a person's confidence in being physically active?

8a. What activities, tools, or resources provided in the program helped increased your confidence in eating well or being active?

8b. Are there an activities, tools, or resources you feel should be introduced to improve the program?
Appendix B: Participant Graphic Elicitations
EXPLORING SELF-EFFICACY AS A FACTOR IN PLANNED BEHAVIOR CHANGE
FOR WORKPLACE-BASED HEALTH PROMOTION INITIATIVES

On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program.

stuck in a rut
frustrated
defeated

enlightened
encouraged

better informed
attention to detail
EXPLORING SELF-EFFICACY AS A FACTOR IN PLANNED BEHAVIOR CHANGE
FOR WORKPLACE-BASED HEALTH PROMOTION INITIATIVES

On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program.
EXPLORING SELF-EFFICACY AS A FACTOR IN PLANNED BEHAVIOR CHANGE 
FOR WORKPLACE-BASED HEALTH PROMOTION INITIATIVES

On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program.

Never really worried about what I ate.

Started watching things I ate.

Read labels a lot more now.
EXPLORING SELF-EFFICACY AS A FACTOR IN PLANNED BEHAVIOR CHANGE
FOR WORKPLACE-BASED HEALTH PROMOTION INITIATIVES

On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program.

lack of motivation

confusion
enlightening
other factors impacting

more confidence
have a plan
focus on health
EXPLORING SELF-EFFICACY AS A FACTOR IN PLANNED BEHAVIOR CHANGE
FOR WORKPLACE-BASED HEALTH PROMOTION INITIATIVES

On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program.

Confidence level - low: I made random choices, which often were not healthy choices.

During the program, I became more aware of items such as fats, sugars, calories, and how to read food labels. My confidence grew at this point.

After completing the program, I felt quite confident, to the point where I could assist friends and family with making healthy choices.
No concept of calories, fats, etc & the effect. Only watched carbs due to pre-diabetes but didn't do a great job of that.

Learned about fats, calorie content, sugars.

Started using MyFitnessPal, FitBit, and making better decisions due to suggestions of what I had learned in program.

Also began to incorporate fitness.

Have since purchased a new bicycle, a new recumbent bike, and joined aqua zumba & aqua lift.

Still using FitBit & MyFitnessPal which keep me on track.

Was pleasantly surprised at end of program. Now all of my numbers had improved greatly.
On the piece of paper provided, create three illustrations that you feel best represent your confidence in eating well and being physically active before, during, and after your participation in the Live Well Diabetes Prevention Program.

- h2o
- carbs
- 10 lb

Learning

A
B
C

+ veggies

- 0
Appendix C: Framework Analysis
Section 1. Table 1-6. How do participants who have completed an employer-sponsored diabetes prevention program describe and explain the new skills and practices learned and behaviors developed during the program?

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>Direct Quotations</th>
<th>Theme Code</th>
<th>Supporting Theme(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Think back to when you signed up for the Live Well Diabetes Prevention Program at Ball State. At that point in time, tell me about your confidence level in making healthy food choices?</td>
<td>&quot;I had confidence in the regimen, in the learning, and the accountability the program provided that I would succeed.&quot;</td>
<td>Knowledge, Accountability, Program Efficacy</td>
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<td></td>
<td>&quot;Basically before I was stuck in a rut. I couldn't get my weight to move. I got frustrated. I felt defeated. It was not good. I just wanted to learn how to eat better.&quot;</td>
<td>Knowledge, Low Self-efficacy</td>
<td>Program Efficacy</td>
</tr>
<tr>
<td></td>
<td>&quot;I was just confused. I needed it in layman's terms, from my perspective and understand it.&quot;</td>
<td>Knowledge, Low Self-efficacy</td>
<td>Program Efficacy</td>
</tr>
<tr>
<td></td>
<td>&quot;Whatever I wanted, I ate. I never really thought that it was doing any damage to my health so I just carried on doing basically whatever I wanted.&quot;</td>
<td>Knowledge, Low Self-efficacy</td>
<td>Program Efficacy</td>
</tr>
<tr>
<td></td>
<td>&quot;I think I felt very confident in my knowledge to choose healthy foods but I was lacking motivation in doing that. That is really why I signed up.&quot;</td>
<td>Motivation, Moderate Self-efficacy</td>
<td></td>
</tr>
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<td></td>
<td>&quot;My confidence level was low. I would just make choices pretty much based on what I felt like eating that particular day.&quot;</td>
<td>Knowledge, Low Self-efficacy</td>
<td>Program Efficacy</td>
</tr>
<tr>
<td></td>
<td>&quot;Not very confident. Sometimes I think I made choices I thought were good but maybe they weren't. I just ate whatever sounded good… &quot;</td>
<td>Knowledge, Low Self-efficacy</td>
<td>Program Efficacy</td>
</tr>
</tbody>
</table>

