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Effects of a Collegiate Employee Wellness Program on Participant Perceived Wellness and the Transtheoretical Model of Change: Voices of Participants

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EFFECTS OF A COLLEGIATE EMPLOYEE WELLNESS PROGRAM ON PARTICIPANT PERCEIVED WELLNESS AND THE TRANSTHEORETICAL MODEL OF CHANGE: VOICES OF PARTICIPANTS

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DISSERTATION ABSTRACT

EFFECTS OF A COLLEGIATE EMPLOYEE WELLNESS PROGRAM ON PARTICIPANT PERCEIVED WELLNESS AND THE TRANSTHEORETICAL MODEL OF CHANGE: VOICES OF PARTICIPANTS

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With rising costs of healthcare, due to high counts of obesity and chronic diseases, employers are exploring ways to have healthier and more productive employees by implementing wellness programs. Previous studies conducted on wellness programs and physical activity interventions took place at worksites, in the general public or at four-year universities (Butler, Clark, Brulis, Castillo, & Racette, 2015; Haines, et al., 2007; Rongen, et al., 2014a). These intervention programs focused primarily on the physical dimension of wellness to the exclusion of the other dimensions. The purpose of this mixed methods wellness program study was to investigate the effects of an employee wellness program: (1) on perceived wellness, (2) on the constructs of the Transtheoretical Model of Change (TTM), and (3) to examine employee perceptions of the wellness program through a mediated platform. Seventy-five fairly active healthy males (32%) and females (68%) predominately Caucasian (79%) faculty and staff of a community college in the south completed *Perceived Wellness*, *Stages of Change*, *Self-Efficacy*, *Decisional Balance* and *Processes of Change Questionnaires* pre and post wellness program. Participants responded to open ended questions prior to the start of the program and completed weekly journal entries

during the program 12-week wellness intervention. Three repeated measures Analysis of Variance (ANOVAs) were used to determine if there were significant differences in the constructs of TTM (self-efficacy, decisional balance, and processes of change). A paired samples *t* test was used to determine if there was a significant difference in pre and post composite scores for perceived wellness. A one-sample *t* test was used to determine mean change in stage of the change to a pre-intervention value of "0" which indicated a significant change in stage. Results showed significant changes in perceived wellness and the TTM constructs of processes of change and the stages of change. Data triangulation was accomplished through five separate assessments of content from four qualitative data sources: (1) open-ended questions in pre surveys, (2) journal entries, (3) semi-structured interviews, and (4) focus groups. This study indicated a stage-matched intervention using TTM constructs delivered virtually effectively improved physical activity in a community college setting. Rich qualitative data shed light on participant perceptions pre, during and post wellness program highlighting the importance of social accountability in a wellness program.

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INTRODUCTION

The leading causes of death in the United States of America (US) are heart disease or cardiovascular diseases (CVD), cancer, stroke and chronic lower respiratory disease (American Heart Association, n.d.). While the numbers of CVD deaths have decreased in recent years, increasing rates of obesity and diabetes are likely to change that statistic in the future (Carthenon, et al., 2009). The incidence of these leading causes of death can be decreased or lowered by reducing or eliminating risk factors that contribute to each (Fahey, Insel, & Roth, 2015; Hales, 2013). Modifiable risk factors are behaviors such as lack of physical activity, poor nutrition, tobacco use, too much alcohol consumption and environmental risks such as exposure to certain chemicals or toxins. Non-controllable risk factors include genetics, heredity and some environmental exposures such as radiation from everyday devices that are not one's own (i.e. cell phones, cigarettes, televisions).

Seventy-one percent of Americans are overweight and thirty-eight percent are obese due to factors such as sedentary lifestyles and less physically demanding occupations than what Americans had in the past (National Center for Health Statistics, 2014). Americans, ages 40 to 59, have the highest obesity rates, and almost two-thirds of Americans, ages 45 to 64, have at least one chronic disease that hinders their health (Centers for Disease Control and Prevention, 2013). With individuals spending more of their time at work, more employers and companies are investigating the benefits and effects of work-site wellness programs (Person, Colby, Bulova & Eubanks, 2010). While worksites are a prime place to implement wellness programs, they are time-consuming, require many resources and must be conducive to employee needs and desires for the program to be successful. The biggest indicators for an individual being successful (i.e.,

reaching specific physical fitness goals, learning ways to deal with stress, improving nutrition) in a wellness program is the individual's self-efficacy, perceived benefits, perceived barriers and perceived susceptibility to certain health issues or diseases (Janz & Becker, 1984). By conducting a mixed methods study, a better understanding of these indicators could help create and implement more effective wellness programs for worksites and educational settings.

Statement of the Problem

With rising costs of healthcare due to high counts of obesity and chronic diseases, employers are exploring ways to have healthier and more productive employees. For decades, organizational wellness programs have given hope to employers by consistently showing high Return on Investment (ROI) (Berry, Mirabito, & Baun, 2010). A high ROI means the employer saves in healthcare costs more than costs spent on the wellness program. As the popularity of wellness programs increase, it is important to understand what employees want and need in order to successfully participate and benefit in organizational wellness programs (Robroek, van Lenthe, van Empelen, & Burdorf, 2009; Schmidt, 2012; Kim, Hollensbe, Schwowrer, & Halbesleben, 2015). There are many factors that can contribute to the success (reaching specific physical fitness goals, learning ways to deal with stress, improving nutrition) or failure (not reaching physical fitness goals, not effectively dealing with stress, not adopting healthier eating habits) of an individual's experience during a wellness program. Barriers, facilitators, perceived wellness, self-efficacy, motivational behaviors and where an individual self-identifies in the stages of change all affect success (Person et al., 2010). For example, when an individual self-identifies in the contemplation stage, which means they are thinking of changing a health behavior, the individual needs encouragement by way of educational information that compares the pros and cons of changing the behavior. A more appropriate intervention for an individual in the action stage would be information about overcoming potential barriers. Multiple quantitative

studies (Butler et al., 2015; Ghiami, Soh, Fauzee, & Soh, 2015; Haines, et al., 2007; Higgins, Middleton, Winner & Janelle, 2014; Kim, Hollensbe, Schwowrer, & Halbesleben, 2015; Papandonatos, et al., 2012; Person, et al., 2010) have been conducted to investigate the efficacy of wellness programs and physical activity interventions. Very few have conducted qualitative research (Linnan et al., 2010; Person et al., 2010) to gain a richer understanding of participant thoughts and feelings occurring during organizational wellness programs and physical activity (PA) interventions. Investigating and understanding how individuals respond to incentives, interventions and barriers is a way to ensure better wellness programs that engage, retain and better meet the needs of employees to ultimately keep healthcare costs down for the company by increasing job-satisfaction and reducing job-absenteeism (Person et al., 2010; Rongen et al., 2014a).

Purpose of the Study

The purpose of this mixed methods wellness program study was to investigate the effects of an employee wellness program: (1) on perceived wellness, (2) on the constructs of the Transtheoretical Model of Change (TTM), and (3) to examine employee perceptions of the wellness program.

Research Questions

The following research questions provided guidance for this study:

(1) What effect does the wellness program have on employee perceived wellness?

(2) What effect does a tailored and targeted wellness program have on the four constructs of the Transtheoretical Model of Change?

(3) What are participant perceptions prior, during and after the wellness program?

Significance of the Study

Previous studies conducted on wellness programs and physical activity interventions took place at worksites, in the general public or at four-year universities (Berry et al., 2010; Butler, et al., 2015; Haines, et al., 2007; Hand, 2009; Person, et al., 2010; Rongen, et al., 2014a; Rongen, et al., 2014b; Williams, et al., 2011). Physical wellness exclusively was investigated instead of investigating how all dimensions (i.e. physical, emotional, intellectual, social, spiritual, psychological) of wellness may have been affected while only focusing on physical wellness. In addition, quantitative research drove previous studies by only looking at physical activity and behavior change gains (i.e., steps, body mass index (BMI), cholesterol levels). To date, the investigation of the effects of wellness programs on community college employees has not been explored except to assess the plausibility of implementing wellness programs on community college campuses. Linnan, et al. (2010), surveyed 59 community college presidents in a southern state to investigate the status of worksite wellness programs on the campuses, feasibility of a program on campus and interest of a campus program. Forty-eight surveys were returned and the returned surveys indicated that only 27% of the community college campuses had worksite wellness programs. The survey focused on the initial steps of implementing a health promotion program, such as barriers and opportunities instead of the process, results, or success of the health promotion programs (Linnan et al., 2010).

Like universities, community colleges are unique environments that provide safe and aesthetically pleasing places for individuals to walk or run, while also hosting facilities in which physical activity and health assessments can be conducted (Butler et al., 2015). Community colleges are unique in the fact that they are located in both rural and urban areas and are usually part of a statewide system, which makes it easier to spread and implement a worksite wellness plan that works (Linnan et al., 2010). This mixed-methods study investigated (1) effects of the

wellness program on perceived wellness of employees, (2) effects of the wellness program on the four constructs of TTM, and (3) employee perceptions prior, during and after the wellness program through the collection of surveys, journals, focus groups and interviews; collectively those are techniques rarely used in the evaluation of wellness programs and physical activity programs. Another unique feature of this study was that every three weeks the participants were given a new wellness behavior to track, in addition to the previous behavior, which increased program difficulty. The tailored interventions were stage specific to encourage participants to either begin physical activity, maintain physical activity or be prepared on how to prevent barriers from interrupting physical activity. The virtual wellness program was implemented through Scout, a pseudonym used to describe the school's platform used to relay course material to students. All surveys, wellness behavior tracking, journals and interventions were taken through this virtual platform. This study tried to eliminate as many barriers as possible by only requiring access to a computer or smart phone, and a tracking system for steps such as a pedometer, which was furnished by the researcher. All employees of the community college have access to a computer at multiple times throughout the day. In addition, to date this is the only team-based wellness program study we are aware of. Previous studies solely looked at individual interactions and results and did not investigate the effects of a team-based program. This study investigated how and why interventions work, which goes beyond previous studies that mainly focused on outcomes (i.e. lowering BMI, lowering cholesterol, exercising 150 minutes a week) of wellness programs instead of the cognitive process (i.e. thoughts and feelings encountered during the program) of participants. This investigation may help provide answers as to why there are so many inconsistencies in findings when assessing the effectiveness of wellness programs (i.e. wellness programs are effective, physical interventions are effective).

Summary

The health benefits of an active lifestyle, specifically achieving recommended levels of physical activity, are well known, but only a fraction of American adults partake in sufficient levels of exercise (Higgins et al., 2014; Malik, Blake, & Suggs, 2013). The workplace, specifically a community college, is an ideal location for promoting physical activity and other wellness behaviors through a wellness program that focuses on overcoming common barriers and provides social support, which can show gains in physical activity (Linnan et al., 2010; Malik, et al., 2013; Marcus & Forsyth, 2009) However, there are mixed results on whether wellness programs and interventions for employees are effective. Some wellness program physical activity interventions have shown marginal gains in increasing physical activity, while others have produced inconclusive evidence of success (Malik et al., 2013). Malik et al. (2013) conducted a systematic review of articles focusing on increasing physical activity through health promotion in a workplace. Fifty-eight studies were included in the meta-analysis and 32 of them showed a statistically significant increase in participant physical activity levels. However, Malik et al. (2013) concluded that although there is some evidence physical activity interventions in the workplace can be effective, overall the results are inconclusive. With contradictory results of the effectiveness of worksite wellness programs and physical activity behavior interventions, more research is needed to better understand why there are such contradictory results. This investigation may help explain why there are so many inconsistencies in findings when assessing the effectiveness of wellness programs.

Abbreviations

AHA – American Heart Association

BSE – Barrier Self Efficacy

CVD – Cardiovascular Disease

CDC – Centers for Disease and Prevention Control

DB – Decisional Balance

DOW – Dimensions of Wellness

LOC – Locus of Control

PA – Physical Activity

POC – Processes of Change

PRPS – Pre-Program Survey

POPS – Post-Program Survey

PW – Perceived Wellness

PWS – Perceived Wellness Survey

ROI – Return on Investment

SE – Self-Efficacy

SOC – Stages of Motivational Readiness for Change Model (same as TTM)

TTM – Transtheoretical Model of Change (same as SOC)

US – United States of America

WWP – Worksite Wellness Program

Definition of Terms

In the following section, the terms are defined according to how they are used operationally in this study.

Chronic diseases: Develop and continue over a period of time due to life style choices (Robbins, Powers & Burgess, 2013).

Decision-making: The comparison between perceived benefits and barriers for physical activity participation (Fahey et al., 2015).

Exercise: A specific form of physical activity, which is planned; purposeful physical activity performed with the intention of acquiring fitness or other health benefits (Fahey et al., 2015).

Life style choices or behaviors: Conscious decisions made that either increase or decrease a person's risk of disease or injury (Fahey et al., 2015).

Locus of control: The figurative place an individual gives credit to his or her life events (Insel & Roth, 2012).

Moderate activity: Activity for at least 30 minutes a day, most days of the week (Hales, 2013).

Perceived wellness: "The sense that one is living in a manner that permits the experience of consistent, balanced growth in the emotional, intellectual, physical, psychological, social and spiritual dimensions of human existence" (Rothmann & Ekkerd, 2007, p. 36).

Physical activity: Movement that involves contraction of your muscles or any of the activities we do throughout the day that involves movement. Examples of physical activity include: housework, gardening, walking and climbing stairs (Fahey et al., 2015).

Scout: Cloud based learning management system used to record health behavior data, record journal entries, and deliver interventions and content of this study (Canvas by Instructure, n.d).

Self-efficacy: The individual's perceived ability to successfully deal with high stress situations that might discourage them from continuing to participate in the healthy behavior (Fahey et al., 2015).

Stages of Motivational Readiness for Change Model/Transtheoretical Model of Change: A framework looking at individuals' motivation for changing physical activity habits, barriers to change, benefits of change, and specific interventions that promote change. Self-efficacy, stages of change, processes of change and decisional balance are the four constructs that make up the model (Marcus & Forsyth, 2009).

Wellness: An active process of becoming aware of and making choices toward a healthy and fulfilling life (Robbins et al., 2013).

Wellness barriers: People, obstacles or circumstances that prevent individuals from participating in activities that would improve wellness (Person et al., 2010).

Wellness facilitators: People, assistance or circumstances that help individuals participate in activities that would improve wellness (Person et al., 2010).

Wellness programs: Programs offered to employees either on-site or off-site of an organization or business that hope to create high functioning employees by promoting healthy behaviors and by changing any current unhealthy behaviors (Parks & Steelman, 2008).

Assumptions

1. Each self-picked wellness team chose the best captain that will encourage and remind teammates to complete surveys, journals and data entry on time.
2. All participants took the advice of the researcher and received clearance from their medical doctor prior to participating in this program.

Limitations and Delimitations

Limitations of this study might have included: (1) participants were able to self-select their teams consisting of five to nine participants, (2) the researcher was a full-time faculty member of the school, (3) there was not a control group, and (4) physical activity steps were self-reported with different instruments. The strengths and weaknesses of the team captain may have influenced the success of the team and even individual participation. Since the researcher is a full-time faculty member of the college, the researcher had more insight to the wellness program participants, which could have influenced results. Delimitations of this study might have included: (1) using the virtual platform the instructors at the community college use to deliver course content, (2) the wellness program began near the beginning of January, (3) the wellness program was piloted last year, therefore school employees were familiar with it, and (4) the only

equipment needed was an instrument that could record steps. Many instructors at the community college that was studied deliver course content through Scout, which may have a positive effect on the program since they did not have to learn a new system to record data or to participate. The program began in January, which is viewed as a time for individuals to change behavior habits and try new things to make self-improvements. The researcher created and piloted a similar program last year, therefore exposing participants to constructs of the wellness program. In addition, many wellness programs require individuals to have access to a gym or to leave worksite premises. The only equipment needed for this wellness program was a device that tracked steps such as a pedometer, which was provided by the researcher, or participants could purchase devices such as Fitbits and Jawbones.

CHAPTER II

REVIEW OF LITERATURE

With increased focus on wellness and worksite wellness programs due to increased healthcare costs, there is a need to better understand how to implement effective wellness programs to ensure participant success. Therefore, this review focuses on wellness, worksite wellness programs, perceived wellness, and all four constructs of the Transtheoretical Model of Change (TTM). Specifically the chapter provides background information concerning the importance of wellness, the six inter-related dimensions of wellness (i.e. physical, emotional, intellectual, social, spiritual, psychological), and the development of worksite wellness programs. Next, the results of studies are presented that have investigated the effectiveness of wellness programs in corporate and higher education settings, on different variables of wellness programs such as barriers and facilitators, and on participation in wellness programs. Finally, information is provided on the four constructs of TTM (i.e., stages of change, self-efficacy, processes of change, decisional balance) and the research concerning tailoring and targeting behavior change interventions. The chapter concludes with a summary of the main research findings relevant to this study and the intervention created.

Wellness

Health and wellness has been a primary focus in the medical field, education and worksites due to high medical costs and an increase in chronic diseases. Health and wellness are terms many use synonymously. However, to be healthy means that one is free from illness or disease, which can be measured or tested. Wellness is an active process of becoming aware of and making choices toward a healthy and fulfilling life (Robbins et al., 2013; Fahey et al., 2015). Wellness is a holistic approach in that all dimensions of wellness (i.e., physical, emotional,

intellectual, social, spiritual, psychological) are inter-related (Adams, Bezner, & Steinhardt, 1997; Miller & Foster, 2010).

No greater emphasis is placed on any one dimension of wellness (DOW), but instead each dimension is considered equal in importance to achieving wellness (Adams et al., 1997; Roscoe, 2009). However, improvement in any one of the dimensions of wellness is likely to have a positive effect on the person as a whole, and neglect of any one dimension can have a negative effect on the person (Miller & Foster, 2010). The six dimensions of wellness are described below:

- Physical wellness includes the ability to care for yourself by keeping your body free from disease and the continuous up-keep of your physical fitness level. Methods to improve physical wellness include: keeping up an exercise routine, having a healthy and balanced diet, and reducing or eliminating risky behaviors such as tobacco use, excessive alcohol consumption, and destructive ways of dealing with stress (Fahey et al., 2015).
- Emotional wellness involves the ability to understand and effectively deal with feelings by attending to thoughts and emotions, observing reactions, and finding answers to emotional issues. An emotionally well individual has a positive view of self and others while being adaptable and being capable of functioning independently (Fahey et al., 2015).
- Intellectual wellness reflects an active mind that continues to learn new things, accept challenges, and seeks new experiences throughout life. An individual with high intellectual wellness uses available resources to learn, develop talents, think critically and then apply that knowledge to improve society (Fahey et al., 2015).

- Social wellness, also known as interpersonal, includes your ability to develop, grow and maintain satisfying and supportive relationships with others and the environment. A socially well individual contributes to society by living in harmony with others while working towards a common goal for the betterment of the community as well as well as being comfortable expressing needs and opinions that enhance personal relationships (Fahey et al., 2015).
- Spiritual wellness is defined as having principles, a set of guiding beliefs, or values that give meaning and purpose to your life. For an individual to be spiritually well, he or she must continuously find purpose in life in relation to others and the universe while uniting the force between body and soul (Fahey et al., 2015).
- Psychological, which is similar to emotional and sometimes combined into one dimension, is defined as having a positive self-view and autonomy. A psychologically well individual is optimistic about life events and experiences (Fahey et al., 2015).

A few factors that influence wellness include health habits, heredity, family history, environment, and access to health care (National Center for Health Statistics, 2014). With nearly 71 percent of American adults being overweight and around 38 percent of Americans being obese, wellness has become a major concern for the American population (National Center for Health Statistics, 2014). Americans are living longer than before, and healthcare costs are higher than before due to longer years of impaired life and a higher prevalence of chronic diseases. The current average life expectancy for Americans is about 79 years with the last nearly 12 years of life being impaired (Fahey et al., 2015).

With people living longer, the national Healthy People Campaign was created to prevent disease and improve the quality of life for Americans by setting national health goals and publishing the goals to be reached by the public each decade. Healthy People 2020 aims to help all individuals in society live long healthy lives by having the following objectives: 1) eradicate preventable diseases and premature death, 2) improve the health of all societal groups, 3) build social and physical environments, and 4) promote healthy behaviors in all stages of life (HealthyPeople.gov, n.d.).

While the dimensions of wellness are inter-related, most of the focus for living a healthy lifestyle has focused on the physical dimension and the importance of physical activity. The federal recommendations, which derive from the Centers for Disease Control and Prevention (CDC), are 150 minutes of moderate-intensity aerobic activity and two or more days a week of muscle strengthening activities or 75 minutes of vigorous-intensity aerobic activity with two or more days a week of muscle strengthening activities. There can also be an appropriate mix of moderate and vigorous aerobic activities with at least two days of muscle strengthening activities to fulfill the CDC recommendations. Appropriate physical activity is associated with health outcomes such as a reduction in cardiovascular disease (CVD), type 2 diabetes, some cancers, depression, and weight management (HealthyPeople.gov, n.d.). Regardless of the benefits of adequate physical activity, healthy Americans do not participate in the recommended amount of physical activity. Therefore, there is a valid reason to conduct more research on wellness programs and physical activity interventions that promote physical activity (Conn, Hafdahl, & Mehr, 2011).

Healthy People.gov (n.d.) and American Heart Association (n.d.) have both suggested that all individuals can benefit and optimize their health by participating in daily moderate levels of physical activity. A targeted daily step goal for individuals is 10,000 steps, which is equivalent

to about five miles in distance. Engaging in regular moderate physical activity throughout life is an essential part of maintaining normal body weight, preventing premature death and optimizing psychological well-being. Physical activity plays an active role in the prevention of coronary heart disease, cancer, obesity, diabetes II and other chronic diseases. Other health behaviors that can contribute to optimizing health are water intake, sleep and nutrition. It is recommended that individuals drink half their body weight in ounces of water each day to stay hydrated (Shaw & Nazario, 2009). For example, if an individual weighs 150 pounds, it is recommended to drink 75 ounces of water per day. Morgenthaler (2013) suggested that adults receive between seven to eight hours of sleep per night to maintain good health, and poor sleep quality has been associated with obesity and other metabolic disorders (Grandner, Jackson, Pak, & Gehrman, 2012). Also, recommended for good health is consuming a minimum of five servings of fruits and vegetables a day. The daily amount of fruits and vegetables needed depends on age, sex and activity level; however, five combined servings per day is the suggested minimum for adults (choosemyplate.gov, 2015). All of these habits (i.e. steps, water intake, sleep, nutrition) collectively can help improve and maintain optimal health.

Worksite Wellness

Avenues for reaching a large number of people to educate them on the importance of healthy living are worksite wellness programs. These programs are offered to employees either on-site or off-site of an organization or business with the hope of creating high-functioning employees by promoting healthy behaviors and by changing unhealthy behaviors. It has been shown that worksite wellness programs provide numerous benefits to participants such as increased physical activity, physical fitness, and decreased stress (Aldana, Merrill, Price, Hardy, & Haggar, 2005; Higgins, et al., 2014; Iwasaki, Zuzanek, & Mannell, 2001; Malik et al., 2013). Companies have focused on ways to reduce healthcare costs by implementing wellness programs

that encourage employees to adopt healthy behaviors. Research has shown employers benefit from these programs by increasing job satisfaction, reducing job absenteeism and reducing healthcare costs (Haines et al., 2007; Parks & Steelman, 2008). Parks & Steelman's (2008) meta-analysis included studies that had either a fitness (i.e., walking, working out) component program or a comprehensive (i.e., fitness, nutrition, stress reduction) program. Two large categories comprised the data: (1) large corporate interventions that involved large scale wellness programs to contain costs and involved several areas of wellness (i.e., physical, psychological, informational components), and (2) controlled studies with fewer participants and had an experimental focus in which the control group and exercise group were compared over time and against other groups. Their findings included empirical evidence to support that: (1) individuals that participated in organizational wellness programs tended to have lower absenteeism rates than those that did not participate and (2) individuals that participated in the wellness program were associated with higher job satisfaction. Reasoning to support those findings include: (1) employers that offer wellness programs value their employees, which impacts employee perceived organizational support (Rhoades & Eisenberger, 2002), (2) wellness programs can be used as a recruiting and retention tool for those that value physical fitness (Falkenberg, 1987), and (3) exercise and physical fitness can reduce stress levels, which can impact well-being and job satisfaction (Iwasaki et al., 2001). They also suggested more research was needed to explain the reason employees choose to participate or not to participant in wellness programs. Both personal (i.e., motivation, past experience) and organizational factors (i.e., wellness program climate, supervisor support, co-worker perceptions) were identified to play possible roles in employee participation as well as cutting personal health care costs (Parks & Steelman, 2008).

If worksite wellness programs have been shown to reduce health care costs, it is important for employers to offer them to their employees. Haines et al. (2007) reported that

approximately 90% of workforces with over 50 employees had some type of health promotion program and Kim et al. (2015) reported 92% of employers with over 200 employees offered a wellness program. Worksite wellness programs (WWP) derived from employees wanting health screenings, wellness education, disease prevention programs, and employers wanting to cut back on healthcare costs. Obesity is a major contributing factor to many chronic diseases and with cardiovascular disease (CVD) and stroke being the leading cause of death in the United States of America, workplaces are highly motivated to implement comprehensive wellness programs since they are proven to be effective in preventing major risk factors for CVD and stroke (Butler, et al., 2015).

Worksite wellness programs differ in offerings depending on physical resources, goals, size of organization, employee make-up and financial resources (Kim et al., 2015; Parks & Steelman, 2008). Worksite wellness programs vary in physical components such as focusing only on physical activity, nutrition, smoking cessation, water intake, health screenings and sleeping habits, or they may be more comprehensive and include activities in other dimensions of wellness that address emotional, psychological, financial and spiritual well-being (Horton & O'Fallon, 2011; Pescud, et al., 2015).

Since comprehensive WWPs can require much time, money and other resources, American Heart Association (AHA) recommends that workplaces progress their wellness program in small increments, such as gradually adding components, instead of immediately trying to create a comprehensive wellness program (Carthenon et al., 2009). To increase WWP success and have comprehensive offerings, the AHA has specific recommendations that need to be included in a WWP with classes such as tobacco cessation, stress management, how to increase your physical activity, nutrition, weight management and disease management. Environmental modifications must be made that reduce possible hazards to employees and the

setting must be set up to help the employees be successful in the wellness program. One worksite wellness program that aimed to increase the level of physical activity in public health care workers found a significant increase in the number of days participants walked per week from pre to post program (Jo, Song, Yoo, & Lee, 2010).

With the diversity of the workforce, wellness programs must be developed for all populations and not exclude certain groups based on gender, socioeconomic status, physical or intellectual capacity, age or job type (Carthenon et al., 2009). Churchill, Gillespie and Herbold (2014) conducted a study comparing and contrasting the desirability of wellness program offerings and factors for continued participation in the program. A 24-question survey was administered to 721 participants from three different organizations to examine reasons for participating in the wellness program and found: (1) off-site and on-site gym memberships, personal training and healthy food options were associated with the highest likelihood of staying in a wellness program, (2) the type of industry affected desire to participate in a wellness program as healthcare workers were more likely to participate and higher education employees were less likely to participate in on-site gym memberships and personal training, (3) younger participants showed more interest in healthier food options, group fitness classes, and gym memberships, and (4) nonfinancial incentives had little motivation on participation and financial incentives were highly motivational.

Worksite wellness programs and university wellness programs vary depending upon resources (i.e. workout facilities), educational class offerings (i.e. stress reduction, smoking cessation), available screenings (i.e. blood pressure, cholesterol, BMI) and physical behaviors in focus (i.e. steps, water-intake). Some wellness programs are general and simply give participants specific non-tailored goals that are not tracked and some are as specific as having structured courses and specific tailored goals that need to be tracked and reported daily.

Worksite Wellness Programs in Higher Education Settings. While there is extensive research on WWPs in a variety of corporate and health related settings, there is limited research in examining WWPs in higher education settings such colleges and universities (Butler et al., 2015). Churchill et al. (2014) suggested employees in higher education institutions were less likely to participate in a fitness center based program and Speck, Hill, Pronk, Becker and Schmitz (2010) reported higher dropout rates among participants at an academic worksite.

The research that has been done often fails to differentiate between employees and students during university investigations. However, several studies conducted have found positive effects of employee wellness programs in university settings (Butler et al., 2015; Croteau, 2004; Haines et al., 2007). Specifically, 121 university employees were used to examine the effects of an 8-week physical activity based (walking) worksite wellness program on physical activity levels, cardiorespiratory fitness, and CVD risk factors. The results showed an increased level of physical activity (more steps walking), increased cardiorespiratory fitness, and decreased CVD risk factors (Butler et al., 2015). Croteau (2004) also found positive benefits of a pedometer based 8-week physical activity intervention. In this study, 37 private college employees were provided information through weekly email reminders, motivational tips, and educational information. The results showed a significant increase in average daily steps. Like Butler et al. (2015) and Croteau (2004), Haines et al. (2007) found an increase in physical activity (steps), a reduction in BMI, and a reduction in total cholesterol during the wellness program conducted with 125 university employees (both faculty and staff). They used a 10-unit wellness program delivered virtually (computer based) and provided weekly email tips to participants to examine physiological measures (BMI, blood glucose, cholesterol) and perceived wellness, which resulted in positive physiological changes, but only had a moderate effect on perceived wellness. Each study reported an increase in physical activity (Butler et al., 2015;

Croteau, 2004; Haines et al., 2007) and other wellness measures (Butler et al., 2015; Haines et al., 2007) in university employees after the wellness program regardless if it was delivered face-to-face or virtually. The results also provide support for using novel motivational tools (such as a pedometer) to enhance wellness programs.

While these studies showed positive results in wellness programs at 4-year institutions, the literature on wellness programs at the community college level is even more limited. To examine the state of wellness programs at community colleges in North Carolina, Linnan, et al. (2010) sent a brief survey to all community college presidents to investigate the status of worksite wellness programs on the campuses, feasibility of a program on campus, and interest in a campus program. Their survey found only 27% of the community college campuses had worksite wellness programs, but they did not mention intervention success results or provide program evaluations (Linnan, et al., 2010). To follow up on the survey results, researchers visited six campuses to gather qualitative data to use for developing and implementing worksite wellness programs in the community college setting. The six interviews revealed several barriers to offering a worksite wellness program at a community college: (1) cheap food options high in fat and calories were prevalent on all campuses in places such as the cafeteria and vending machines, (2) fast food restaurants are easily accessible from all campuses, (3) low employee participation due to commuting distances, which prevents employees from participating in activities before work and after work, and (4) part-time employees are not routinely on campus to access programs.

Barriers and Facilitators

When examining the "success" of WWPs, there are two vital areas to consider (1) the worksite wellness program and (2) the participants in the program. Understanding barriers and facilitators of both these components are instrumental in the implementation and facilitation of

the wellness program. While the benefit of WWPs has been shown to be effective in aiding health, the reasons why individuals fail to participate (barriers) in WWPs need to be examined.

Worksite Wellness Barriers and Facilitators. If employees are to experience the benefits of a WWP, one must be offered. Yet, one barrier to offering comprehensive WWPs is the low employee participation (Linnan et al., 2010; Robroek et al., 2009) with levels typically below 50% and an attrition rate of 50% (Haines et al., 2007). Other barriers to WWPs include: lack of time, insufficient funds and poor perceived support from management or superiors. The success of a WWP largely depends on the ability of the organization to motivate individuals by offering desired activities and information, along with creating a wellness culture (Churchill et al., 2014). Olson and Chaney (2009) recommend the use of continuous surveys gaging the needs of participants to have a better understanding of what types of activities and incentives are wanted. Churchill and colleagues (2014) administered an anonymous survey to employees at a non-profit health organization, a non-profit higher education institution and a for-profit corporation to assess interest in wellness programs and incentives. There were 721 (15% male, 85% female) participants with an average age of 45 years. Results showed there were trends when comparing age to likelihood of participating in certain programs. Younger participants (<30 years) were more interested in having healthier food options as well as having off-site workout facilities. When examining incentives of interest, monetary incentives ranked the highest and incentives such as non-paid time off work and non-monetary rewards ranked the lowest. Contrary to Churchill's (2014) study where participants reported their interest in certain incentives, Linnan et al. (2008) discovered the use of monetary incentives such as gift cards work well with health screenings; however, they are not effective in long-term behaviors such as weight loss and smoking cessation programs.

Wellness Barriers and Facilitators. People, obstacles or circumstances that prevent individuals from participating in activities that would improve wellness are considered wellness barriers (Person et al., 2010). Wellness facilitators include: people and assistance or circumstances that help individuals participate in activities that would improve wellness (Person et al., 2010). There is evidence to suggest that WWPs are beneficial to employees in worksite and university settings. In a meta-analysis of 20 physical activity (PA) studies, it was noted that mediated delivery of interventions and non-structured exercise, as facilitators of physical activity and barriers were dependent upon age (Higgins et al., 2014). For example, middle-aged individuals reported lack of time due to work schedules and responsibility as biggest barriers. Younger adults indicated "laziness" and having other priorities as barriers, and older adults were concerned about physical health concerns such as arthritis (Higgins et al., 2014). As Higgins et al. (2014) indicated, age is a relevant factor in WWPs. Specifically, in university settings, where the population is older, Person et al. (2010) found the top three barriers to wellness participation were: low or insufficient incentives (i.e. monetary, time-off from work, lower premiums) and inconvenient locations and time restrictions. Additional barriers reported included: commuting distance to work prevented employees from participating before and after work and that part-time employees such as adjuncts are not on campus often to take advantage of the facilities and programs offered (Linnan et al., 2010). In agreement, Marcus et al. (2006) mentioned that structured programs along with class schedules, the need for travel, and entrance fees were barriers for college WWPs.

Perceived Wellness

While wellness has been a topic of high interest in the past few decades, perceived wellness has just recently drawn attention from researchers. In the past, practitioners solely looked at physiological (i.e. blood pressure, cholesterol, maximum oxygen uptake) and

behavioral (i.e. alcohol consumption, smoking, eating habits) measures to plan interventions, which were beneficial for physical wellness, but emotional and mental wellness, were rarely investigated. Perceptual measures (i.e. perceived wellness, perceived exercise self-efficacy) have been used to effectively predict health outcomes. Therefore, valid perceptual measures, along with physical indicators of wellness, could be used together to provide researchers valuable knowledge (Adams et al., 1997). Perceived wellness is, "the sense that one is living in a manner that permits the experience of consistent, balanced growth in the emotional, intellectual, physical, psychological, social and spiritual dimensions of human existence" (Rothman & Ekkerd, 2007, p. 36). Rothman and Ekkerd (2007) also noted how key it was to ask the individual's perception of wellness because it makes little sense to declare someone as "happy" when they themselves do not pronounce themselves as happy. In addition, perceptions of health are good indicators of medical and mental health (Rothman & Ekkerd, 2007). Perceived wellness can be evaluated using instruments constructed by researchers such as Adams et al. (1997) that were created to evaluate the balance of all six dimensions of wellness through multiple life activities (*Perceived Wellness Survey*) because; it was founded on perceptual variables instead of clinical, physiological or behavioral variables.

Researchers agree that instruments measuring wellness are needed (Adams et al., 1997) and recognize the challenges in properly expressing such a complicated concept due to its constant state of change and because of its subjective and personal nature (Harari, Waehler, & Rogers, 2005). Also in question is whether wellness is better understood and described as individual dimensions or as a unified construct. In the PWS there are six individual dimensions of wellness (i.e. physical, emotional, intellectual, social, spiritual, psychological) being evaluated; however, the dimensional scores are mixed by combining the mean of each dimension with the standard deviation among dimensions into a composite wellness score (Adams et al.,

1997). The composite score can range from three to 29 with higher scores indicating greater perceived wellness. Adams et al. (1997) recommends against comparing the composite score to normative data or a maximum test score since the score is representative of individual wellness. Adams, Bezner, Garner and Woodruff (1998) collected six different samples: three corporate studies (n=796) and three college student studies (n=281) over the course of three years. Within each of the six samples, they were divided into four equal groups based on PWS scores. The question of interest was whether the highest and lowest perceived wellness quartiles were significantly different. The majority of all the analyses ran indicated the highest and lowest perceived wellness groups were significantly different which provided strong support for the validity of the PWS, while reliability and stability were also confirmed. Participants from these six different samples who had highest and lowest scores on the PWS appeared to have some of the same characteristics and behaviors in common that are consistent with the PWS theoretical foundation. In theory, individuals scoring high on perceived wellness should (1) be more physically healthy, (2) have a greater sense of meaning and purpose in life, (3) expect positive things to happen in their life, (4) be more connected with family and friends, (5) be more secure and happy with who they are and (6) be intellectually passionate.

Rothman and Ekkerd (2007) divided 673 staff members from the South African police service into two groups: random (n=335) and replicated (n=338). The PWS and biographical information (i.e. age, gender, rank, qualifications) were collected from all participants. The purpose of the study was to assess the validity and reliability of a Setswana translation of the PWS and to investigate the differences in the perceived wellness of police members based on gender, qualifications, age and rank. Results concluded that reliability was established but further investigation needed to be conducted to establish full validity. However, the researchers admitted the results of the study could be explained another way concerning validity; their results should

be interpreted with caution. There were significant differences found between perceived wellness of participants in terms of age and rank. The mean age of the participants is unclear and so is the number of participants in each category. However, there were participants in all age groups (i.e., 30 years and younger, 31-40 years, 41-50 years, 51-60 years).

One common fault of the research previously conducted using the PWS was that most of the individuals in the study were of a younger age and very few studies used an older population (Foster & Levitov, 2012). This could be problematic for researchers and clinicians trying to use a wellness model designed for younger adults on an older population. An individual's age, experiences and life events may change their views of wellness over time (Foster & Levitov, 2012).

Research investigating the relationship between perceived wellness and physical activity using the *Perceived Wellness Survey* (PWS) used a sample of 243 (48 males and 195 females) hospital workers and the majority of them were Caucasian (203) while the mean age was 39.5 years (Bezner, Adams, & Whistler, 1999). Data were collected by administering questionnaires and the PWS. Subscale and composite scores were computed for the PWS, and subjects were placed into one of three activity groups based on their scores from the questionnaires. Individuals with the lowest 25% of scores were placed in the "sedentary" group. Individuals with the highest 15% of scores were placed in the "high active" group and the remaining 60% were assigned to the "activity-oriented" group. The researchers concluded that the more a person exercises or participates in physical activity, the greater their perceived wellness. Specifically, physical and psychological wellness scores were greater overall in association with participation in greater amounts of leisure time activity (Bezner et al., 1999). Similar results were found with 41 female college students after an 11-week intervention where they had to attend bi-monthly classes related to holistic wellness and turn in bi-weekly step logs (Gieck & Olsen, 2007). Holistic

wellness was based on Hettler's model that focused on the six dimensions of wellness (same that are in the PWS). Self-report data showed students report significant increase in physical activity and knowledge of holistic wellness. However, the increase in knowledge concerning holistic wellness was not shown to be a predictor of increased physical activity (steps taken). While these results were positive, several limitations for this study need to be considered such as the high attrition rate (more than 50%), the lack of diversity in the participant group, and the lack of a standardized protocol integrating the walking program with the holistic wellness program (Gieck & Olsen, 2007).

Few researchers have examined the relationship between activity and comprehensive wellness measures such as the *Perceived Wellness Survey*. While much research involving the PWS has either been conducted by Adams and colleagues (Adams et al., 1997; Adams et al., 1998) or been focused on investigating the validity, reliability and stability of the PWS (Fung & Pang, 2010; Roscoe, 2009; Rothman & Ekkerd, 2007), there is a lack of research conducted by non-founders of the PWS that uses the survey in health behavior interventions.

A recent study by Urda, Lynn, Gorman and Larouere (2016) investigated if a workplace intervention could reduce sedentary behaviors and improve perceived wellness in middle-aged women working in a university setting. Forty-four predominately white (95%) women with a median age of 44 were split evenly into a control group (n=22) and an intervention group (n=22). Both groups completed the *Perceived Wellness Survey* prior to the beginning of the study. In addition, both groups wore an activity monitor for one week to establish a baseline for current activity. Baseline results revealed that the average sitting time for the participants was 68% of the workday, which is on the lower end of previously reported data in literature which was 66% to 82% (Bird, Shing, Mainsbridge, Cooley, & Pederson, 2015). At the end of week one, both groups completed the PWS again. During week two, both groups continued to wear the activity

monitor and were told to maintain their current physical activity. During week two, the intervention group received an alert each hour as an audible reminder through the university scheduling system as well as a text message to remind them to get up and move. At the end of week two, both groups completed the PWS for the third time. Results concluded there was not a statistically significant difference in sedentary behaviors over time. However, there was a significant increase in perceived wellness from baseline for both groups, but there was no statistically significant difference between the control and the intervention group as far as perceived wellness improvement. The researchers suggested that by simply including employees in an activity-monitoring program might have been enough to improve perceived wellness even if their behaviors did not change. It is further suggested to observe participants for a longer period of time and see if perceived wellness returns to baseline or if there are improvements in health outcomes.