| At that point in time, how confident were you in maintaining an active lifestyle? | "I ran a half-marathon 3 years ago and physical activity has always been a part of my life but not routine."                                                                                             | Experience, Moderate Self-efficacy |                                   |
|                                                                             | "[I was] active 10-15 minutes a day, if that. It was just moving around in general."                                                                                                                   | Environmental Cues, Moderate Self-efficacy |                                   |
|                                                                             | "I would say my strength was that I knew I needed the exercise."                                                                                                                                      | Knowledge, Moderate Self-efficacy  |                                   |
|                                                                             | "So I still kept myself active but again not a member of a club or anything. But again it was personal preference. I like to walk."                                                                          | Environmental Cues, Moderate Self-efficacy |                                   |
|                                                                             | "I have been what I would say is moderately active, always. I love to walk. I did a lot of walking but before the program started I had gotten really busy…"                                                    | Time, Management, Moderate Self-efficacy |                                   |
|                                                                             | "All of my life I have been in to training and activity but with the hip pain it just became increasingly more difficult for me to do it."                                                              | Physical Cues, Experience, Moderate Self-efficacy |                                   |
|                                                                             | "I knew it was important to and I was doing a little bit. I did some walking in te summer but winter time would be my down time where I didn't do as much."                                             | Environmental Cues, Moderate Self-efficacy |                                   |
| How do you think your confidence toward making healthy decisions influences your ability to reach your health goals? | "I would say they related very well. But I have the confidence but I didn't achieve...In my situation I don't think it's about confidence. I think it's about commitment." | Commitment | Strong Relationship |
| | "Confidence is everything. That is exactly why I am able to get back up, dust myself off and go for it again because I know I can. Going through the class showed me that I can." | Mindset | Strong Relationship |
| | "My confidence level was higher when I was participating. Now it is all up to me. It's in my ball field and I know I can't get lazy and I don't want to be lazy. It's all up to me. It's my choices." | Responsibility | Strong Relationship |
| | "I think it does. I mean taking charge of your life even in this late stage of my life has made a huge difference…I mean it has changed me and made me want to stay fit and healthy." | Motivation | Strong Relationship |
| | "Oh I think it is critical. I mean if you don't feel that you can do it, I don't think you are ever going to reach your goal." | Mindset | Strong Relationship |
| | "It influences them greatly. The more confident I feel the better I am about making the changes to improve my health…it makes me feel like I can do that and make a healthy choice." | Mindset | Strong Relationship |
| | "Yeah. It was a change in mindset." | Mindset | Strong Relationship |

| What personal goals did you set at the beginning of the program? | "I wanted to drink more water, eat less carbs… I wanted to fit into a skirt that I had fifteen years ago." | Weight Loss |
| | "It was to see if I could lose weight and learn how to eat healthy." | Weight Loss Knowledge |
| | "Well my personal goal was to get my cholesterol level down, which I did… I had to bring my stress level down. That was my goal." | Health Indicator Stress |
| | "Well the idea was to lose some of the weight and a lot of it." | Weight Loss |
| | "To me if I can get to a point where I feel comfortable and I feel like I am healthy, my numbers are good, I am exercising and I am eating right. That is my goal." | Physical Cues |
| | "I also wanted to set a weight loss goal. When I went in to the program it was like 6 or 7 percent… My other goal was just to learn more information so that I could help myself and others." | Weight Loss Knowledge |
| | "It was primarily to get my blood sugar A1C down and to lose some weight… I didn't have a specific goal in mind I just wanted to see something happen." | Health Indicator Weight Loss |
| How successful were you in achieving those goals? Why do you think that is the case? | "I didn't achieve… But again, I would not say that I am not confident that I can do it, I just haven't been committed… my life commitments had to be redirected… to alleviate mental stress." | Commitment | Not Successful |
| | "I met my goal… It was the class. It motivated me, gave me goals and supported me so I could see that I could make those goals." | Goal Setting Social Support | Successful |
| | "I did… just knowing that I had set myself a goal. My Fitness Pal works wonderfully… you don't realize how much crap you put in your mouth." | Food Diary Goal Setting | Successful |
| | "I was about 197… I have managed to keep my weight down to the 180 mark…I think it's a mindset. I think you have to want something bad enough to make it work." | Commitment | Successful |
| | "I lost 10 pounds in the program… I think it was a combination of getting some accountability, getting back on track, doing the exercise more regularly." | Food Diary Goal Setting | Successful |
| | "Yes… I was 210 pounds and I set a goal of 170… I think that if we are malleable and willing to make changes that it can happen." | Commitment | Successful |
| | "I was very successful… I think I gained the tools that I need to keep myself on track and just motivating myself to make sure I do it… it is a matter of finding what works." | Commitment Food Diary | Successful |