Roscoe (2009) examined a variety of wellness measurements and concluded that most, if not all, were quantitative self-assessments. Roscoe (2009) as well as Lorion, Cicchettie, Rappaort, Sandler, & Weissberg (2000) suggested there needed to be more qualitative assessments or a combination of qualitative and quantitative to better understand the complexities of wellness and behavior change programs and to move away from just categorizing individuals as “well” and “unwell”.

Transtheoretical Model of Change (TTM)

The four most commonly referenced individual behavior change models are: TTM, social cognitive theory, theory of planned behavior and the health belief model (Oldenberg, Glantz, & Ffrench, 1999; Redding, Rossi, Rossi, Velicer, & Prochaska, 2000). The TTM is one of the most often-used behavior change models used in research as it assumes behavior change is a dynamic process that can occur in a linear or nonlinear fashion. The TTM is a framework looking at

individuals' motivation for changing physical activity habits, barriers to change, benefits of change, and specific interventions that promote change (Marcus & Forsyth, 2009; Norcross, Krebs, & Prochaska, 2011). The four main constructs of the model include processes of change, decisional balance, self-efficacy, and stages of change (Marcus & Forsyth, 2009; Norcross et al., 2011; Spencer, Adams, Malone, Roy, & Yost, 2006). Several research studies indicated that physical activity interventions using theoretical frameworks such as TTM of change increase physical activity behavior among sedentary adults (Al-Otaibi, 2013; Marcus & Lewis, 2003; Oldenburg et al., 1999; Prochaska, DiClemente, & Norcross, 1992; Spencer et al., 2006) and exercise behavior was significantly increased by factors related to the constructs of TTM including: self-efficacy, decisional balance and processes of change in fitness club members (Middelkamp & Steenbergen, 2015).

Processes of Change (POC). One construct of the TTM is the POC, which suggests for individuals to progress through the dimensions of change, they must become more aware of the pros of changing. There are 10 POCs (five experiential and five behavioral) that individuals experience as they go through behavioral change (Oldenburg et al., 1999). The experiential processes include: consciousness awareness which brings about awareness by education; dramatic relief which can be affective aspects of change or inspiration because the individual sees that others can overcome the negative behavior; self-reevaluation which means the individual realizes the healthy behavior is something they want to be a part of them; environmental reevaluation which helps the individual see how the negative behavior is affecting those around and how by adopting a more positive behavior it can positively impact others around; is social liberation which means they understand that society as a whole is more supportive of the healthy behavior versus the unhealthy behavior. The behavioral processes include: self-liberation which means the individual believes in himself to make the change and

commits to the change; helping relationships which mean the individual finds like-minded individuals to be surrounded by which will provide support; counter-conditioning which means the individual will find healthy behaviors to replace the negative behaviors; reinforcement management which means the individual creates positive rewards for good behaviors and reduces rewards for displays of negative behavior; stimulus control which means the individual uses positive sayings, cues, etc. to provide encouragement to continue with the positive health behaviors (Middelkamp & Steenbergen, 2015; Oldenburg et al., 1999).

Decisional Balance (DB). Marcus and Forsyth (2009) suggest that DB is the process of the individual weighing out the advantages (pros) or disadvantages (cons) of behavior change. In regards to physical activity, the individual's perception of the benefits (i.e., lower risk for CVD, better weight management, increased energy and mood) of physical activity compared to the downside. The decisional process may include perceived environmental barriers that prevent individuals from participating in physical activity such as the weather, unsafe areas and lack of recreational areas. More personal perceived barriers include lack of time, lack of energy, fear of becoming injured, unmotivated and lack of social support. Depending on the stage of change (SOC), the individual is in, the balance of the pros and cons are affected. In the precontemplation stage, the cons outweigh the pros because there are more perceived barriers than benefits of change. In stages contemplation, preparation and action, the pros surpass the cons because there are fewer barriers. The fewer perceived barriers, the more likely an individual will become active and stay active. In addition, when individuals have a more positive perception of physical activity versus a negative perception, it has been shown to predict gains in physical activity behavior (Dunn et al., 1997).

Self-Efficacy (SE). Self-efficacy is the confidence in the individual's ability to perform specific tasks in certain situations (Bandura, 1977). Concerning physical activity or altering

health behaviors, SE refers to the individual's perceived ability to successfully deal with high stress situations that might discourage them from continuing to participate in the healthy behavior (Fahey et al., 2013). Self-efficacy is situation specific and as self-efficacy changes, it can help predict lasting changed behavior. For example, individuals had a higher SE participating in a walking program during warmer seasons such as spring and summer as opposed to colder seasons like fall and winter (Marcus & Forsyth, 2009). They also reported SE in individuals was high when the activity was walking, but individuals portrayed low self-efficacy in activities such as running, swimming and cycling. Social cognitive theory suggests that self-efficacy is the key mediator of behavior change (Bandura, 1986; Bandura, 1997). Individuals' physical activity self-efficacy usually increases as the individual becomes more active (Marcus & Forsyth, 2009). Researchers agree that self-efficacy has been successful at predicting stages of change and that physical activity level can be improved when self-efficacy to exercise is increased (Al-Otaibi, 2013; Bandura, 1997; Ghiami et al., 2015; Marcus & Forsyth, 2009; Marcus and Lewis, 2003) as well as predicting perceived wellness in college students (Sidman, D'Abundo, & Hritz, 2009) with a planned instructional program (i.e., a basic activity class). Additionally reported, SE can be increased with the development of internal locus of control and receiving positive feedback and encouragement from surrounding individuals (Marcus & Forsyth, 2009).

Stages of Change (SOC*).* One aspect of the TTM suggests that individuals progress through a predictable series of stages both cognitively and behaviorally when modifying behavior (Prochaska & DiClemente, 1983). Although individuals typically progress through the stages of change, it is possible they could recycle or regress to earlier or later stages (Prochaska et al., 1992). The stages of change is a core construct of the TTM and the stages are defined as follows: (a) precontemplation where individuals do not intend to engage in regular physical

activity within the next six months; (b) contemplation where individuals are preparing to begin the healthy behavior within the next six months; (c) preparation where individuals are ready to begin making changes within the next 30 days; (d) action where individuals have changed their behaviors within the last six months and are working to maintain the behavior change; and (e) maintenance where individuals have been participating in the behavior for over six months with no regression (Fahey et al., 2015; Hales, 2013; Marcus & Forsyth, 2009; Norcross et al., 2011).

Norcross et al. (2011) conducted a meta-analysis of 39 studies to investigate the effectiveness of stages of change and related readiness measures to predict psychotherapy outcomes. While the SOC Model was originally developed for smokers that wanted to quit smoking, it was effectively used in reference to other physical behavior changes such as physical activity and exercise (Middelkamp & Steenbergen, 2015) and with adult health care workers who engaged in a walking program to advance stage of change (Jo et al., 2010). The meta-analysis aimed to address the ability of stages of change and related readiness measures to predict psychotherapy and to patient-treatment match depending on specific stages of the patient identified in. The following were some of the recommendations to increase treatment outcomes:

> (1) Assess the client's stage of change, (2) beware of treating all clients as if they were in action, set realistic goals by moving one stage at a time, (3) treat precontemplaters gingerly, (4) tailor the processes to the stage, (5) avoid mismatching stages and processes, (6) prescribe stage-matched relationships of choice as well as treatments of choice (pp. 151-152).

Although the above study focused on psychotherapy behaviors, the recommendations to increase treatment outcomes can be applied when developing strategies and interventions based on physical activity behaviors and the adoption of other health behaviors (Prochaska, DiClemente, & Norcross, 1992).

Targeted and Tailored Behavior Change Interventions. Frequently, researchers use the terms targeted and tailored interchangeably, however, there are differences. A targeted intervention is directed towards a specific group, which is based on variables, such as stages of motivational readiness. Tailored interventions are, "customized to each individual by deriving the messages based on several variables believed to be important for changing the particular target behavior" (Marcus & Lewis, 2003, p. 2). Research has shown that both targeted and tailored approaches based on the stages of change model can be effective for advancing physical activity (Marcus & Forsyth, 2009) and to enhance physical activity outcomes, tailoring to the participant's stage of change is important (Marcus, et al., 1998).

A systematic review of 34 TTM intervention articles conducted by Hutchinson, Breckon, and Johnston (2008) reported that 24 of the interventions used stages of change to tailor to participant needs. Seven of the 24 interventions used all four TTM constructs (i.e. stages of change, self-efficacy, processes of change, decisional balance) when developing interventions and saw significant short-term (less than six months) findings in 86% (six) of seven studies and long-term (six months or longer) findings in one study. Of the 17 interventions that were not tailored to all four constructs, 71% (12) found significant short-term findings and one found long-term significant findings. Hutchinson, et al. (2008) argued the importance of investigating the accuracy of an intervention by applying all aspects of the theoretical model and not just certain constructs.

Marcus and Lewis (2003) identified appropriate interventions for individuals identifying in certain stages of change, along with other constructs of the TTM. The following intervention strategies were identified: (a) individuals in the precontemplation stage should have information about becoming active and how physical activity can have a positive impact; (b) individuals in the contemplation stage should focus on the pros and cons of physical activity and given

information on how to begin being physically active and how to make it a part of their daily life; (c) individuals in the preparation stage should have social support and set realistic daily, weekly, and monthly goals and using a pedometer is a good way to self-monitor physical activity as well as motivate by providing feedback (Tudor-Locke, 2002); and (d) individuals in the action and maintenance stages need to identify risk factors and barriers that might arise such as vacations, boredom of the activity, illness, stressful life events such as losing a job, death in the family and the birth of a child.

With these intervention strategies in mind, Higgins et al. (2014) conducted a meta-analysis quantifying the effect of interventions to increase healthy adults' physical activity on exercise task self-efficacy (EXSE) and barrier self-efficacy (BSE). The researchers suggested that until the psychological processes that drive physical activity change can be identified, it is unlikely that interventions will be delivered appropriately and optimally to improve physical activity behaviors. Previously discussed findings related to participant characteristics such as age included: interventions enhanced BSE and physical activity among healthy and middle-aged adults; middle-aged adults said the most significant barriers to exercise are lack of time due to work and other responsibilities. When investigating activity levels, interventions were more successful getting people who do not regularly exercise to add small amounts of PA to their routines, when compared to active people increasing their exercise levels. Duration of interventions can show positive changes in EXSE and physical activity when they last between two weeks and two months. When addressing exercise goals, BSE and physical activity gained when tailored or individualized goals, instead of when standard exercise goals were given to the entire group. The frequency of intervention contact did not support a decrease in physical activity changes. However, the absence of support and decrease in contact was linked with higher BSE. Daily monitoring of physical activity does not improve exercise SE beliefs;

however, immediate self-monitoring was linked to an effective behavioral approach for increasing physical activity levels. Recommendations for the meta-analysis for intervention strategies included: (1) interventions focus on teaching how to exercise within the participant's surrounding environment; (2) focus on strategies that encourage exercise into daily routines without the need of supervision or guidance; (3) build a sense of independence so participants do not feel they must rely on face-to-face interventions, which cause barriers.

In general, Higgins et al. (2014), concluded that for there to be an increase in physical activity, most gains occur when interventions educate participants how to integrate exercise into daily routines and some gains occur when participants are provided strategies for overcoming health concerns and changing priorities and should focus on behavioral strategies (i.e., goal setting, self-monitoring, rewards) over cognitive strategies (decision making, health education, providing information) (Conn et al., 2011). Using activity logs has been suggested as a way to monitor goals and changes and found that self-monitoring (i.e., exercise log) does increase physical activity (Michie, Abraham, Whittington, McAteer, & Gupta, 2009), while Higgins et al. (2014) claimed that physical activity improvements were observed when activity logs were not used as well.

While the benefit of behavioral interventions is known, delivery of the intervention is debated. Some researchers found face-to-face delivery to be more effective than mediated delivery of interventions to increase physical activity (Conn et al., 2001). Others reported that delivery did not significantly have an effect on physical activity interventions (Higgins, et al., 2014); but that mediated delivery reached a wider audience (Abrams, et al., 1996) and were lower in cost (Lewis, Williams, Neighbors, Jakicic, & Marcus, 2010). More specifically, Zacharia, et al., (2013), asserted that internet-based PA interventions were just as effective as traditional methods in the workplace. Additionally, an intervention that used motivational

interviews found in older adults increased physical activity from pretest to posttest and higher self-efficacy and greater stage progression from pre to post and six months after the completion of the study (Lilenthal, Pignol, Holm, & Vogeltanz-Holm, 2014)

There have been many studies that used interventions to investigate change in physical activity levels, yet understanding the basis for the change has been limited. More attention needs to be placed on the affective response to PA in behavior change programs (Papandonatos, et al., (2012). Hutchison (2009) suggested other processes of PA behavior change might exist and there is a need to look beyond already studied theoretical frameworks. Hutchison (2009) suggested different approaches to better understanding behavior-change PA could be done through a shift from quantitative research to qualitative. Open-ended research with exploratory approaches has rarely been done in PA behavior change studies.

Summary

In summary, employers benefit from worksite wellness programs by increasing job satisfaction, reducing job absenteeism and lower healthcare costs due to having healthier employees (Haines et al., 2007; Parkman & Steel, 2008). Due to low employee participation (Linnan et al, 2010) and an attrition rate of 50% (Haines et al., 2007), much research has focused on improving worksite wellness programs, encouraging participation and identifying and eliminating barriers to help with retention. With past success of using a mediated delivery system (Higgin et al., 2014), behavioral interventions can reach larger and more spread out audiences than before (Abrams et al., 1996) and at a lower cost than previously used delivery methods (Lewis et al., 2010). Physical activity interventions using theoretical frameworks such as the Transtheoretical Model of Change can increase physical activity among sedentary adults (Al-Otaibi, 2013; Marcus et al., 1998; Prochaska et al., 1992). Even more, studies that used a stage-matched tailored intervention approach showed statistically significant short-term findings and

some long-term findings (Hutchinson et al., 2008). Conn et al. (2011) recommended that until the psychological process involving successful participation and maintenance of regular exercise or physical activity is better understood, it is unlikely interventions can be delivered favorably to improve physical activity behavior. Thus, the purpose of this explanatory sequential mixed methods study was to investigate the effects of an employee wellness program: (1) on perceived wellness, (2) on the constructs of the Transtheoretical Model of Change (TTM), and (3) to examine employee perceptions of the wellness program.

CHAPTER III

METHODOLOGY

Numerous researchers have investigated worksite wellness programs and physical activity interventions (Butler, et al., 2015; Ghiami, et al., 2015; Haines, et al., 2007; Williams, et al., 2011). Some individual studies showed positive gains in increased physical activity and behavior changes (Butler, et al., 2015; Ghiami, et al., 2015; Haines, et al., 2007; Williams, et al., 2011). In addition, a systematic review including 23 studies (Robroek, et al., 2009) and meta-analysis studies including a combined 375 studies and reports (Conn, et al., 2011; Parks and Steelman, 2008) also showed positive gains in increased physical activity and behavior changes. However, another systematic review showed that 32 of 58 studies showed a statistically significant increase in physical activity and that worksite wellness physical activity interventions can be successful; however, overall results for the systematic review were inconclusive in terms of positive gains in behavior changes (Malik et al., 2014). With contradictory results of the effectiveness of worksite wellness programs and physical activity behavior interventions, more research is needed to better understand why there are such contradictory results.

This chapter outlines the research methods and statistical procedures for the study. The sections are divided according to purposes, participants, research design, instrumentation, data procedures, and data analysis.

Purpose

The purpose of this mixed methods wellness program study was to investigate the effects of an employee wellness program: (1) on perceived wellness, (2) on the constructs of the Transtheoretical Model of Change (TTM), and (3) to examine employee perceptions of the wellness program.

Participants

Employees comprised of faculty (73%) and staff (27%) from a rural community college in a southeastern town served as participants in this study and represented various job roles at the institution. Additionally, participants were from diverse areas on the campus that included: academic instructors (34.7%), health sciences instructors (38.7%) and various staff (26.7%) members including financial aid, maintenance, student services, health sciences, academic administration, health sciences administration, public relations, technical staff, records office, adult education, admissions and business office. Participation was voluntary and confidentiality was ensured. The researcher introduced the program to the potential participants during professional development two months prior to the beginning of the program. One week prior to the beginning of the program, employees received an invitation to participate in the program through a work email. Institutional Review Board (IRB) approval was obtained prior to any data collection. All participants provided informed consent (Appendix A) in compliance with the University's Institutional Review Board.

Ethical Issues. The Dean of Academics granted permission (in person) to conduct the study at the college and confirmed permission through email (Appendix B). All employees of the college received an email inviting them to participate in the voluntary 12-week wellness program. Participants could withdraw from the program at any time. Once participants registered (on paper) for the program (Appendix C), they received an invite from Scout (online platform) to participate. Each participant filled out a consent form (in Scout) upon being invited into the course, prior to participating in any aspect of the program. Any information obtained in connection with this study that can be identified with participants remained confidential. The researcher used a pseudonym for the online platform used by the college. All data was kept confidential in Scout and will be destroyed one year after completion of the study. The principal

investigator, dissertation committee chair and the IT (information technology) workers were the only individuals with access to the data.

Research Design

The researcher proposed to conduct an explanatory sequential mixed methods study (Creswell, 2014). Data was collected using five data points, which included surveys, journal entries, data logs, semi-structured interviews and focus groups. Both qualitative and quantitative data was collected in Pre-Program Surveys (PRPS) and Post-Program Surveys (POPS) (Figure 1).

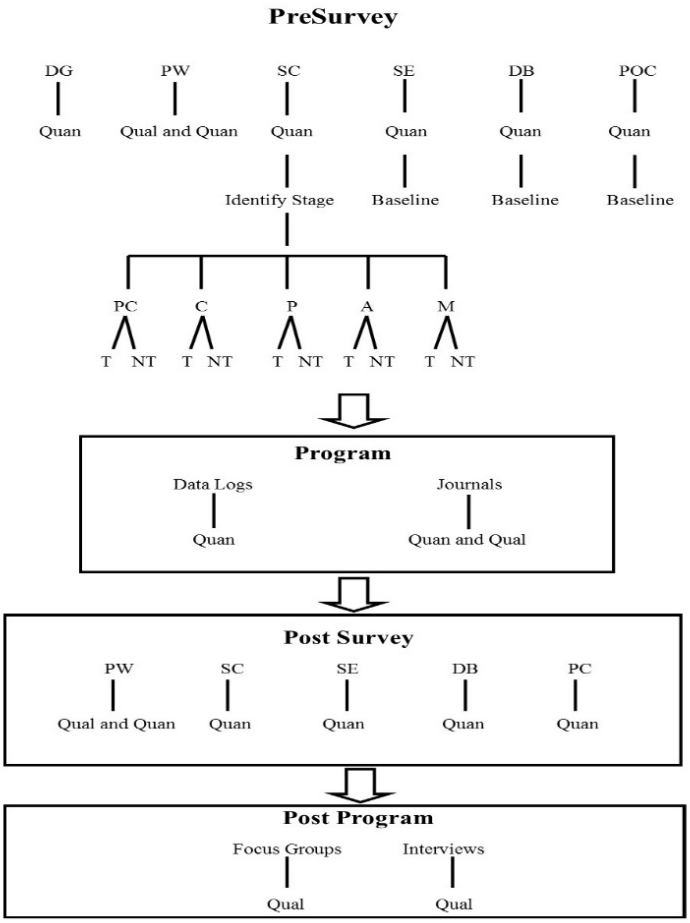


Figure 1. Methodology Flow Chart
Notes: DG=Demographics, PW=Perceived Wellness, SC=Stages of Change, SE=Self-Efficacy, DB=Decisional Balance, POC=Processes of Change, PC=Precontemplation, C=Contemplation, P=Preparation, A=Action, M=Maintenance

Quantitative data was collected using a pretest-posttest design on the dependent variables for this study: perceived wellness (Table 1) and the four TTM constructs (Table 2) and qualitative data was collected on the participants perceptions of the wellness program (Table 3). Pre and post wellness program surveys were conducted for perceived wellness (Appendix D) and the four TTM constructs (stages of change, self-efficacy, decisional balance, processes of change) (Appendices E-H). Health behaviors (steps, water-intake, sleep, nutrition) were logged daily when appropriate and were analyzed post program. The independent variable in the proposed study was the 12-week wellness program. During the intervention, half of the participants in each stage of change (i.e., contemplation, preparation, action, maintenance) received tailored information (Appendices I-R) during the program and served as the treatment group. The other set of participants did not receive tailored information and they served as the comparison group. All participants received the targeted information concerning health behaviors (i.e., steps, water-intake, sleep, nutrition) and dimensions of wellness (i.e. physical, emotional, intellectual, social, spiritual, psychological) through Scout by announcements (health behaviors) and videos (dimensions of wellness).

Qualitative data was collected during the program through weekly reflective journal entries (Appendix R). At the end of the program, purposeful stratified sampling (Patton, 2014) was used to invite participants to participate in semi-structured interviews and purposeful random sampling was used for focus groups.

Table 1

Data Analysis of Each Data Source for Research Question 1

RQ1: What effect does the wellness program have on employee perceived wellness?

Data Source	Quantitative Item	Qualitative Item
Perceived Wellness Survey	36 items	1, 2, 3, 4, 5
Journal Entries	Weeks 2, 4, 6, 8, 10, 12 Q 3	Weeks 1-12 1,2 Weeks 2, 4, 6, 8, 10, 12 Q 4
Interviews and Focus Groups		Questions derived from themes.

Table 2

Data Analysis of Each Data Source for Research Question 2

RQ2: What effect does a tailored and targeted wellness program have on the four constructs of the Transtheoretical Model of Change?

Data Source	Quantitative Item	Qualitative Item
Physical Activity Stages of Change	1-4	
Confidence (Self-Efficacy)	1-5	
Decisional Balance	1-16	
Processes of Change	1-40	
Journal Entries		Themes developed from prompted questions.
Interviews and Focus Groups		Themes developed from prompted questions.

Table 3

Data Analysis of Each Data Source for Research Question 3

RQ3: What are participant perceptions prior, during and after the wellness program?

Data Source	Quantitative Item	Qualitative Item
Perceived Wellness Survey	36 items	1, 2, 3, 4, 5
Journal Entries		Weeks 1-12 Q 1, 2
Interviews and Focus Groups		Questions derived from themes.

Instrumentation

In the quantitative part of the study, several instruments were used to measure the four constructs of the TTM and of Perceived Wellness.

TTM Constructs. The following instruments are valid and reliable and were administered pre and post intervention. Permission to reproduce and use the following TTM questionnaires was granted to anyone who purchased *Motivating People to Be Physically Active* by Bess Marcus and LeighAnn Forsyth (2009), which was purchased by the researcher.

Stages of Change. Participants self-identified in the precontemplation, contemplation, preparation, action, or maintenance stage of change with the *Physical Activity Stages of Change Questionnaire* (Marcus et al., 1992). There are four items on the scale measured on a dichotomous scale with No = 0 and Yes = 1 (Appendix E). The instrument has been found to be reliable by Marcus, Selby, Niaura and Rossi (1992) and has been used by previous researchers (Ghiami et al., 2015). The Kappa index of reliability over a 2-week period was .78. In addition, concurrent validity was demonstrated by its significant association with the *Seven Day Recall Physical Activity Questionnaire* (Marcus & Simkin, 1993).

Self-Efficacy. Exercise self-efficacy was measured using the *Confidence (Self-efficacy) Questionnaire* developed by Marcus et al. (1992), which is comprised of five items that measure on a five-point scale ranging from 1 "cannot do" to 5 "certain can do" (Appendix F). Participants specified their level of confidence in their potential to perform physical activity and exercise in different situations. Self-efficacy was measured by calculating the cumulative average of all five questions, which has previously been done by Ghiami et al., (2015). Marcus and Forsyth (2009) recommended administering the instrument every three months. This instrument has demonstrated an internal consistency of .76, test-retest reliability of .90 and correlated with the stage of change of physical activity ($p < .001$; Marcus et al., 1992)

Processes of Change. Processes of change was measured using the *Processes of Change Questionnaire* (Appendix H) developed by Marcus, Rossi, Selby, Niaura and Abrams (1992). The instrument includes 40 items measuring the 10 processes of change. There are four questions from each of the constructs of the processes of change (Table 4). Five of the processes are behavior based (i.e., substituting alternatives, enlisting social support, rewarding yourself, committing yourself, and reminding yourself) and five are cognitive based (increasing knowledge, warning of risks, caring about consequence to others, comprehending benefits, and increasing healthy opportunities) (Prochaska, et al., 1992), which were used to help assess psychological elements linked to exercise and physical activity behavior change. Participants rated the frequency of the use of each process of change item, in the past month, on a 5-point Likert-type scale ranging from 1 ("never") to 5, ("repeatedly"). For example, if the item states, "I tell myself I am able to be physically active if I want to", then the participant would mark the frequency of how often that occurs. The collective score of all 40 items were averaged to give each participant an overall score (Marcus & Forsyth, 2009). The *Processes of Change* has been shown to have a high internal consistency of .83 and correlated with the stage of change of

physical activity ($p < .001$; Marcus, et al., 1992). Average processes of change scores collected from previous studies, categorized by stage of change from previous studies, for each of the 10 process of change constructs are below (See Table 5).

Table 4

Grouping Related Items on the Processes of Change Questionnaire

Process	Items
Increasing knowledge	5, 8, 17, 28
Being aware of risks	11, 12, 13, 14
Caring about consequences to others	30, 33, 34, 37
Comprehending benefits	15, 31, 35, 38
Increasing healthy opportunities	10, 22, 32, 36
Substituting alternatives	1, 21, 39, 40
Enlisting social support	16, 19, 24, 25
Rewarding oneself	7, 18, 20, 23
Committing oneself	2, 4, 6, 27
Reminding oneself	3, 9, 26, 29

Adapted from B. Marcus and L. Forsyth, 2009, *Motivating people to be physically active*, 2nd ed. (Champaign, IL: Human Kinetics).

Table 5

Average Scores by Stage from the Processes of Change Questionnaire

	Stages of Change				
Process	PC	C	P	A	M
Increasing knowledge	1.88	2.57	2.76	3.11	2.99
Being aware of risks	1.92	2.41	2.26	2.72	2.46
Caring about consequences to	1.82	2.43	2.46	2.74	2.47
Comprehending benefits	2.14	3.13	3.22	3.66	3.28
Increasing healthy opportunities	2.14	2.55	2.75	2.81	2.79
Substituting alternatives	1.71	2.24	2.72	3.35	3.55
Enlisting social support	1.78	2.25	2.42	2.80	2.64
Rewarding oneself	1.52	2.25	2.54	2.99	3.01
Committing oneself	2.08	2.94	3.17	3.83	3.68
Reminding oneself	1.42	1.85	2.02	2.30	2.20

Notes: PC = Precontemplation, C=Contemplation, P=Preparation, A=Action, M=Maintenance
Adapted from B. Marcus and L. Forsyth, 2009, *Motivating people to be physically active*, 2nd ed. (Champaign, IL: Human Kinetics).

Decisional Balance. Participants evaluated the pros and cons of being physically active by answering 16 questions on the *Decisional Balance Questionnaire* (See Appendix G) by Marcus, Rakowski and Rossi (1992). Participants rated the significance of statements pertaining to the decision to exercise on a 5-point Likert-type scale ranging from 1 ("cannot do") to 5 ("certain can do"). There are 10 "pro" items and six "con" items (See Table 6). The difference in the averages (i.e. pros minus cons) is the decisional balance score. The higher the score, the more benefits the participant sees as opposed to barriers. If the participant's score is less than "0", then barriers over-power benefits. Both the *Decisional Balance Questionnaire* and *Self-Efficacy*

Questionnaire will also help assess psychological elements linked to exercise behavior change. Both Napolitano et al. (2008) and Williams et al. (2008) showed sensitivity to change and predictive validity in the measures used to assess cognitive and behavioral processes of change, self-efficacy and decisional balance. Internal consistency was moderately high (.79 for pros; .95 for cons) and correlated with the stage of change of physical activity ($p < .001$; Marcus et al., 1992).

Table 6

Decisional Balance Items

Pros/Cons	Items
Pros	1, 2, 4, 5, 6, 8, 9, 10, 12, 14
Cons	3, 7, 11, 13, 15, 16

Perceived Wellness Survey. To assess participant perceived wellness, the *Perceived Wellness Survey* (PWS) (Appendix D) was used. The PWS is a 36 items six-point Likert-type scale instrument comprised of six subscales (i.e. physical, emotional, intellectual, social, spiritual, psychological) (Adams, Bezner, & Steinhardt, 1997). Permission to use the *Perceived Wellness Survey* was given by Dr. Troy Adams through email (See Appendix S). The survey contains six questions from each of the six dimensions of wellness.

The items, scored on a six-point Likert-type scale, range from 1 (very strongly disagree) to 6 (very strongly agree). While numbers, 2 – 5, do not have descriptors above them, it is implied that the lower numbers indicate disagreement with the statement and the higher numbers indicate agreement. Each perceived wellness dimension is scored by adding the numbers together and dividing that number by six. Items 2, 4, 7, 9, 11, 12, 14, 17, 20, 25, 27, 29, 31, 34, and 36 require reverse scoring as follows: 1 = 6, 2 = 5, 3 = 4, 4 = 3, 5 = 2, and 6 = 1. Through a

series of more mathematical steps, the wellness score for each dimension is calculated (Appendix T). Each subscale is designed so it can be used as an independent measure of each wellness dimension. Internal consistency reported for the subscales were physical (α = .81), psychological (α = .71), emotional (α = .74), intellectual (α = .64), spiritual (α = .77), and social (α = .64). Discriminant validity was assessed using t-test comparison of composite scores of well and unwell groups (Adams et al., 1997). Psychometric properties are as follows: convergent validity (r = .37 to .56) and internal consistency (α = .89 to .91). The total scale internal consistency was tested on a combined sample (n = 558) and α = .91. Internal consistency for the total scale ranged from α = .88 to .93 (Adams et al., 1997). Alpha levels close to 1.00 indicates a very high internal consistency (Lomax & Hahs-Vaughn, 2012).

Physical Activity. Physical activity was self-reported and monitored by tracking steps (i.e. Fitbits, pedometers, phone apps) and recording them in Scout. Physical activity data analysis used individual participant steps in weeks one and 12 to gauge if there was a significant increase in steps.

Procedures

Implementation of the Wellness Intervention Program. The researcher created a 12-week wellness program that focused on four health behaviors (i.e. steps, water-intake, sleep, nutrition) since a 12-week walking program has shown to improve the health and wellness of employees. The program was delivered virtually through Scout, which is the online platform the college uses to deliver course content to students (Appendix U), which also has an accompanying app that can be used on smartphones and other electronic devices.

Prior to Intervention. The intervention used a team-based format. Participants self-selected teams to include five to nine members, comprised of employees or non-employees of the College (i.e., employee spouse, friend, sibling, partner). Non-employees were not included in

the study. Williams et al., (2011) found that social support showed great increases in physical activity outcomes from participants. No more than three team members could be from outside the college; this was to prevent "stacking" of teams by recruiting non-employee participants that could favorably affect team results (i.e., local cross-country runners). Teams selected a team-captain to help facilitate the registration process and to remind team members to complete surveys and submit data properly and on time. A few days prior to the program, the researcher met with all team-captains to discuss procedures and rules of the program. Also prior to the program, pedometers (*Active Step 200* by Gopher), the only equipment besides a computer needed for the wellness program, were distributed by the researcher to all participants who needed one. Participants could have chosen to use other devices to track steps (i.e., apps on personal phone, Fitbit, Fuel Band, Jawbone). In addition, before the start of the program participants completed the PRPS, including demographics (Appendix V), perceived wellness, stages of change, processes of change, decisional balance and self-efficacy questions.

During the Intervention. Each team member was responsible for recording daily data into Scout. Team averages for each of the four behaviors were compared to other competing teams. A winner was granted every three weeks for the new health behavior in focus. For example, if there are 20 teams in the wellness program and all 20 teams recorded their data in Scout properly and on time, the team with the highest average of steps for weeks one through three would win for that quarter. In addition, a random drawing winner was granted to any team that did not have the highest average number of steps, but did record their team data in Scout properly and on time. Therefore, there were two winning teams each quarter.

During the program, participants logged behavior data daily and completed guided open-ended questions in weekly journal entries inside the online platform by responding to open-

ended prompted questions (See appendix R). Each week participants responded to three standard questions:

(1) What were some positives that happened during the week?

(2) What were some things you wished had gone differently during the week?

(3) At the beginning of each even numbered week of the program, there was a question assessing one of the perceived dimensions of wellness. The first part of the question was multiple choice and it asked the participant to rate their perceived wellness for that dimension after being exposed to a targeted intervention the prior week. The second part of the question was an open-ended prompted question asking the participant to describe any effect the information had on his or her rating of perceived physical wellness over the past few weeks.

Targeted information in the form of short videos (Appendix W) centered on a different dimension of wellness (physical, emotional, intellectual, spiritual, psychological, social) was provided every two weeks through Scout (See Table 8). Additionally, targeted information concerning one of the four physical behaviors (walking, water-intake, sleep, nutrition) was given to participants every three weeks in the form of "announcements" in Scout. Participants strived to reach at least 10,000 steps per day and recorded daily progress in a designated area inside of the online platform. Every three weeks of the program, a new behavior was introduced making the program gradually increase in difficulty. The first three weeks of the program, participants solely focused on achieving at least 10,000 steps per day. Beginning week four, participants continued keeping track of their steps as well as water-intake. The goal was for each participant to drink half their body weight in ounces of water per day. Therefore, during weeks four through six, participants focused on two behaviors. During weeks seven, eight and nine, participants focused on three health behaviors with the introduction of hours of sleep per night. Participants had a goal of seven to eight hours of sleep each night. Weeks 10, 11 and 12 consisted of tracking

all four-health behaviors including the new behavior that focused on nutrition. Participants had a goal of consuming five servings of fruits and vegetables combined per day, while still keeping up with steps, water-intake and sleep.

Tailored interventions depending on the participant's self-identified stage of change were provided (See Appendices I - R). The tailored interventions consisted of reading short articles and completing brief activity sheets. For example, if a participant identified in the contemplation stage of change for physical activity, the participant received interventions that provided information about the importance of physical activity and how to get started being physically active. A person in action phase received tailored interventions focusing on ways to overcome possible upcoming barriers such as weather, holidays and sickness. The goal was to help the participant continue being physically active by finding ways to encourage the continued physical activity as well as overcoming relapses (See Tables 7 & 8).

Table 7

Stage and Tailored Intervention Topics

Stage	Topics for Creating-Stage Appropriate Material
Precontemplation	Health benefits of physical activity
	Overcoming common excuses
Contemplation	Increasing lifestyle activity
	Considering benefits and barriers
	Setting short and long-term goals
	Rewards
Preparation	Goal setting
	Developing a walking program
	Tips for enjoying physical activity
	Fitting more activity into a busy schedule
Action	Overcoming obstacles
	Preventing boredom
	Gaining social support
	Increasing confidence in staying active
Maintenance	Avoiding injury
	Trying new activities
	Planning ahead for difficult situations
	Rewards

Adapted from B. Marcus and L. Forsyth, 2009, *Motivating people to be physically active*, 2nd ed. (Champaign, IL: Human Kinetics)

Table 8

Wellness Program Interventions By Week

Time	Type	Stage Appropriate Topic				
		PC	C	P	A	M
Week 1	Targeted physical dimension	Importance of steps, water, sleep & nutrition	Importance of steps, water, sleep & nutrition	Importance of steps, water, sleep & nutrition	Importance of steps, water, sleep & nutrition	Importance of steps, water, sleep & nutrition
Week 2	Tailored physical dimension	From the couch to the pavement	From the couch to the pavement	From the couch to the pavement	Goal setting	Goal setting
Week 3	Targeted emotional dimension	Ways to enhance emotional dimension	Ways to enhance emotional dimension	Ways to enhance emotional dimension	Ways to enhance emotional dimension	Ways to enhance emotional dimension
Week 4	Tailored physical dimension	Make exercise work for you	Make exercise work for you	Make exercise work for you	Breaking Down Barriers	Breaking Down Barriers
Week 5	Targeted intellectual dimension	Ways to enhance intellectual dimension	Ways to enhance intellectual dimension	Ways to enhance intellectual dimension	Ways to enhance intellectual dimension	Ways to enhance intellectual dimension
Week 6	Tailored physical dimension	Warming up and cooling down	Warming up and cooling down	Warming up and cooling down	Preventing injuries during workouts	Preventing injuries during workouts
Week 7	Targeted social dimension	Ways to enhance social dimension	Ways to enhance social dimension	Ways to enhance social dimension	Ways to enhance social dimension	Ways to enhance social dimension
Week 8	Tailored physical dimension	5 steps to enjoying exercise	5 steps to enjoying exercise	5 steps to enjoying exercise	Food as fuel	Food as fuel

Week 9	Targeted spiritual dimension	Ways to enhance spiritual dimension	Ways to enhance spiritual dimension	Ways to enhance spiritual dimension	Ways to enhance spiritual dimension	Ways to enhance spiritual dimension
Week 10	Tailored physical dimension	Celebrating your fitness success	Celebrating your fitness success	Celebrating your fitness success	Celebrating your fitness success	Celebrating your fitness success
Week 11	Targeted psycho-logical dimension	Ways to enhance psychological dimension	Ways to enhance psychological dimension	Ways to enhance psychological dimension	Ways to enhance psychological dimension	Ways to enhance psychological dimension

Notes: PC = Precontemplation, C=Contemplation, P=Preparation, A=Action, M=Maintenance

Findings from Ghiami, et al., (2015) concluded that physical activity levels could be improved by increasing exercise self-efficacy, since self-efficacy is considered the best predictor of physical activity among TTM constructs (Nigg & Courneya, 1998). For example, a participant with low self-efficacy should receive interventions that promote ways to increase confidence and overcome challenging situations that could deter physical activity. A participant scoring low on the *Decisional Balance Questionnaire* sees more negative aspects of PA than positives and needs help removing perceived barriers. If a participant scores low on the *Processes of Change Questionnaire*, they may need encouragement on how to change their thinking and their behavior.

Other intervention component findings from Higgins, et al., (2014) that influenced this study were: (1) delivery method, (2) contact and support, (3) exercise logs, and (4) structured exercise. This study did not include any structured exercise sessions. Another important component of interventions is the frequency they are delivered to participants. Higgins, et al.

(2014) emphasizes the tapering away of interventions to help promote self-efficacy, which leads to more physical activity gains (Marcus and Forsyth, 2009).

Completion of Intervention. At the conclusion of the wellness program, participants completed the PRPS with questions including demographics (Appendix X), perceived wellness, stages of change, processes of change, decisional balance and self-efficacy questions. Additionally, purposeful stratified semi-structured interviews (Appendix Y) as well as purposeful random focus groups (Appendix Z) were conducted to collect rich data.

Analyses

Data Analysis Quantitative. A response to research questions one and two, regarding participants' perceptions of perceived wellness and the effects of a tailored and targeted wellness program intervention on the four constructs of the TTM (self-efficacy, decisional balance, processes of change, stages of change), were generated by computing means and standard deviations for each survey. Three repeated measures Analysis of Variance (ANOVA) were used to determine if there were significant differences for the constructs of TTM (self-efficacy, decisional balance, processes of change). A paired samples *t* test was used to determine if there was a significant difference in pre and post wellness composite scores for perceived wellness. A response to research question two, regarding the stages of change (TTM construct) was determined by looking at mean change in stage of the sample to a pre-intervention value of "0". It was hypothesized that the intervention would result in participants moving forward in the SOC. Only subjects in the first four stages of change (precontemplation, contemplation, preparation, action) were used in the analysis. Each stage of change was assigned a number between 1 to 4, with 1 assigned to "precontemplation", 2 to "contemplation", 3 "preparation" and 4 to "action". Participants were assigned: a "1" for each stage in which they moved forward; a "0" if they remained in the same stage; or a "-1" for each stage in they regressed. A one-sample

t test was used to determine mean change in stage of the same to a pre-intervention value of "0". A paired samples *t* test was used to compare week one team mean steps to week 12 steps to see if there was a significant difference. All statistical analyses used the *p-value* of .05 level of significance. SPSS Graduate Pack 21.0 for PC OS X was used for analysis.

Data Analysis Qualitative. A response to research question three regarding perceptions of the wellness program was generated by using grounded theory (Creswell, 2014) to bring structure and meaning to the data by analyzing general statements and relationships among categories. Immersion and crystallization were used to examine the data and then establish and express patterns or themes (Borkan, 1999). Analysis of data involved data reduction and inductive content analysis. Descriptive coding (Saldana, 2012) was used for all qualitative data to assist with identification of concepts using the constant comparison of data with emerging themes and the sampling of different groups to maximize similarities and differences in the data by the researcher. Focused coding (Saldana, 2012) was used for the second cycle of coding by the researcher to ensure specific themes were identified. All data was coded in an effort to reach data content saturation (Patton, 2014) and ensure no new information or themes emerged from the data.