| How confident are you in your ability to continue working toward a healthier you? | "Very confident." | - | High Self-efficacy |
| | "Well I fell off in December but I am getting back on and I know I can." | - | High Self-efficacy |
| | "Oh yeah." | - | High Self-efficacy |
| | "Absolutely." | - | High Self-efficacy |
| | "Yeah and again, some days and weeks are better than other but one of the things is recognizing that accountability really helps me." | Accountability | High Self-efficacy |
| | "I have lots of confidence in myself with the information that I have." | Knowledge | High Self-efficacy |
| | "Absolutely… I went from having no concept to feeling like I was really taking care of business." | - | High Self-efficacy |
Section 2. Table 7-11. Which skills and practices do participants view as being the strongest contributors to their perception of self-efficacy related to performing their new behaviors?

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>Direct Quotations</th>
<th>Theme Code</th>
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</thead>
<tbody>
<tr>
<td>What personality traits or skills do you think are necessary to maintain a healthful diet? Think of a person who you feel makes healthy food choices on a regular basis. Describe their personality.</td>
<td>&quot;His is probably motivated more by 'your body is a temple, your body is a gift from God, and what you feed it’… People who can follow habits, commitment, dedication, those kind of personality traits.&quot;</td>
<td>Value Health Commitment</td>
</tr>
<tr>
<td></td>
<td>&quot;Positive. Uplifting. Self-assured. Good body image. They seem to be able to know exactly the right amount of foods, what they can and cannot do, and they have stick-with-it-ness.&quot;</td>
<td>Mindset Knowledge Commitment</td>
</tr>
<tr>
<td></td>
<td>&quot;I think they have to have a knowledge base. They just can't willingly do whatever…. They are motivated. They want to make a change.&quot;</td>
<td>Knowledge Motivation Desire</td>
</tr>
<tr>
<td></td>
<td>&quot;I think a lot of people, here anyway, you have to see it to believe it. It's one things to say, 'well read that label.' But, if it's not really attached to anything then people don't.&quot;</td>
<td>Experience</td>
</tr>
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<td></td>
<td>&quot;Something who is focused on their health and recognizing that what they put in is going to have an impact on how healthy they are… someone who is mindful and conscious all the time that they want to make the best choices to be the healthiest person they can be.&quot;</td>
<td>Commitment Value Health Desire</td>
</tr>
<tr>
<td></td>
<td>&quot;I think they definitely have to be a focused person and be disciplined. You have to be willing to want to learn… You also have to be, not aggressive but assertive in saying, 'this is what I want for my life, my body, my health.&quot;</td>
<td>Discipline Commitment Value Health Desire</td>
</tr>
<tr>
<td></td>
<td>&quot;I think they have to be a motivated person and you have to be internally strong. Yeah and I think it helps if you have a more upbeat personality… a positive outlook… I think anyone can do it but you have to have that desire within yourself.&quot;</td>
<td>Motivation Commitment Mindset Desire</td>
</tr>
</tbody>
</table>
| What personality traits or skills do you think are necessary to maintain an active lifestyle? Think of a person who you feel leads an active lifestyle. Describe their personality. | "It all comes down to commitment and desire to live a good life."

"People I see physically fit and balanced is there focused on their health and balancing between being active and staying active with other parts of their life."

"I think it is similar to healthy eating... I am forcing myself, even though it's cold out I know I have to walk instead of taking a bus."

"Well winter comes along and it's like, 'I will be active in the spring, so I can just sit and do something. I can become a couch potato.'"

"Persistence, not allowing other things that are also important to get in the way when you want or when you have planned to do your exercise or being flexible so if it is not working out at a time you had planned it, you don't just give up."

"With the discipline, I elicited the help of a trainer... yeah that support is key and it is important to have, if you can, a training partner even if informally."