Concepts were independently derived, and crystallization of the content occurred in comparison of patterns and themes. Data that emerged from content frequency resulted in prioritized constructs grouped by inter-rater reliability (Figure 2).

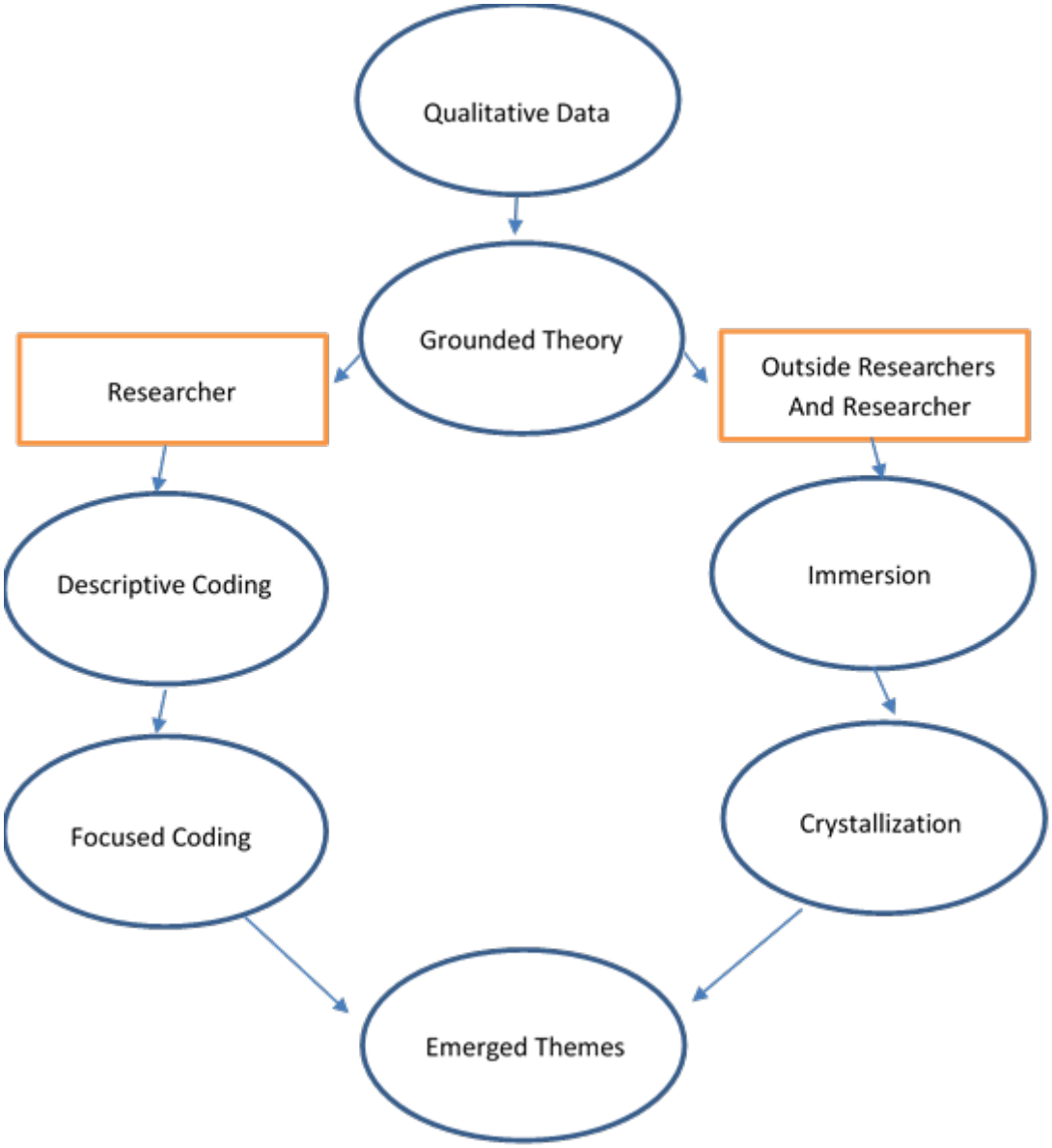


Figure 2. Qualitative Analysis of Themes

Trustworthiness. In qualitative studies, trustworthiness is often questioned because of the difficulty to ensure validity and reliability (Loh, 2013). Qualitative studies use smaller subgroups and populations than quantitative studies, which results to less reliability and validity. Lincoln and Guba (1985) suggested four criteria for establishing trustworthiness: (1) credibility (internal validity), (2) transferability (generalizability), (3) dependability (reliability), and (4) confirmability (objectivity).

Credibility. Credibility can be established using different methods or approaches to confirm ideas (Loh, 2013). In this study, credibility was established through triangulation of data from four separate qualitative sources. Data triangulation is the process of data being confirmed through two or more sources, ensuring the data to be reliable through cross-reference (Teddlie & Abbas, 2009). Data triangulation in this study was accomplished through five separate assessments of content from four qualitative data sources. Data was member-checked and included (1) open-ended questions in pre surveys, (2) journal entries, (3) semi-structured interviews, and (4) focus groups. Results of triangulation process (See Tables 12 - 22) resulted in credible conclusions.

Transferability. Thick description is one way to detail the potential for transferability (Lincoln & Guba, 1985). The data from this study is transferable to other worksites and schools looking to implement wellness programs because the perceptions came from participants of various genders, ages, socioeconomic statuses and job descriptions within the College.

Dependability. Dependability occurs when the results from different researchers are similar (Maxwell, 2012). External audits are one technique to assess adequacy of data and preliminary results (Creswell, 1998). In this study, two researchers not involved in the research process served as two of the five qualitative analysts. This led to strong and clear thematic conclusions. These external auditors included both males and females that analyzed each of the semi-structured interviews and focus groups. Three of the five qualitative analysts analyzed the open-ended questions as well as journal entries.

Confirmability. In qualitative research, confirmability means the researcher's opinions were omitted from data gathered from participants (Maxwell, 2012). In this study, a reflexive qualitative evaluation research design enhanced confirmability. The evaluation included multiple analysts. This inclusion of multiple perspectives fostered dialogue and enabled the

evaluation to be conducted in a context that allowed for any pre-conceived beliefs, values, perspectives, and assumptions to be questioned (Barry, Britten, Barbar, Bradley, & Stevenson, 1999). Four other individuals, along with the researcher, read all interviews and focus groups to ensure consensus on coding, themes and categories.

Summary

For this 12-week mixed methods study, there were five reliable and validated scaled survey instruments used to collect data, namely, *Stages of Change, Self-Efficacy, Processes of Change, Decisional Balance* and *Perceived Wellness.* Quantitative data from these instruments was analyzed pre and post wellness program. Written open-ended questions throughout the wellness program, interviews and focus groups at the conclusion of the program helped gather qualitative data, which was coded by using descriptive and focused coding by the researcher, and outside researchers used immersion and crystallization to ensure dependability by reaching the same themes. Interview participants were selected by purposeful stratified sampling, and focus groups were selected by random purposeful sampling. Precautions such as member checking, using different data collection methods and data triangulation helped ensure the trustworthiness of the evaluation results. In addition, precautions to address ethical issues were taken by guaranteeing confidentiality, having a consent form and obtaining permissions to use survey and questionnaire instruments from the proper sources.

CHAPTER IV

REPORT OF DATA AND DATA ANALYSIS

The purpose of this mixed methods wellness program study was to investigate the effects of an employee wellness program: (1) on perceived wellness, (2) on the constructs of the Transtheoretical Model of Change (TTM), and (3) to examine employee perceptions of the wellness program. Like universities, community colleges are environments that provide safe and aesthetically pleasing places for individuals to walk or run, while also hosting facilities in which physical activity and health assessments can be conducted (Butler et al., 2015). A holistic understanding of this type environment provided better guidelines for implementing a worksite wellness program specifically at a community college. This chapter presents major findings, collected from six pre and post surveys, two focus groups and 16 individual interviews. Community colleges house employees with different levels of education, socioeconomic statuses, health concerns and wellness knowledge than other previously studied settings. The table below provides a summary of the demographic characteristics for participants in this program (Table 9).

Table 9
Demographic Characteristics of Program Participants (N=75)

Demographic Variable	N	%
Gender		
Male	24	32.0
Female	51	68.0
Ethnicity		
White	59	78.7
Black/African American	15	20.0
Pacific Islander	1	1.3
Age		
26-35	15	20.0
36-45	23	30.7
46-55	22	29.3

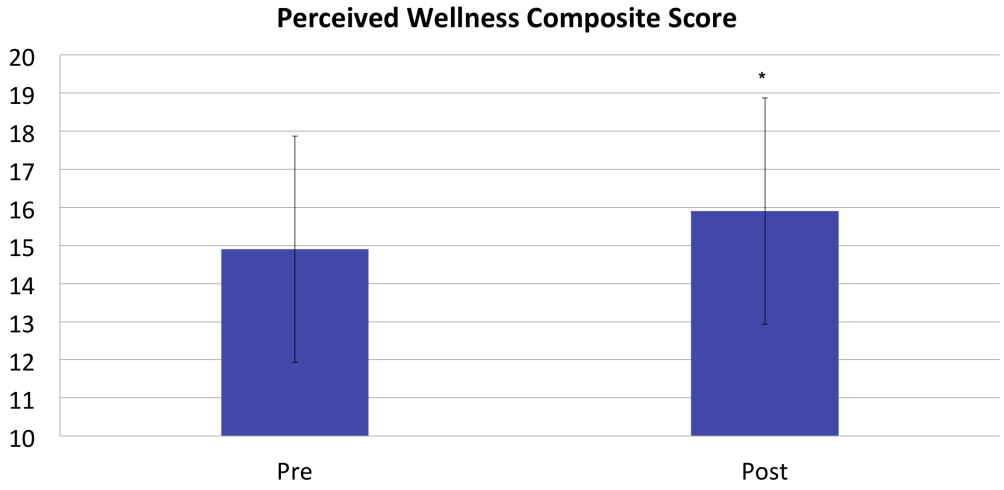
56-65	15	20.0
Highest Level of Education		
Graduated High School	1	1.3
Technical Degree	1	1.3
Associates Degree	4	5.3
Bachelors Degree	16	21.3
Masters Degree	47	62.7
Doctorate Degree	6	8.0
Divisions		
Health Sciences Faculty	29	38.7
Academics Faculty	26	34.7
Staff	20	26.7
Faculty Total of %		
Business	5	6.7
Mathematics	3	4.0
Language Arts	6	8.0
Social Science	5	6.7
Science	6	8
Early Childhood	1	1.3
Emergency Medical Services	4	5.3
Health and Wellness	8	10.7
Radiography	3	4.0
Surgical Technology	2	2.7
Nursing	12	16.0
Staff Total of %		
Business Office	3	4.0
Student Services	4	5.3
Public Relations	1	1.3
Health Sciences Staff	3	4.0
Technical Staff	1	1.3
Records Office	1	1.3
Health Sciences Administration	1	1.3
Financial Aid	1	1.3
Adult Education	1	1.3
Maintenance	2	2.7
Admissions	1	1.3
Academic Administration	1	1.3
BMI		
Underweight	2	2.7
Healthy	18	24.0
Overweight	29	38.7

Obese	20	26.7
Extremely Obese	6	8.0

Quantitative Data

Research Question 1 – Perceived Wellness. What effect does the wellness program have on employee perceived wellness?

***Perceived Wellness Survey*.** Sixty-nine participants from the program completed the pre and post PWS. A paired samples t-test revealed a significant increase between the pre (14.9 ±3.4) and post (15.9 ± 3.0) wellness composite scores, t(68) = -4.832, $p < .001$, $d = .58$ (See Figure 3).



*$p < 0.05$

Figure 3. Pre and Post Perceived Wellness Composite Scores

Research Question 2 – TTM. What effect does a tailored and targeted wellness program intervention have on the four constructs of the Transtheoretical Model of Change (stage of change, self-efficacy, processes of change, and decisional balance)?

***Stages of Change Questionnaire*.** Pre-Survey and post-survey participants self-identified into one of the five stages of change (Table 10). Pre and post surveys indicated there were

changes in the stages of change after the completion of the program. The one-sample t-test resulted in a significant difference ($t(49) = 6.596$, $p < .05$) between the post intervention mean (1.08, ±1.6) and the pre-intervention population mean of "0".

Table 10
Pre and Post Survey Stages of Change Questionnaire Results

	PC	C	P	A	M	Total
Pre-Survey	2 (2.7%)	32 (42.7%)	11 (14.7%)	5 (6.7%)	25 (33.3%)	75
Post-Survey	2 (2.7%)	12 (16.0%)	10 (13.3%)	16 (21.3%)	35 (46.7%)	75
Change	No Change	Decrease	Decrease	Increase	Increase	

Notes: PC = Precontemplation, C=Contemplation, P=Preparation, A=Action, M=Maintenance

Perceptions of the *Confidence (Self-efficacy) Questionnaire*, *Processes of Change Questionnaire* and *Decisional Balance Questionnaire* were measured pre and post wellness program by computing means and standard deviations (See Table 11).

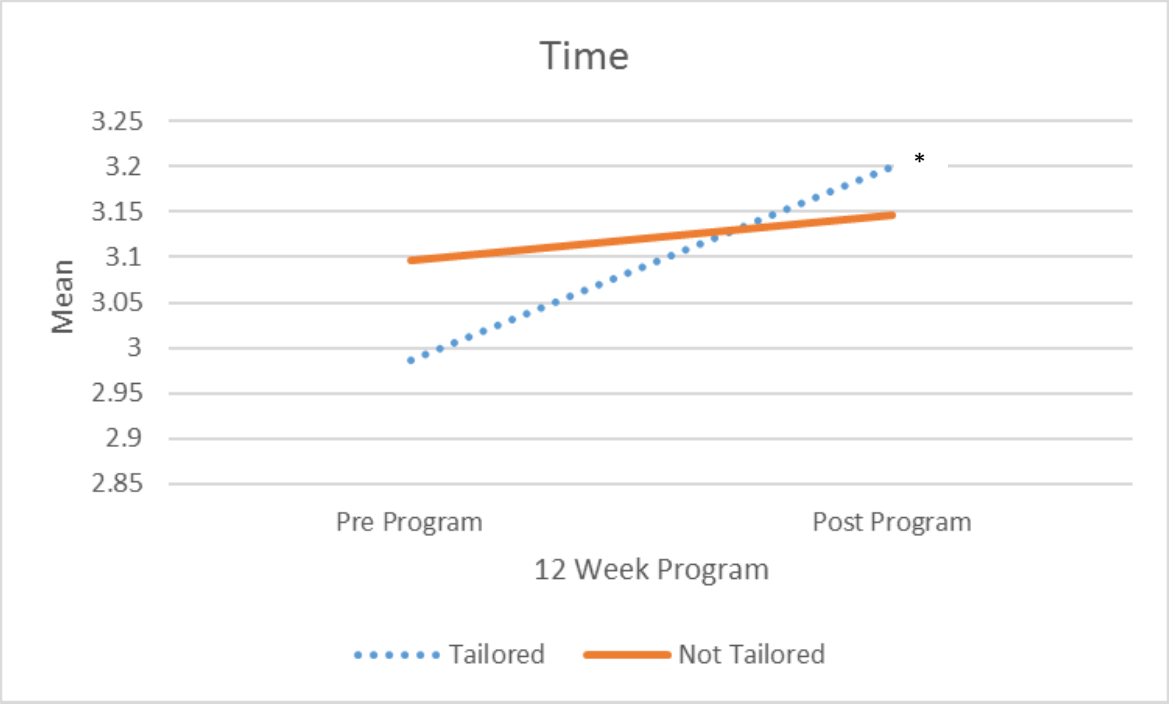
Table 11
Pre and Post Survey Self-Efficacy, Process of Change, Decisional Balance Means and SDs

			Baseline		12-Weeks	
	Construct	N	Mean	SD	Mean	SD
Tailored						
	SE	37	2.773	0.924	2.702	0.857
	POC	37	2.986	0.573	3.200*	0.539
	DB	36	26.513	9.736	25.5	8.987
Not Tailored						
	SE	38	2.974	0.671	2.853	0.791
	POC	37	3.096	0.674	3.147	0.662
	DB	37	27.757	9.417	28.054	8.592

Notes: SE=Self-Efficacy, DB=Decisional Balance, POC=Processes of Change; * = $p < .05$

Three repeated measures Analysis of Variance (ANOVA) were used to determine if there were significant differences in the three constructs of the TTM (POC, DB, SE).

Processes of Change Questionnaire. With respect to Processes of Change, there was no observed statistically significant interaction between Time and Group, $F(1,72) = 3.547$, $MSE = .246$, $p = .064$, $\eta_p^2 = .047$. There was a significant Main Effect of Time, $F(1,72) = 9.349$, $MSE = .648$, $p = .003$, $\eta_p^2 = .115$ as groups averaged together statistically improved from before the wellness program (M=3.0411, SD=±.62358) to after the wellness program (M=3.1734, SD=±.60029); t(73)=3.006, p<.004 (See Figure 4). The Main Effect for Group was not significant, $F(1,72) = .045$, $MSE = .031$, $p = .833$, $\eta_p^2 = .001$. Paired *t* test results showed there was a significant difference in scores for the tailored group, pre-program (M=2.9859, SD=±.57308) and post-program (M=3.1997, SD=±.53923); t(36)= -3.490, p<.05, *d*=.38.



Note. * = P<.005

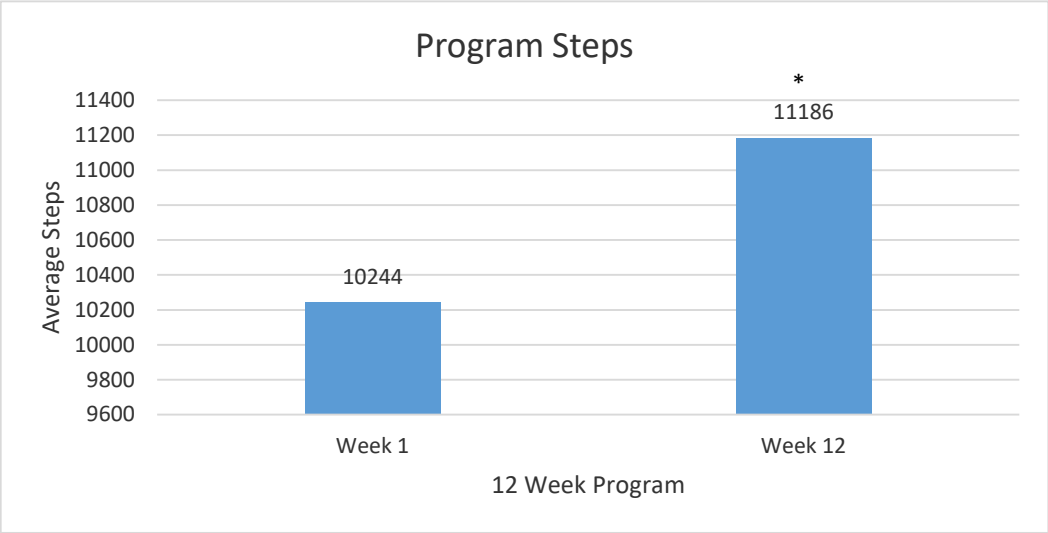
Figure 4: Processes of Change Time

Self-Efficacy Questionnaire. For Self-Efficacy, there was not a statistically significant interaction between Time and Group, $F(1,73) = .122$, $MSE = .024$, $p = .728$, $\eta_p^2 = .002$. No

significant Main Effects of Time, $F(1,73) = 1.726$, $MSE = .343$, $p = .193$, $\eta_p^2 = .023$ or Group $F(1,73) = 1.020$, $MSE = 1.152$, $p = .316$, $\eta_p^2 = .014$ were observed.

Decisional Balance Questionnaire. For Decisional Balance, there was not a statistically significant interaction between Time and Group, $F(1,71) = .862$, $MSE = 15.685$, $p = .356$, $\eta_p^2 = .012$. There was not a significant Main Effect of Time, $F(1,71) = .258$, $MSE = 4.685$, $p = .613$, $\eta_p^2 = .004$. The Main Effect for Group was not significant, $F(1,71) = .872$, $MSE = 131.527$, $p = .353$, $\eta_p^2 = .012$.

Physical Activity. Steps were self-reported and used to monitor participants' physical activity. There was a significant change in steps in week one of the program (M=10,244 SD=±4874) to week 12 of the program (M=11,186, SD=±3029); t(51) = -2.056, p<.045 (Figures 5 & 6).



Note. *p < .05

Figure 5. Wellness Program Steps

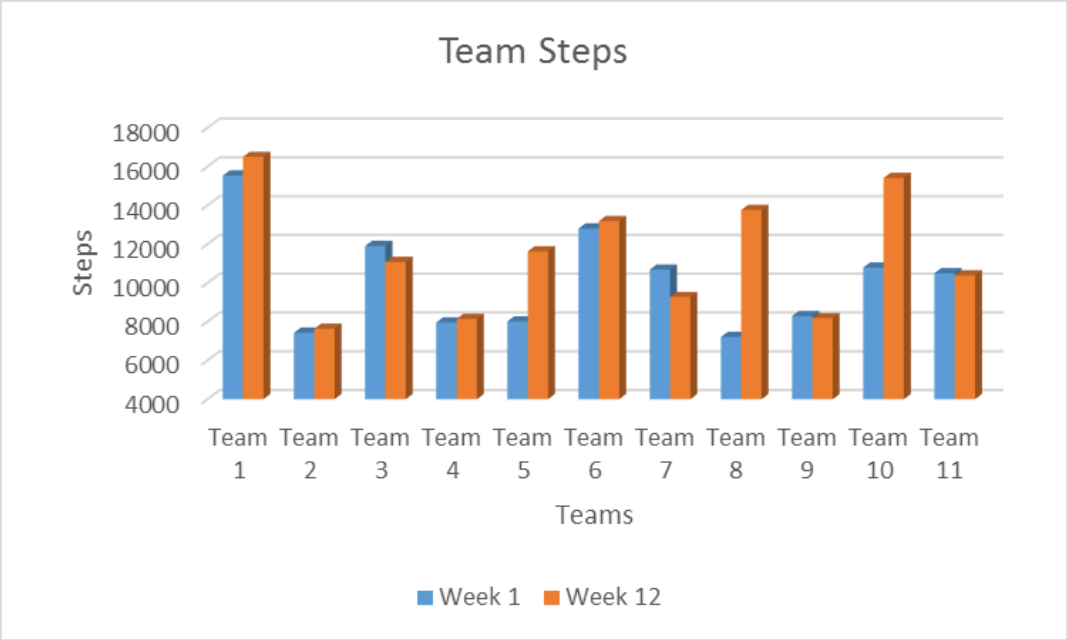


Figure 6. Team Steps

Qualitative Data

The qualitative data analysis includes the detailed analysis of four qualitative data collection data points: 1) Data from focus groups (post wellness program), 2) semi-structured interviews (post wellness program), 3) journal entries during program, and 4) open-ended questions (pre and during wellness program). This qualitative data brings structure and meaning to the quantitative data. The qualitative analysis is generated using grounded theory (Creswell, 2014) to provide a robust structure and meaning to the quantitative data derived to explain question three, "What are participant perceptions prior, during and after the wellness program?" Conclusions derived through analysis of general statements and relationships among thematic categories. Analysis of data involved data reduction and inductive content analysis. Descriptive coding (Saldana, 2012) was used for all qualitative data to assist with identification of concepts using the constant comparison of data with emerging themes and the sampling of different groups to maximize similarities and differences in the data. Focused coding (Saldana, 2012) was

used for the second cycle of coding of the semi-structured interviews (Patton, 2014) to ensure specific themes were identified. All data was coded in an effort to reach data content saturation (Patton, 2014) and ensure no new information or themes emerged from the data. Data triangulation in this study was accomplished through five separate assessments of content from four qualitative data sources. Data was member-checked and included (1) open-ended questions in pre surveys, (2) journal entries, (3) semi-structured interviews, and (4) focus groups.

Credibility and Dependability. Dependability and credibility were established through open-ended survey questions, journal entries, semi-structured interviews, and focus groups as well as including two researchers not involved in the research process to serve as two of the five qualitative analysts. This led to strong and clear thematic conclusions. These external auditors included both males and females that analyzed each of the qualitative data collection sources (i.e., open-ended questions, journals, semi-structured interviews, focus groups). Credibility of the study was reinforced by using member checking after interviews had been transcribed. The transcribed interview was emailed to each respective interviewee to check for agreeance in coding and to provide feedback. Eight out of sixteen participants emailed back saying they had read the transcript and some provided feedback about the coding. Feedback from interview participant two said,

> It seems that you successfully captured the key points of the interview. As with your work on the overall study itself, your work was organized, clear, succinct, and efficient. It was a pleasure to be a part of the research.

Member checking provided participants the ability to correct any misinterpretations that might have occurred during the interview.

Confirmability. This study established confirmability by including multiple methods (i.e., open-ended survey questions, journal entries, semi-structured interviews, focus groups) in

the same study so the data confirmed one another. In addition, four other individuals, along with the researcher, read all interviews and focus groups to ensure consensus on coding, themes and categories.

Transferability. Transferability was achieved in this study because the perceptions came from various genders, ages, socioeconomic statuses and job descriptions within the College. This data will be best transferable in the small community college setting. The data reflects an inclusive sample from the faculty and staff and could be replicated within the population.

Qualitative Sampling. Participants were invited by email to partake in focus groups and interviews. No participant took part in both a focus group and an interview. Purposeful stratified sampling (Patton, 2014) was used to invite participants to partake in semi-structured interviews, and purposeful random sampling was used for focus groups. All participants were asked to complete the Pre Wellness Program questions, which included the open-ended questions. In addition, during the program, all participants were asked to complete journal entries that included open-ended questions.

Themes. Three main themes were developed from the focus groups and interviews by using grounded theory: social, barriers and facilitators and dimensions of change. The three themes were applied to also categorize pre wellness open-ended questions and journal entry responses. While all three themes were very prominent in the focus groups and interviews, at times it was difficult to clearly identify the theme a statement should be classified due to the team-based element of the program. Some statements could have been classified as both "social" and "barriers and facilitators" due to the team-based concept. The researcher read each statement and applied full context when categorizing data into each theme. Below are tables (12-22) indicating the themes, the frequency of the responses related to that theme, the sources of the information, and finally examples of supporting quotes from journal entries, open-ended

questions, focus groups, and/or interviews. Also, this information is presented when the information was obtained either pre, during, or post wellness program.

I. Open-Ended Questions Pre Wellness Program.

Table 12

Pre Wellness Program Question #10 - Social and Frequency

Q10: "Please write a paragraph describing your experience with physical activity or exercise."

Theme	Frequency	Source	Examples of Supporting Quotes
Social	10.6%	P #7	"Most of the people at my gym are people who I have worked out with for 20 years."
		P #3	"I enjoy physical activity, especially when it is competitive."
		P #13	"I am more motivated to exercise with a group or with group support and encouragement."

Note. P= Participant

Table 13

Pre Wellness Program Question #10 - Barriers and Facilitators and Frequency

Q10: "Please write a paragraph describing your experience with physical activity or exercise."

Theme	Frequency	Source	Examples of Supporting Quotes
Barriers & Facilitators	46.8%		
	B = 28.7%		
	F = 18.1%	P #32	"I have been injured (foot and lumbar spine) for the past several months so I have not been able to run." (B)
		P #3	"I cannot seem to get motivated." (B)
		P #65	"I like to walk. My job requires me to walk a lot and move all the time." (F)
		P #53	"I teach weight lifting and personal fitness during the week. I also instruct a group fitness class twice per week." (F)
		P #71	"I stopped regular activity after giving birth and have not focused on my health since." (B)
		P #18	"I know I need to, that's why I love the Wellness

	Challenge….it gives me a little nudge on doing what I already know I need to do." (F)

Note. P= Participant

Table 14

Pre Wellness Program Question #10 – Dimensions of Change and Frequency

Q10: "Please write a paragraph describing your experience with physical activity or exercise."

Theme	Frequency	Source	Examples of Supporting Quotes
Dimensions of Change	42.6%	P #27	"While shopping I try to park the farthest away from the store."
		P #33	"I do choose to use steps when possible, walk when I play golf and use a push mower when cutting the yard."
		P #64	"I moderately exercise by walking and in the summer I swim in addition. I need to do more."

Note. P=Participant

Table 15

Pre Wellness Program Questions #11 & 13 Combined

Q11: "If you do participate in regular physical activity, please explain why?"
Q13: "If you regularly participate in physical activity, what motivates you to keep participating?"

Theme	Sub-Themes	Frequency	Source	Examples of Supporting Quotes
Facilitators	Stay healthy/be healthy/general benefits	20.4%	P #20	"Overall health and wellness."
	Feel better/have more energy	19.0%	P #30	"It makes me feel better."
	Lose weight/control weight	12.4%	P #27	"Wanting to lose weight."
	Seeing results/self - image/clothes fit	8.6%	P #62	"Feel better physically with myself."
	Social/accountability/ competition	8.0%	P #20	"…but I don't want to walk by myself."
	Enjoyment	5.8%	P #21	"…I enjoy it…"
	Relieve Stress	5.8%	P #73	"…physical activity is good

				for decreasing stress."
	For my spouse/ kids/grandkids	3.6%	P #54	"…to be able to keep up with my grandchildren."
	Work requirements	3.6%	P #13	"Requirements of work."
	Adrenaline rush	2.9%	P #52	"It's always an adrenaline rush."
	Sense of accomplishment/challenge myself	2.9%	P #21	"I like to challenge myself."
	Prevent Becoming sick	2.9%	P #63	"…to prevent or slow the progression for many health issues."
	Eating whatever I want	1.5%	P #3	"…eat and drink what I like."
	Other (dogs, experiences, outdoors)	2.2%	P #26	"…playing with my dogs."

Note. P=Participant

Table 16

Pre Wellness Program Questions #12 & 14 Combined

Q12: If you do not participate in regular physical activity; explain why you do not."
Q14: Are there any barriers that keep you from participating in regular physical activity?"

Theme	Sub-Themes	Frequency	Source	Examples of Supporting Quotes
Barriers	Busy/time constraints	27.1%	P #60	"I just get so busy."
	Lazy/lack of motivation/no discipline/no energy	16%	P #54	"Just plain laziness."
	Spouse/kids/grandkids/ home obligations	13.8%	P #15	"Since having my twins that are 10 months old and being a single mother…"
	Injury/medical reasons/overweight/ painful	13.3%	P #39	"Shoulder injuries and surgery prevent heavy lifting and swimming."
	Work gets in the	12.2%	P #72	"I work two jobs."

way/multiple jobs			
Weather or environment not conducive	4.4%	P #70	"It's too cold/hot."
Grad school/school work	3.3%	P #9	"Grad school."
Commuting long distance	2.8%	P #5	"Since I commute two hours a day…"
Life changes/life happens	2.2%	P #75	"…due to life changes."
Exercise is frustrating/boring	1.7%	P #61	"…frustrating to me and boring."
Boring by yourself/no one to exercise with	1.7%	P #24	"BORING to do by yourself."
Not a priority/didn't feel I needed to	1.7%	P #35	"I have not felt like it was needed until the last few years."

Note. P=Participant

II. Journal Entries during the Wellness Program.

Table 17

Program Journal Entries - Social and Frequency

Theme	Frequency	Source	Examples of Supporting Quotes
Social	7.1%	P #19	"I influenced my family members in eating healthier this week."
		P #55	"I spend more time with family this week. It really makes a difference in knowing what they are experiencing and realizing how much they care about you. We used to get together more often, but life happens.
		P #67	My wife had spring break from her school last week, so that gave her a little more free time. That in turn allowed me more time with her as well as more flexible time overall. I was able to run three times (one was the Unity Stampede 5K).
		P #58	"I try to be an encouraging partner to my team and my family at home. We have made this a family thing also, even though my husband and children are not participating in the event with me. We are still trying to be healthier together and also trying to be more encouraging to each other."
		P #71	"I lost five pounds and kept it off throughout the week! My family and I are doing more active activities together and it has been so much fun!"
		P #75	"I took some bicycle rides with my daughter to get in more "steps" and at the same time was able to spend quality time with her."
		P #1	"I am so disappointed to notice that some of my teammates seem to be making up approximations of their steps and water intake rather than actually keeping up with the actual amounts."

Note. P=Participant

Table 18

Program Journal Entries (Weeks 2, 4, 6, 8, 10, 12) – Barriers and Facilitators and Frequency

Theme	Frequency	Source	Examples of Supporting Quotes
Barriers & Facilitators	26.7% Barriers= 19.2% Facilitators=7.5%	P #61	"I wish I had not spent so many hours sitting in a car traveling north to bad weather. I wish I could have been able to move more." (B)
		P #3	"I had two sick kids and a sick wife that drastically reduced my activity level this week. " (B)
		P #67	"My time has just been eaten up with so many different things. I cannot seem to balance it all. I always seem to be dropping the ball in one area or another!" (B)
		P #23	"I like the Program on Tuesday and Thursday at the Sportsplex. It helps to keep me motivated." (F)
		P #18	"It was spring break!" I did a lot of exercising and work around the house." (F)
		P #41	"I got an exercise bike for when it's raining." (F)
		P #36	"My sleep. Oh man, this week was rough. Between the stress of the move and feeling under the weather, I did not sleep well the first couple of nights we were in the house." (B)
		P #51	"The weather was nice in the beginning of the week and I found a new route that I can walk with my dog." (F)
		P #57	"So stressed about completing the semester. Poor everything habits." (B)

Note. P=Participant

Table 19

Weekly Journal Entries: Dimensions of Change and Frequency

Theme	Frequency	Source	Examples of Supporting Quotes
Dimensions of Change	66.2%		
		P #17	"The information on social wellness had a positive effect on me. It allowed me to realize that having social relationships is necessary to being healthy in addition to good eating habits and exercise."
		P #16	"I think the biggest effect that the information had on my spiritual wellness is that I gained a better understanding between joy and spiritual health. Life is hectic and often it is easy to get caught up in the negative aspect of life. Spirituality helps us to focus on the positive."
		P #43	"I was more intentional in choosing fruits and vegetables at meals than I normally do."
		P #22	"A positive thing that happened this past week was that I came to the realization that I haven't made an effective change in my life. I plan on exercising, I plan to eat only healthy foods, and I plan to get enough sleep. In the past, my plans have not been implemented because I have not committed to them. From this point forward, I will have the commitment to implement the plans."
		P #12	I got my steps in most days! I almost drank enough water most days. I am finding that water keeps me from being so hungry."
		P #2	"I don't think your information had an impact on me. That is my area. ☺"
		P #74	"I have music as a hobby which is very intellectually stimulating. The video reaffirms the benefit of having this hobby."
		P #45	"Exercising helps keep me in a good, positive mood."

Note. P= Participant

III. Focus Groups and Interviews Post Wellness Program.

Table 20

Focus Groups and Interviews: Social and Frequency

Theme	Frequency	Source	Examples of Supporting Quotes
Social	29.6%	FG 1 P #4	"I think the competition does help when you have teams."
		FG 1 P #3	"Team members constantly motivated throughout the day."
		FG 1 P #1	"I always enjoyed just because of the little competitive edge."
		FG 2 P #5	"I think that you are always more likely to stick to something when you have someone there doing it with you."
		FG 2 P #6	"I think the social part of it is very important."
		FG 2 P #2	"…it was emails saying, "hey make sure you record your steps."
		I #1	"It was a positive thing to have other people there to support you and urge you on."
		I #2	"…not letting myself down and my fiancé down."
		I #3	"Because I was on a team that was high performing, it puts a lot of pressure on you, so you step it up."
		I #4	"Well I wish we had done more as a team."
		I #5	"Probably the best part with that, my wife was on the team and so each day we would talk about how many steps and water and that kind of stuff."
		I #6	"Having everybody in the office participate and talking about it and being excited about it that really helped keep me motivated."
		I #7	"…my team captain was less inspired."
		I #8	"… it was the team as a whole that gave me a little bit extra oomph to actually do it and follow through, so that was a big part."
		I #9	"It was good to see how one fared against other teams…"
		I #10	"The fact that your teammates were dependent on you to get it done…"
		I #11	"Competing with other member, trying to out-do them…"
		I #12	"Helping yourself but helping the whole team win too…"
		I #13	"It is encouraging when you have some type of social support."

I #14	"Better communication between group members would help motivate."
I #15	"The team needed to be more social throughout program."
I #16	"Team scores motivated me to do better."

Note. FG= Focus Group, P=Participant, I=Interview

Table 21

Focus Groups and Interview: Barriers and Facilitators and Frequency

Theme	Frequency	Source	Examples of Supporting Quotes
Barriers & Facilitators	36.6% B = 17.3% F = 19.3%	FG 1 P #6	"We ended up getting Fit Bits and made recording data easy and accurate." (F)
		FG 1 P #2	"It was hard to keep up with fruit, vegetable, and sleep intake was tough." (B)
		FG 1 P #3	"Personal life got in the way cooking, cleaning, etc." (B)
		FG 1 P #6	"first time ever to fool with Scout or anything; it wasn't bad." (F)
		FG 2 P #5	"Fit Bit or Garmin helped track data for steps." (F)
		FG 2 P #1	"I agree with work being a barrier." (B)
		FG 2 P #5	"Taking the time to document it…" (B)
		I #1	"…and having to keep track of so many things. That was the most difficult part of it." (B)
		I #2	"Easily accessible and I was familiar with Scout." (F)
		I #3	"…all of my barriers are within me. It's a lack of real motivation to really do it." (B)
		I #4	"…late hours working and not being able to get out there and get going and get walking." (B)
		I #5	"…we did a race or two during the wellness thing, and having that race out there that motivated me too." (F)
		I #6	"was exciting; having my Fitbit and putting in my information." (F)
		I #7	"I have a family history of diabetes. I have some kidney problems already, some damage to the kidney from kidney stones." (F)
		I #8	"It's really hard to get going and not feel discouraged when everything starts hurting." (B)
		I #9	"I liked the videos for my personal benefit…" (F)
		I #10	"Bad weather hurt results…" (B)
		I #11	"Data entry was tough for members in the group…" (B)
		I #12	"There was not strong leadership…" (B)
		I #13	"My mom got sick in November…" (B)
		I #14	"Fitbit helped my data entry." (F)
		I #15	"Scout was easy to use." (F)
		I #16	"Technology helped data entry." (F)

Note. FG=Focus Group, P=Participant, I=Interview

Table 22

Focus Groups and Interviews: Dimensions of Change and Frequency

Theme	Frequency	Source	Examples of Supporting Quotes
Dimensions of Change	33.6%	FG1 P#1	"Better mentally and physically during study."
		FG 1 P #4	"More relaxed during study."
		FG 1 P #2	"…emotionally better during study…"
		FG 2 P #1	" I think it helped socially too"
		FG 2 P #4	"I think you actually think about all of the things you do during the day"
		FG 2 P #6	"It makes you aware of how your health and well-being affects every portion of your life."
		I #1	"I did continue to do was watch my food intake and count my calories."
		I #2	"I paid more attention to health and well-being than I would say I normally did."
		I #3	"Psychological I'm pretty good except that again the hormonal shifts sometimes."
		I #4	"…that hasn't become a challenge because that has become my new way of living."
		I #5	"I think just tracking everything, making you aware of what you are doing or not doing was a big part."
		I #6	"I could really start seeing a change when we added the water intake."
		I #7	"I was surprised at how little consistent sleep I get."
		I #8	"…making small decisions, it doesn't all have to happen at once."
		I #9	"Felt better about myself during study…"
		I #10	"Physical, better energy throughout day…"
		I #11	"Sleep better during study, due to activity…"
		I #12	"Stress reduced during study…"
		I #13	"Spiritual, helped with mental focus throughout day…"
		I #14	"Physical activity helps lower stress within study…"
		I #15	"…better self-image…"
		I #16	"All dimensions were hit for me…"

Note. FG=Focus Group, P=Participant, I=Interview

The three main themes (i.e., social, barriers and facilitators, dimensions of change) derived from the focus groups and interviews housed most statements excluding some outliers. As previously stated since the wellness program was team-based, some statements could have been classified into two themes such as “social” and “barriers and facilitators.”

CHAPTER V

DISCUSSION, CONCLUSIONS, AND IMPLICATIONS

The present study investigated the effects of an employee wellness program: (1) on perceived wellness, (2) on the constructs of the Transtheoretical Model of Change (TTM), and (3) to examine employee perceptions of the wellness program.

Discussion

Research Question 1. What effect did the wellness program have on employee perceived wellness? The results of the PWS showed participants had a significant increase in their perceived wellness at the completion of the program. The program included four behavior habits that included physical activity, sleep, water, and nutrition. The physical activity portion of the program had participants record their steps and try to achieve the goal of 10,000 steps per day. Bezner et al. (1999) found with hospital workers with a mean age of 39.5 that the more a person exercised the greater their perceived wellness. While the mean age of participants in this study was higher, employees at the community college showed a similar increase in perceived wellness after the 12-week intervention. Fifty-two of the 75 participants reported their steps correctly and on time in weeks one and 12 showing a significant increase in physical activity with an individual average of 10,244 steps in week one and an individual average of 11,186 in week 12.