"You really have to be driven to get that into your day and make time to exercise ad figure out how you are going to do it without it being a problem." | Commitment
Desire
Commitment
Balance
Commitment
Balance
Environmental
Cues
Commitment
Balance
Discipline
Motivation
Commitment |
<table>
<thead>
<tr>
<th>What do you think other participants would say impact their confidence in their ability to reach their health goals?</th>
<th>Knowledge Social Support</th>
</tr>
</thead>
<tbody>
<tr>
<td>&quot;I would have to think its knowledge.. Or going back to the peer mentors, people that they hang around with.&quot;</td>
<td>Knowledge Social Support</td>
</tr>
<tr>
<td>&quot;By sharing our experiences we were able to help make suggestions and support one another… so that we could incorporate these good things into our lives and make it part of our lifestyle.&quot;</td>
<td>Social Support</td>
</tr>
<tr>
<td>&quot;Well just talking to [one of the participants], she was encouraged by her husband and they both joined together… For me, it made more of a difference to have that peer support… they challenged me.&quot;</td>
<td>Social Support</td>
</tr>
<tr>
<td>&quot;I think a mindset. I think you have to want something bad enough to make it work.&quot;</td>
<td>Commitment</td>
</tr>
<tr>
<td>&quot;I think the social support from people in your household or your friends is very important. I think for some people confidence is knowing what healthy choices are.&quot;</td>
<td>Social Support Knowledge</td>
</tr>
<tr>
<td>&quot;The information that they received and if they use and refer back to it. I think the class structure, just being able to talk in class amongst each other… that environment was conducive to develop that confidence level.&quot;</td>
<td>Knowledge Social Support</td>
</tr>
<tr>
<td>&quot;I know with one of the women, she really liked the My Fitness Pal… Just getting a good laugh is good, it's just helpful to know that other people are trying and going through the same phase as you are.&quot;</td>
<td>Food Diary Social Support</td>
</tr>
<tr>
<td>What factors, do you feel, improve a person's confidence in eating well?</td>
<td>&quot;And I would imagine that's why the people who kept their tracker that if they lost a little bit that it is going to be easier for them to continue on because they know they are being successful and know what they are doing is working.&quot;</td>
</tr>
<tr>
<td>&quot;I think actually seeing things. Like the single servings made a big impact on everybody because up until then we had our own notions of single servings.&quot;</td>
<td>Knowledge</td>
</tr>
<tr>
<td>&quot;I do a lot of self talking. Especially when my husband brings home doughnuts… and I try to do the healthy things with the grandkids and try to teach them.&quot;</td>
<td>Discipline Knowledge Social Cues</td>
</tr>
<tr>
<td>&quot;I think what substitute foods you can use. I think people are adverse, you know, especially if they are not vegetable people, which at first I must admit I was not.&quot;</td>
<td>Knowledge</td>
</tr>
<tr>
<td>&quot;I think the first thing is knowing what to eat. I don't think you can be confident about eating well if you don't know what good choices are. The other thing would be feeling confident that you are in control.&quot;</td>
<td>Experience</td>
</tr>
<tr>
<td>&quot;Being able to talk more about sugar addiction and what it takes to get away from that and how it can change our personalities… sometimes stress, jobs or work can trigger it.&quot;</td>
<td>Sugar Addiction Stress</td>
</tr>
<tr>
<td>&quot;Honestly that end result, that sheet of paper with the health numbers on it was the biggest motivator. That was huge but you have to stick with it go get to that point.&quot;</td>
<td>Experience</td>
</tr>
<tr>
<td>Question</td>
<td>Response</td>
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<td>-------------------------------------------------------------------------</td>
<td>----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------</td>
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</tbody>
</table>
| What factors would you say build a person's confidence in being physically active? | "Knowing what to do. Especially women in the weight room or even walking into a gym. Males and females would sometimes be intimidated."  
"Practically speaking it is having a goal and knowing that you can attain that goal and part of that was the group dynamic."  
"I think there are always outside sources you are being bombarded with whether it be a commercial, the grocery store, your family, stress, work. All of those things are going to affect your confidence."  
"I think when, again a visual thing, you see a change in your body and you suddenly realize that you have this extra energy that you didn't have before you turn around and think, 'Maybe I can go out and play tennis.'  
"I think one thing would be your physical health and feeling that you can be physically active… I think if people can find something they enjoy doing it opens their confidence that they can exercise regularly and do that."  
"For me, I have to be physically active. I just see they go together. If I am physically active I am more likely to be more in tune with my health, my body, what the body needs. I just see the nutritional choices going along with the exercise choices."  
"I would have to say hard-core evidence. I would want to see my clothes to start to fit better and that is what would really motivate me to keep being physically active." | Knowledge, Goal Setting, Social Support, Stress, Social Cues, Experience, Physical Cues, Value Behavior, Value Health, Commitment, Experience |
**Section 3. Table 12-13. How would participants recommend the new knowledge and skills be included in future lifestyle modification programs?**