Haines et al. (2007) conducted a similar 12-week walking program delivered virtually that assessed perceived wellness and also observed increases in physical activity and perceived wellness at the end of the program. Haines et al. (2007) attributed "novel motivation tools" (p. 224) (i.e. pedometers, virtual platform, emails) as the reason for a positive impact. It is suggested in research that since there was an improvement in perceived wellness and all the dimensions of wellness are inter-related, there should have also been improvement in (1) physical health

(physical), (2) having a greater sense of meaning and purpose in life (spiritual), (3) expecting positive things to happen in life (psychological), (4) family and friend connections (social), (5) self-security and happiness (emotional) and (6) intellectual passion (intellectual) (Adams et al., 1997). This helps explain why there were improvements in perceived wellness as a whole since all dimensions are inter-related and there was an increase in physical activity.

Urda et al. (2016) used an alert system by text message to remind participants in their study to get up and move as a way to increase physical activity in sedentary women in a university setting. While neither the control group nor the intervention group decreased the amount of their sedentary behavior, it was suggested by Urda et al. (2016) that by just including employees in an activity-monitored program it was enough to improve their perceived wellness since both groups increased perceived wellness, but neither increased physical activity. Participants in the current study were provided videos highlighting a different dimension of wellness every two weeks and these were followed up with open-ended journal questions that required participants to reflect on their previous week and how a specific dimension of wellness might have been affected. It could be argued that the videos as well as just joining the wellness program where participants were required to record their behavior data weekly helped them to focus on their health and well being, which helped with their perceived wellness. Knowing lack of time and work requirements were barriers for individuals trying to be physically active and healthier (Haines, et al., 2007), videos were kept to less than two minutes in length each. In addition, the length of the video was indicated beside the video title to encourage viewing by assuring participants it was not a time consuming task. The following information about the delivery of the program is believed to have helped with increased perceived wellness. The virtual delivery of the program allowed participants to view targeted dimensions of wellness information at their own convenience and as many times as they wanted. Higgins et al. (2014)

suggested that virtual programs could be successful while Abrams et al. (1996) said they could reach a wider audience and be convenient. The faculty and staff in this study were spread across three different campuses in different counties. The virtual program allowed teams to be comprised of participants in different departments as well as from different campuses because targeted activities (videos and reflective journal entries) could be completed individually at a convenient time and place. In addition, data input was convenient to record and because each team-member could see the team's data, it was easy to remind and encourage each other about health behaviors. The ability for teammates to be able to view each other's data served as a layer of accountability. In addition, because many of the faculty and staff were familiar with Scout, they were also aware whether or not they viewed the videos could be monitored, creating another layer of accountability. The accountability aspect of the program could have increased perceived wellness because teammates did not want to be the weakest link by not doing what they were expected to do. Therefore, they read announcements and watched the videos that focused on the dimensions of wellness.

The wellness program had a team-based element where participants were accountable to their team for their steps each week. While there is much to gain from examining the self-report scores of the PWS, few studies have included a qualitative assessment to better understand behavior change (Roscoe, 2009). If as Urda et al. (2016) suggests individuals perceived wellness benefited just from knowing their activity was being monitoring, then it could be surmised that just by entering data into the College's data management system, SCOUT participants' perceived wellness could increase. Journal entries and interviews supported that keeping up with their health behaviors encouraged the participants to think about their health. Participant 43 wrote, "I need to better balance my work responsibilities with my exercise regimen." and participant six wrote in detail about her sedentary week by saying,

> I wish I did not sit so long at the computer this week. It has caused my back and neck to ache and my mood has worsened because my muscles feel sore. I wish I had spent more time walking, but I let the cold weather and my job keep me from exercising like I should. I also wish I could get rid of this feeling of stress and almost panic that I feel with the jobs piling up at work.

Also, in reference to recording health behaviors, participant one from focus group one said, "…it made me aware of the water, how much water I wasn't drinking that I should have been drinking." Participants may not have been aware of their sedentary lifestyles or shortcomings of achieving their daily 10,000 steps if they had not been asked to record them. This awareness could have been responsible for the increased perceived wellness like in the Urda et al. (2016) study.

Churchill (2014) suggested employees in higher education institutions were less likely to participant in a fitness center based program and Speck et al. (2010) reported higher dropout rates among participants at an academic worksite. This did not prove true in this study. Well over 50% (Linnan et al., 2010) of the full-time faculty and staff of the College participated in this program and there was a much lower attrition rate than 50% (Haines et al., 2007). These higher participation and lower attrition rates could be attributed to the social aspect of the program. Interview participant 71 responded, "Everybody in the office was doing it and I wanted to be a team player." Interview participant twelve elaborated even more by saying,

> It's more than just being held accountable. It is the fact that you feel like you're a part of something. Everybody's got the same goal. You're helping yourself individually but you're helping the whole team win too. It's multi-layered, which is good.

Much of the research involving the *Perceived Wellness Questionnaire* has been conducted either by its founders or by researchers testing the validity and reliability of the

instrument. In addition, many of the previous studies using the PWS only recruited young participants. This study was unique because it had more of a middle-age base and it was not performed by one of the founding members of the PWS. In summary, the current study was successful at increasing participant perceived wellness due to the (1) convenience of the virtual platform, (2) targeted information about the dimensions of wellness delivered through announcements and videos in Scout, (3) accountability aspect of knowing someone can monitor if you viewed certain items inside of Scout, (4) increased physical activity and (5) high participation rate and low attrition rate.

Research Question 2. What effect did the wellness program have on the four constructs of the Transtheoretical Model of Change? There were no significant findings in the pre and post *Self-Efficacy Questionnaire,* which is in contrast to similar studies that used all four constructs of TTM and experienced increased physical activity (Ghiami, et al., 2015; Marcus et al., 1998). This was surprising since self-efficacy increases across the stages of change, increases as the individual becomes more active (Marcus & Forsyth, 2009) and is considered the strongest stages of change predictor of all the TTM constructs (Nigg & Courneya, 1998). However, in Butler et al. (2015), which was also conducted at a college setting, there was increased physical activity and no significant change in self-efficacy. In the current study the baseline SE mean for the group, as a whole was 2.8. In Marcus et al. (1998) the baseline mean score for the group was 2.2 and participant mean scores increased by one-tenth each measurement (i.e., one month, three months, six months). Although the Marcus et al. (1998) participants showed significant improvements in self-efficacy by month six (M=2.6), participant mean scores were still below baseline of the current study. It could be suggested that participants in the current study did not have a significant change in self-efficacy because their baseline scores were already high and there was not enough given time to see improvements in self-efficacy (i.e. three months versus

six months). As previously mentioned, there was a significant increase in physical activity for participants as a whole over the duration of the 12-week program. Participants originally completed the *Self-Efficacy Questionnaire* in January, which is known as a very optimistic time of the year for creating and sticking to new healthy behaviors. When participants took the survey, they had not started the program, which could have attributed to higher self-efficacy. They had not yet experienced the barriers to being physically active. The wellness program could have served as a reality check for participants and had no effect on self-efficacy throughout the program because participants became more aware of how difficult it was to achieve their goal of being physically active. The recording of the other health behaviors (water-intake, sleep, nutrition) could have also affected self-efficacy by making participants aware of their shortcomings. Interview participant seven said, "I didn't know how poor my sleep habits were." It is possible that shortcomings in one or more of the health behaviors focused on in the program could have affected program self-efficacy as a whole although self-efficacy is task specific. In addition, towards the end of the program, participants were recording their steps, water-intake, sleep and nutrition, which many viewed as a lot of data to keep up with. Participant one from focus group one said, "…after a certain point, it just got so tedious the more things you had to enter." Participants also expressed some frustration with the journals because they felt they were being asked the same questions each week and had a difficult time staying interested. Participant two from focus group one said, "…answering the same question, caused a little disinterest for me." In addition, the end of the program coincided with the end of the semester, which is a very time demanding period for faculty and staff. The post program *Self-efficacy Questionnaire* was administered around the same time as final exams and final grades were due in this setting. Journal entries and pre and post program open-ended question responses gave insight to participant perceptions. Prior to the beginning of the program through an open-ended question,

participant 36 was asked to describe his experience with exercise in the past. In summary, he was active in his younger days by going to the gym and weight training, but lately had not been successful in being physically active despite he and his wife having gym memberships. He ended his answer by saying, "I'm looking forward to getting back into the habit of working out." Participant 36 is hopeful and seems to have high self-efficacy about returning to his old ways of working out. However, his weekly journal entries shed some insight as to what happened to prevent him from meeting his goals. In week two of the program, he wrote,

> We had done a VERY good job of taking at least a five-minute walk a day. That hasn't happened in the last few weeks because it seems any moment we aren't with the kids, we're scrambling to get documents together for the bank.

In week eight he wrote, "Oh man, was this week rough. Between stress of the move and feeling under the weather, I did not sleep well the first few nights…I felt exhausted most of the week." In week 12, he wrote, "After spraining my ankle badly the other weekend, it's been slow going." Participant 36 is a great example of someone who had high self-efficacy at the beginning of the program, but kept running into barriers each week preventing him from reaching his desired goals. These types of barriers surfaced in many journal entries and post program interviews and focus groups. Consistent with the meta-analysis by Higgins et al. (2014) the most common barriers were (1) busy/time constraints, (2) lazy/lack of motivation, (3) family or home obligations, (4) injury/painful to exercise, and (5) work gets in the way.

There were no significant findings for the pre and post *Decisional Balance Questionnaire* either, which again was surprising since as individuals progress through the stages of change, they tend to have increasing scores (Dunn et al., 1997). Research has indicated that for an individual to increase physical activity, the individual must see more benefits than barriers. Again, there was an increase in physical activity for participants as a whole. A possible

explanation for this lack of change could be because participants were already at a high decisional balance score as a whole (Griffiths, 2016). The fewer perceived barriers, the more likely an individual will become active and stay active. In addition, when individuals have a more positive perception of physical activity versus a negative perception, it has been shown to predict gains in physical activity behavior (Dunn et al., 1997). Some perceived barriers are environmental such as inclement weather, and other barriers are more personal such as lack of motivation and the belief that you do not have the time to be active (Marcus & Forsyth, 2009). In pre program open-ended questions asking the participants to explain why they do not participate in physical activity, the most frequently given answer was they were too busy. The second most common answer was lack of motivation, and the weather not being conducive to exercise was the sixth most common answer. The pre-program open-ended questions were administered at the beginning of January, which is not the ideal time to be active outside. However, in contrast, overall, individuals typically are more motivated at the beginning of the year than other times of the year (Griffiths, 2016). The Questionnaire read, "In each case, think about how you feel **right now,** not how you have felt in the past, or would like to feel." Individual decisional balance could be higher in January than at any other time of the year (Griffiths, 2016). In addition, for the individuals that had not previously been physically active, they could have been naïve to the barriers that present themselves as individuals try to make behavior changes, especially physical behavior changes; therefore, making their decisional balance score higher at the beginning of the program instead of at the end. The program could have served as a reality check for how difficult it is to make changes. Again, we see through open-ended answers at the beginning of the program how participants had high self-efficacy and possibly higher decisional balance, yet while reading through journal entries self-efficacy and decisional balance seemed to stay the same or possibly even regress. Some participants could have very well increased in self-efficacy

and decisional balance, while others maintained or regressed. Although there was not significant change as a group, there could have been significant individual changes.

There was a significant main effect of time pre to post wellness program in the *Processes of Change Questionnaire.* For individuals to progress through the dimensions of change, they must become more aware of the pros of changing. The use of targeted short videos and "announcements" inside Scout that provided information about the importance of each dimension of wellness, relevant facts about the dimensions and how to improve the dimensions could have contributed greatly to the improvements in processes of change. Awareness of the benefits from being physically active and understanding how the dimensions of wellness are inter-related was enough to progress participants through the POC. The two main sub-categories of POC are experiential and behavioral. The experiential processes include: awareness, inspiration, self-reevaluation, environment reevaluation and influencing others (Marcus & Forsyth, 2009). All of these themes were addressed in videos, journal entries and the experience of being on a team at a worksite. Participants were continuously exposed to tasks and experiences that reinforced experiential processes. Behavioral processes include: self-liberation, helping relationships, counter-conditioning, reinforcement management and stimulus control (Marcus & Forsyth, 2009). As individuals advance in the processes of change, they increase their processes of change starting with experiential processes and advancing to behavioral processes. It is possible that the team-based theme and the recording of data played a role in increasing behavioral processes. By recording the health behavior data, participants saw they were meeting their goals for steps, water-intake, sleep and nutrition. They also saw that their teammates were meeting those same goals, which reinforces their abilities and affirms they are in like-minded company. In addition, an individual's level of motivation for change greatly influences how quickly the individual increases use of processes of change (Marcus & Forsyth, 2009). Although

the program was voluntary, individuals participated in the pilot program the previous year and knew what to expect in terms of whether or not they would enjoy the program.

There were also significant findings in the pre and post *Stages of Change Questionnaire.* Participants as a whole progressed in the SOC and more specifically 60% of tailored and 40% of non-tailored individuals advanced in the stages of change. These findings were consistent with the findings of Blissmer and McAuley (2002) and Noar, Benac and Harris (2007) that showed stage-matched interventions were more successful at improving physical activity than mismatched interventions. This study used stage-matched tailored interventions to help advance individuals through the SOC. Individuals in the tailored group received more information through Scout, by way of worksheets and handouts, than the non-tailored group. The tailored interventions were created to focus on the needs of the participant dependent upon the self-identified stage prior to the program. The fact that the entire program showed significant changes in SOC may suggest that just by having a wellness program, individuals receive benefits, but a stage-matched tailored program showed even more gains.

Pre wellness program participants in this study classified as 2.7% in precontemplation, 42.7% in contemplation, 14.7% in preparation, 6.7% action and 33.3% in maintenance. Marcus, et al. (1992) reported that a common distribution is 24% in precontemplation, 33% in contemplation, 10% in preparation, 11% in action and 22% in maintenance. This reveals that participants in the current wellness program study were further along in the stages of change when compared to the norm from other studies in the country. Over 50% of this study's participants were already active by self-identifying in the later stages of change (i.e. preparation, action, maintenance). This may explain why participants in the current study did not show as many significant changes as some other studies (Marcus et al., 1998). Room for change is limited in self-efficacy, decisional processes and process of change if individuals have already

progressed in those areas because they are already physically active. In other studies, the participants were considered either sedentary, "underactive" or they were closer to the "norms" for stages of change as mentioned before (Ghiami et al., 2015; Napolitano et al., 2008; Williams et al., 2011).

Previous worksite wellness studies and studies that looked at health behavior improvement used increased physical activity (i.e. counting steps, tracking physical activity minutes) as a measure of success (Butler et al., 2015; Haines et al., 2007); this study did not. Physical health behaviors (i.e. steps, water-intake, sleep, nutrition) were recorded daily; however, the focus was how individuals changed throughout the program, and not necessarily on success of the individual or program in terms of increasing physical activity. However, we do know there was a significant increase in physical activity from week one to week 12.

Most physical activity intervention programs are designed for participants already participating in physical activity, meaning participants are in the later stages of change (i.e. preparation, action, maintenance), and thus increasing the importance of creating wellness programs that have tailored stage-matched interventions. The application of all TTM constructs along with stage-matched interventions is a better way to meet the needs of individuals in all stages of change, especially those in the earlier stages that need to receive more cognitive processes material versus behavioral. In one stage-matched tailored intervention, sedentary individuals in the earlier stages of change had a more significant change in self-efficacy and decisional balance than the non-tailored group (Marcus et al., 1998). This re-emphasizes the importance of understanding the needs of participants in the early stages. Noar et al. (2007) conducted a meta-analysis of 57 studies and reported: (1) programs that stage-match tailor have more favorable behavior outcomes than those that do not, (2) programs that examine participant physical activity pros and cons have more favorable behavior outcomes than those that do not (3)

programs that assess physical activity self-efficacy have more favorable behavior outcomes than those that do not, and (4) programs that understand participant processes of change have more favorable behavior outcomes than those that do not. Favorable outcomes include increasing steps and increasing minutes of physical activity per day or week.

Research Question 3. What are participant perceptions prior, during and after the wellness program? Three main themes were developed from the focus groups and interviews by using grounded theory: social, barriers and facilitators and dimensions of change. The three themes were applied to also categorize pre wellness open-ended questions and journal entry responses. While all three themes were very prominent in the focus groups and interviews, at times it was difficult to clearly identify one theme a statement should be classified due to the team-based element of the program. Some statements could have been classified as both "social" and "barriers and facilitators". The researcher read each statement and used full context when categorizing data into each theme. The analysis team defined "social" as all the ways the participants were affected by outside forces such as their teammates, family members, team captains and even opposing team members. Within the "social" theme, there were five sub themes: (1) team motivation, (2) family participation, (3) competition, (4) leadership, and (5) accountability. The analysis team defined "barriers and facilitators" as all the external and internal items that kept someone from successfully participating in the wellness program (barriers) or the items that helped someone be successful (facilitators) in the wellness program; and some items were viewed as both. For example, when interview participant five said,

> Probably the best part was that my wife was on the team, and so each day we would talk about how many steps and water and that kind of stuff. The team, in general, was good, but coworkers you see during the week, not as much on the weekends and certainly not

all day and maybe every day. Having a family member doing it I think was a bigger push than coworker doing it.

This statement was classified in the "social" theme because of the interactions with co-worker teammates as well as his wife who is a teammate. However, Cohen, Marmelstein, Kamarck and Hoberman (1985) classify this as emotional support and Lewis, Marcus, Pate and Dunn (2002) believe this type of social support is a facilitator of behavior change. Within barriers and facilitators, there were four sub-themes for barriers, which were (1) technology, (2) job/multiple jobs, (3) sickness or injury, (4) family, and (5) other obligations. Three sub-themes emerged for facilitators: (1) technology, (2) incentives, and (3) teammate/friend/family support. Technology was classified as both a barrier and facilitator depending on the individual. For example, when participant three from focus group two said, "I think having a Fitbit or some type of device to help you keep up with the information made it easier to remember how many ounces of water you drank or how many steps you took…." In contrast, participant one in focus group one said, "I didn't mind logging my steps…after a point; it just got to be so tedious the more things you had to enter." One participant viewed the technology piece as a facilitator because it helped with tracking while the other participant felt that logging into the program to record data was too time consuming. Dimensions of change was defined as any type of comment that referenced some aspect of the stages of change or the dimensions of wellness. Within dimensions of change, there were six sub-themes: (1) physical (2) emotional (3) intellectual (4) social (5) spiritual, and (6) psychological. The dimensions of change theme encompassed all the ways an individual verbalized how he or she was affected in reference to the six dimensions of wellness, stages of change, self-efficacy, processes of change and decisional balance. For example, when participant fifty-two wrote in his journal, "I am wholly aware of the health and wellness benefits associated with physical activity…I enjoy moving at the physical exertion. It is always an adrenaline rush."

The participant clearly recognized the physical aspects of being active, but also mentioned some of the psychological and possibly emotional aspects.

Prior to the Wellness Program. The main three themes (i.e. social, barriers and facilitators, dimensions of change) were also used for the pre wellness program open-ended questions. Pre program question 10 asked participants to, "Please write a paragraph describing your experience with physical activity exercise." There were 94 identified statements with a breakdown of 10.6% in the social theme, 46.8% (28.7% barriers, 18.1% facilitators) in the barriers and facilitators theme and 42.6% of the statements were classified in the dimensions of change theme. The question was asked to gain a better understanding of participant past and present experiences with physical activity. Individuals who say they enjoy being physically active are more likely to become and stay active (Wankel, 1993) as well as progress through the different stages of change (Williams, Papandonatos, Napolitano, & Lewis, 2006).

In comparison, the distribution of comments from pre wellness program to post wellness program was significantly different when referencing the social theme. Nearly one third of the comments from the focus groups and interviews were categorized as "social" while only 10.5% comments prior to the program referenced the social theme. This says that participants did not consider how the social aspect of physical activity effected their motivation, commitment and success to making behavior improvements in the past. They were quick to mention all the benefits they receive from physical activity as well as the barriers that prevented them from doing their best, but very seldom did they address the social aspect, whether it was good or bad.

Pre program questions 11 and 13 asked, "If you do participate in regular physical activity, please explain why." and "If you regularly participate in physical activity, what motivates you to keep participating?" There were 137 identified statements that were classified as "facilitators" (See Table 15). It is important to recognize the answers from this question were from participants

that were already physically active. Therefore, it makes sense that the top reason for being active is because they recognize the benefits (i.e. "stay healthy, be healthy, general benefits"). There is no need to focus on the use of cognitive processes for individuals in the later stages of change (i.e. preparation, action, maintenance) because they already use those processes, which re-emphasizes the importance of tailoring (Marcus & Forsyth, 2009).