<table>
<thead>
<tr>
<th>Interview Question</th>
<th>Direct Quotations</th>
<th>Theme Code</th>
</tr>
</thead>
<tbody>
<tr>
<td>What activities, tools, or resources provided in the program helped increased your confidence in eating well or being active?</td>
<td>&quot;I liked the sections early on when you talked about the relationship between what we ate and how it relates to our overall health.&quot;</td>
<td>Pedometer Knowledge</td>
</tr>
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<td></td>
<td>&quot;The weigh-in was definitely onto the high point of accountability… We had to turn in our trackers every week… The grocery store was a huge plus&quot;</td>
<td>Visual Cues Food Diary Accountability</td>
</tr>
<tr>
<td></td>
<td>&quot;Those things that are hands on and that vision board to me was like the icing on the cake. I think having the grocery store tour... It is all going to depend on what type of learner you are.&quot;</td>
<td>Visual Cues Experience Pedometer</td>
</tr>
<tr>
<td></td>
<td>&quot;I think the meeting every week, watching what you ate and recording the results every week, the getting on the scales… You had a picture of the plate and that is perpetually in my mind. You have your three little areas all set out.&quot;</td>
<td>Visual Cues Food Diary Weekly Meeting</td>
</tr>
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<td></td>
<td>&quot;The tracking was a huge one for me that really made a difference…. new information… the stuff about the sugar.&quot;</td>
<td>Knowledge Food Diary</td>
</tr>
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<td></td>
<td>&quot;We talked about My Plate and that really was a mind changer for me because I had never thought about what portion size or what need to be on a plate… tracking I think is essential for me. Then doing things like looking ahead if I am going to go out to a restaurant.&quot;</td>
<td>Food Diary Visual Cues Planning Ahead Pedometer</td>
</tr>
<tr>
<td></td>
<td>&quot;The knowledge and the My Fitness Pal and the Fit Bit… I think the practical tools were huge for me.&quot;</td>
<td>Knowledge Food Diary Pedometer</td>
</tr>
<tr>
<td>Are there any activities, tools, or resources you feel should be introduced to improve the program?</td>
<td>&quot;So maybe there would be a way to encourage people to work on those trackers… I didn't feel like it was something I had to do I felt it was a resource but at least for me I needed that accountability.&quot;</td>
<td>Accountability</td>
</tr>
<tr>
<td></td>
<td>&quot;I love it just the way it is. I love that we get the sheets back so that we can have them in a folder. I have pulled mine out. I call it my manual.&quot;</td>
<td>Visual Cues</td>
</tr>
<tr>
<td></td>
<td>&quot;No I think it was good. I don't think so. I think you had the PowerPoints, you used the drawings on the board, you had some comparisons, just all of that was good.&quot;</td>
<td>Visual Cues</td>
</tr>
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<td></td>
<td>&quot;No. I like the way the program is structured. It is very informative and the person who did all of the presenting was very knowledgeable of what they were trying to get across to people like myself.&quot;</td>
<td>Knowledge</td>
</tr>
<tr>
<td></td>
<td>&quot;Talking about the emotional eating… more about how we are programmed by our culture to feed ourselves to make ourselves feel better or to celebrate… I am not going out with my friends because I want to have dill chips and beer. I am going out because I want to be with them but those things get so tied together.&quot;</td>
<td>Emotional Cues</td>
</tr>
<tr>
<td></td>
<td>&quot;I really enjoyed the RD who came in and I think that definitely needs to stay in the program… more discussion about diabetes and how it affects the body… I just think the knowledge and hearing it first hand from someone who is dealing with it or has dealt with it is very powerful.&quot;</td>
<td>Social Cues</td>
</tr>
<tr>
<td></td>
<td>&quot;I don't think so… I mean it has all the touchy feely stuff at the end and that is kind of where I lost some of my motivation but you want the meat up front because the participants need that information to get changes made.&quot;</td>
<td>Knowledge</td>
</tr>
</tbody>
</table>