Pre-program questions 12 and 14 asked, "If you do not participate in regular physical activity, explain why you do not." and "Are there any barriers that keep you from participating in regular physical activity?" There were 181 identified statements classified as "barriers" (See Table 16). In congruence with the meta-analysis by Higgins et al. (2014), the most common barriers were (1) busy/time constraints, (2) lazy/lack of motivation, (3) family or home obligations, (4) injury/painful to exercise, and (5) work gets in the way. This suggests that like other worksite wellness environments, community college employees face the same barriers. It is important to address the barriers and provide ways to eliminate them when developing and implementing worksite wellness programs.

During the Wellness Program. During the program, participants were asked to respond to prompted questions by way of online journals in Scout. Journal entries for weeks 2, 4, 6, 8, 10 and 12 were examined and coded categorizing statements into the three main themes. Specifically, those weeks were chosen because in addition to the consistent two questions participants had each week, there was also a third question asking if there was any noticeable change in the "focused" dimension (i.e. physical, emotional, intellectual, social, spiritual, psychological) during the previous week. There were 1005 identified statements with a breakdown of 7.1% in the social theme, 26.7% (19.2% barriers, 7.5% facilitators) in the barriers and facilitators theme and 66.2% in the dimensions of change theme (See Tables 17, 18, 19). Again, we see a low number of "social" responses as compared to the other themes. We also see

a huge shift to more dimensions of change responses, which can easily be explained because the questions specifically asked about the dimensions of wellness. It is important to note that when a "social" comment was made, it was typically in reference to how teammates were holding each other accountable or how much participants enjoyed the Couch to 5K program and the 5K Race, which served as the "end test"; both of which were hosted by the researcher. "The 5K, that was fun" was said by participant thirty-nine. Many of the "facilitator" comments were in reference to the weather in which participant forty-one stated, "The weather was perfect for outdoor exercising." Comments involving barriers were consistent with previously identified reasons it was difficult to reach their desired behavior (i.e. lack of time, injury, work, family obligations). "As always, I wish I had more time for exercise after work," which was said by participant nineteen.

After the Wellness Program. Focus groups were separated into a tailored group and a non-tailored group and 16 individuals were interviewed with eight being from the tailored group and eight being from the non-tailored group. There was representation from each stage of change in the focus groups and individual interviews. Between two focus groups with a total of 11 participants and 16 individual interviews, there were 358 statements identified and classified into one of the main three themes. There were 106 (29.6%) statements in the "social" theme (Table 20), 131 (36.6%) statements included in the "barriers and facilitators" theme (Table 21) and 121 (33.8%) statements included in the "dimensions of change" theme (Table 22).

Social. Many participants made remarks about how competition drove them and when they saw their data or team's data, it would drive them to do better. Individuals and teams loved competing within their team and even more with other teams. Participant five from the tailored focus group said, "I think the competition does help when you have teams competing because I enjoyed having teams all across campus and not just having them in our division or building."

A high number of interviewed participants said they wanted to participate because their department signed up, or they wanted to be a part of a team. Through interviews, it was evident that many participants did not feel they had enough self-efficacy to complete a wellness program on their own. They needed and wanted that extra support to help them be successful. When asked about why they participated in the wellness program, interview participant four said, "Well, the first reason was for my teammates, to be a team player. Interview participant six responded, "Everybody in the office was doing it and I wanted to be a team player." Interview participant twelve elaborated even more by saying,

> It's more than just being held accountable. It is the fact that you feel like you're a part of something. Everybody's got the same goal. You're helping yourself individually but you're helping the whole team win too. It's multi-layered, which is good.

Interview participant seven stated, "I work better when I am accountable to other people." Many participants did not feel they had the internal motivation and will power to succeed on their own and felt that by being a part of the program would help make them more successful because they did not want to be bad teammates. Interview participant seven also said,

> I just liked getting to put my numbers down and I wanted my teammates to say that was a good member. I wanted them to say, Oh participant seven has good numbers. She's holding up her end of the deal.

Some observations made during the study were that teams composed of teammates from the same department and teams with spouses as teammates were more successful at inputting data and being on a winning team. Individuals in the same department typically saw each other more frequently during the day and week. Their offices were also closer to one another, which facilitated talking about the program as well as personal and team accountability. When teams were composed of spouses, the accountability during the day also carried over into the night and

weekend, which seemed to help tremendously. These findings are congruent with Noar et al. (2007) and Williams, et al. 2011, who concluded from their studies that social support had the greatest impact on program efficacy. Researchers Elliot et al. (2004) and MacKinnon et al. (2010) both reported that team-based health promotion classes had more positive effect on physical activity than individual health counseling. In contrast to positive experiences with the team-based concept, a reoccurring topic was how discouraging and frustrating it was to have bad teammates. Teams received scores by averaging all team-member entries. If a team member failed to log their data, then the team's average suffered significantly. When asked if she thought her team was successful, interview participant seven stated,

> My team was not successful. No, we did not…we had some people who did not record. We had some people who, I don't even know if they actively participated. We had a core little group that was really in to it and was real, "How many steps did you get? Did you remember to drink your water? Did you remember to log on?" We had some people that just, they just signed up and didn't follow through.

Interview participant 11 said, "Well one person asked to be on our team and I didn't really know how to tell him no. They were really a drag on the team."

Barriers. Interview participant one, like other participants, experienced a hindering injury that prevented him from exercising the way he wanted. In addition, like other participants, he viewed time as a barrier and explored better time saving options to working out and exercising. He stated,

> One issue was time, like I mentioned before. Another issue was that at the beginning of this, I was actually going to a local gym, and several years ago I sustained an injury to my right shoulder. I actually fell and dislocated it. I had reached a point where I was trying to begin using some heavier weights with the machine and my shoulder started bother me again. That part became uncomfortable. Plus, there was a time commitment to go to the

gym as well. After a while I was thinking in terms of maybe I could just go do some things at home and save time.

In agreement with interview participant one, interview participant four stated,

> The only barriers would be the late hours working and not being able to get out there and get going and get walking…As far as barriers, being tired sometimes had an effect, but I usually try to just make myself go ahead and do it.

Facilitators. The use of technology in this study was instrumental and helped with the tracking of health behaviors as well as logging data. Participants appreciated devices such as Fitbits and Jawbones that facilitated the recording of daily data. Participants were given the option to choose how to keep up with their data. Pedometers were handed out to those that wanted them for step tracking. When asked on the Post Demographic Survey how they tracked their steps, the results were as follows: 20% used pedometers, 58% used some type of electronic device such as a Fitbit or Jawbone, 18% chose to use an app on their smartphone and 4% of participants estimated their daily steps. This was a significant decrease in pedometer usage when compared to the Pre Demographic Survey that asked about who would use a pedometer to track steps (38%). When asked if there were any changes on campus during the 12-week program, participant five from focus group 2 said, "I noticed a lot more people had a Fitbit or Garmin and were actually starting to pay attention to their steps. So you were able to kind of notice the wrist-ware if you will."

These types of devices were encouraging because it was easy to see daily data, which was a constant reminder of daily goals, and when those goals were met, the device would vibrate or send a congratulatory message. Interview participant seven like others enjoyed using technology in the program and said, "I liked when that Fitbit buzzed at 10,000 steps." Participants felt gratification and victory each time they received those positive reinforcement

gestures. These types of smartwear devices can also be programed to remind you to "get up and move" after a certain time of being sedentary. Some participants felt they would have been more successful if there had been more of an "in your face" reminder of their daily goals from teammates and the Program Director to increase accountability.

Scout, the mediated delivery system proved a very convenient and useful way to deliver the program. There were no negative comments directly targeted at the mediated delivery system. Overall, participants were in agreeance that a mediated delivery system of information and data recording was easy to use because it was intuitive and easily accessible. In addition, participants appreciated the fact that videos, journals and other activities (i.e. tailored assignments) were kept short, but yet provided useful information about wellness. Interview individual fifteen stated, "I thought it (Scout) was very nice because I could do it (i.e. enter data, videos, journal entries) here at work or I could do it at home. Having it all there through Scout, it just made it real convenient." Interview participant thirteen stated,

> I liked it. I thought it was a good delivery system. The email updates and alerts and you know like that. If I didn't turn something in or when the results posted. We always got an email saying, "Hey, this is who won, or hey you didn't turn this in, or hey it's time for this, or these activities are available.

Interview participant ten said,

> It was delivered well. You did a good job of putting it all together with the recording of the data. That was very easy. Something I could do, so it had to be easy. Of course, the little programs that you put together with different videos and all like that, those were good and useful.

Participant one from focus group two replied,

> I thought the Scout part of it was pretty easy. The quizzes and everything were set up. You knew when you had to do them and if you were late doing them. It would send you "Hey, you're late, you need to do this." So you always knew where your progress was. You knew what was coming next and then the Google drive where we had the sheets to plug in our information that was easy. And it was nice that you could see what your other teammates were doing and if they were missing something you could email them and say, "Plug this in or whatever." I think the easiness of it was great. Definitely user-friendly.

Dimensions of Change. When asked why she decided to participate in the Wellness Program, interview participant sixteen responded, "To try to make myself a more healthy person." Interview participant fourteen said,

> Well, mainly it's because I just need to get in the habit of exercise. I need to stay in that habit. So that's the most important thing, and then of course I know it helps my blood pressure and know it helps my weight and that kind of stuff too.

When asked the same question, Interview participant fifteen responded, 'I wanted to try to become healthier and make better healthy habits." Interview participant seven provided an in depth response by saying,

> I have a family history of diabetes. I have some kidney problems already, kidney stones and some damage to the kidney from kidney stones. My greatest fear in life is ever having to be on …when you have to have your blood taken out, filtered, and put back in. Dialysis. I want to avoid dialysis at any cost so my biggest motivation for weight loss has always been avoiding dialysis, avoiding diabetes because I do have a strong family history…I feel better when I walk. I know I'm capable of doing it. When I walk I am healthier, my weight is better managed.

Since many participants were in a later stage of change prior to the program and the focus groups and interviews were conducted after the program, it is no surprise the participants were aware of the health benefits of being more active.

Keeping up with steps was the first habit tracked in the wellness program; therefore, steps were counted all 12 weeks. Participants referenced steps more than any of the other habits (i.e. water intake, sleep and fruit, vegetable intake) during interviews. It seemed that many participants associated a higher number of steps with better health than any of the other health habits.

Participants were divided on whether or not they liked gradually introducing a new habit every three weeks or whether they wanted to focus on all habits from the beginning of the program. It is suggested to gradually increase new health behaviors instead of immediately creating a comprehensive wellness program (Carthenon, et al., 2009). Interview participant eight talked about how she liked the gradual buildup of habits and said,

> It made it easier to keep up with the stuff and get in the habit of doing things when it wasn't all at once, like I can't do this, you have to do all that, it's too much. This way it just kind of eased you in to doing things and it gave you alternatives I think.

However, in contrast, interview participant five said,

> I think maybe if you track everything from the beginning, I think it's good and bad. I think it would be good in that you would...I think, early on, people are probably more into it than as it went on. I think part of the food, the thing that we did last, and the sleep, if we had done those form early on, then maybe I would have done better at those than if by the end…Same time, it's you also tracking a whole lot of stuff from the very beginning.

Interview participant eight was saying that it was easier to gradually introduce new habits into the program because she didn't feel so overwhelmed with all of the new habits she needed to focus on and in contrast interview participant five wanted all four habits introduced from the beginning because he wanted to focus on all of them at the same time throughout the program, instead of feeling that the ones in the later part of the program were of less importance.

Conclusions

By conducting a mixed-methods study, this study went beyond previous research on worksite wellness programs that primarily focused on outcomes. This study investigated participant perceptions, behavioral and cognitive processes that gave deeper meanings to the quantitative data. Few, if any other studies, focused on all dimensions of wellness by providing targeted information through a mediated platform that provided convenience to participants. Results of this study displayed some similar results as previously conducted studies in terms of the TTM constructs, perceived wellness and barriers and facilitators. Results indicated that a community college setting is an ideal place to incorporate previously established best practices from other studies that used different settings and different type participants. With advancements in technology, it is highly suggested to invest in smartwear devices.

Along those same lines, the method of data recording is crucial in competitive programs (individual or team-based) and needs to be easy and convenient to use. The mediated delivery system along with its accompanying app proved to be effective and useful. It allowed the researcher to reach participants at all three campuses while being very cost effective. Since the biggest barrier for community college participants was lack of time, it was important when targeting and tailoring information and activities to keep them short and concise. In addition, since limited time was a physical activity barrier, encourage individuals to divide the recommended physical activity time throughout the day instead of all at once. It is easier to have

the office take three – ten minute walks throughout the day instead of a thirty-minute walk. At the end of the program, participants had a better realization of how the social aspect of the program influenced their individual and team performance. There were no documented comments (before the program program, during the program, after the program) of participants suggesting they would rather complete the program individually instead of on their team. However, there were many comments, from both strong and weak-team members, wanting more team interaction. The participants wanted to be held more accountable by their teammates and by the program in general. No significant changes were seen through quantitative data in decisional balance and self-efficacy throughout this program. However, focus groups, interviews and journal entries told a different story, and it is highly likely the cumbersome input of data and journal entries affected those two constructs. When following best practices, worksite wellness programs can improve participant health behaviors by creating and fostering a "wellness culture." This will help hold employees more accountable because it is part of the "social norm." These suggestions along with already established best practices are a step closer to producing positive worksite wellness results, which benefit both employees and employers.

Implications

Recommendations for future wellness program implementation, recruitment and retention of participants are consistent with previous findings and suggestions in literature, and it is recommended to continue using those best practices. However, the use of pedometers was a barrier and caused frustration to many that used them. It is highly suggested to move to some type of smartwear device such as a Garmin, Fitbit or Jawbone to keep up with physical activity. While this will increase program or participant costs, the gains in motivation and ease of data tracking will be worthwhile. In addition, while previous studies have used a virtual delivery

platform and considered it effective, it is still a new concept that has potential to grow and develop into an even more convenient platform for participants.

To my knowledge, there are no other worksite wellness programs of this magnitude that have a team-based theme. Many participants acknowledged their teammates as the main source of inspiration and motivation to strive to do their best during the competition. In acknowledging the major importance of social motivation, Sallis, Grossman, Pinski, Patterson and Nader (1987) developed a *Social Support for Physical Activity Questionnaire* that evaluates participant support from family and friends. Like the TTM Questionnaires, it can be used as an effective predictor of how successful an individual might be in changing health habits and increasing physical activity (Sallis, et al., 1987). Also, like the TTM constructs, results from the questionnaire can be used to create strategies to help the participant become stronger in that area, therefore increasing the chances of successfully changing or adopting new health behaviors.

It was suggested by a couple of individuals to have two different levels of competition in the program. There could be a competitive tier and a leisure tier. This would eliminate some individuals from feeling so intimidated when they see competitive teams' numbers so much higher than theirs. This would also encourage the more competitive teams to "turn it up a notch" without feeling guilty about "beating" other teams so badly. Through interviews, it seemed that people on non-successful or non-winning teams hated to lose, which implies they are competitive, but at the same time liked the idea of not being competitive and just participating for better health and to be part of a team.

In addition to only focusing on the employee, worksite wellness programs need to place more emphasis on the entire family and capitalize on the "social" aspect of behavior change as well as turning it into a facilitator instead of allowing it to be a barrier. Employers are concerned about healthcare costs and many employers provide health insurance not only to the employee,

but also to the employee's family. This is more reason to include families in the wellness program as well. By including spouses and children, employers extend their eight-hour "healthy culture" to 24 hours.

Like other similar studies (Butler, et al., 2015; Haines, et al., 2007), the participants were predominately women (68%), Caucasian (78.7%) and some-what middle-aged with 60% of the participants being between the ages of 36 and 55. It is recommended that future researchers continue studies like this and use a larger sample size along with more males and minority groups. It is also suggested that there be longer-term follow-ups. This program was only three months long; therefore, participants might not have had enough time to progress through the constructs. It is important to note that individuals do not progress through each construct at the same rate.

The evidence from this study demonstrated that a stage-matched tailored worksite wellness program, specifically, a community college employee wellness program could be successful. Success was evident by participants showing significant gains in physical activity as well as improvements in perceived wellness and some of the TTM constructs. The gathering of qualitative data helped tell the story of what participants were experiencing throughout the entire program. The open-ended questions, journal entries, focus groups and interviews also helped to better understand how employers can better implement and facilitate worksite wellness programs to ultimately cut back on health costs by having healthier employees.

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APPENDIX A

INFORMED CONSENT

INSTITUTIONAL REVIEW BOARD

You are being asked to participate in a research project conducted by Amy Rogers, a doctoral student in the Department of Counseling, Foundations, and Leadership at Columbus State University. Dr. Ellen Martin from the Health, Physical Education and Exercise Science Department will be supervising the study.

I. Purpose:

The purpose of this project is to examine the effects of a worksite wellness program on perceived wellness and the constructs of the Transtheoretical Model (TTM) of change. You are invited to participate in this study because you are an employee of Southern Union State Community College.

II. Procedures:

If you agree to participate, you will be asked to complete a survey requesting basic demographic information at the beginning of the study. Also, you will be asked to complete surveys concerning perceived wellness and the TTM of change prior to and at the completion of the 12 week wellness program through the College's online platform (Canvas). During the program, you will record daily health behavior data (steps, water, sleep, and nutrition) and submit weekly journal entries responding to prompted questions through Canvas. At the conclusion of the program, you may be purposefully chosen to participate in semi-structured interviews and focus groups.

III. Possible Risks or Discomforts:

There are no more risks than if you were to participate in any other wellness program.

IV. Potential Benefits:

Potential benefits of this wellness program include, but not limited to (1) awareness of daily physical activity, (2) awareness of daily water-intake, (3) awareness of nightly sleep, and (4) awareness of daily fruit and vegetable consumption.

V. Costs and Compensation:

There is no compensation for you participating in this study.

VI. Confidentiality:

Any information obtained in connection with this study that can be identified with you will remain confidential. All data will be kept confidential in Canvas and will be destroyed one year after completion of the study. The principal investigator, the

dissertation committee chair, and the Instructional Technology Administrator will be the only people with access to the data. The results of this study may be presented at a professional conference and/or published in an appropriate journal. Your name will not be used in any publication or presentation.

VII. Withdrawal:

Your participation in this research study is voluntary. You may withdraw from the study at any time, and your withdrawal will not involve penalty or loss of benefits.

For additional information about this research project, you may contact the Principal Investigator, Amy Rogers at 334-745-6437 ext: 5530 or rogers_amy@columbusstate.edu. If you have questions about your rights as a research participant, you may contact Columbus State University Institutional Review Board at irb@columbusstate.edu

I have read this informed consent form. If I had any questions, they have been answered. By selecting the *I agree* radial and *Submit*, I agree to participate in this research project. [If participation is dependent upon the participant being 18 years of age or older, you must include a statement here confirming the age.]

○ I agree. ○ I do not agree.

Submit

APPENDIX B

PERMISSION FROM SUPERVISING DEAN TO CONDUCT STUDY

Dissertation Study

Inbox x

Amy Rogers <arogers@suscc.edu> 10/26/15

to Linda

Hi Dr. North,

I am meeting with my Dissertation Committee this Friday and just wanted to make sure again that I have clearance and permission to use the Wellness Program and results (beginning in January) of the program for my Dissertation? I am working on IRB approval and working on consent forms so all participants will know what they are involved in. All personal information will be kept confidential and no one will be able to be identified. I am also on the agenda for Professional Development in November to talk about the Wellness Program.

I will most likely need to get something official from you later.

Linda North <lnorth@suscc.edu> 10/26/15

to me

Yes, This is fine. Also can we meet and talk about your Professional Development plan tomorrow? Linda

APPENDIX C

Wellness Competition Registration Form

(Please return to Amy Rogers by January 15th – HSB 227, arogers@susce.edu)

Team Name: _____ **Team Captain:** _____ **Captain's Email:** _____

(Non-Captain Members)

Member 1 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Member 2 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Member 3 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Member 4 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Member 5 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Member 6 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Member 7 Name: _____ Email: _____ Shirt Size: _____ SU Faculty/Staff: Yes or No

Additional Comments: (Want/Need more teammates, etc.)

APPENDIX D

PRE AND POST PERCEIVED WELLNESS SURVEY

Perceived Wellness Survey

The following statements are designed to provide information about your wellness perceptions. Please carefully and thoughtfully consider each statement, then select the one response option with which you most agree.

		Very Strongly Disagree					Very Strongly Agree
1.	I am always optimistic about my future.	1	2	3	4	5	6
2.	There have been times when I felt inferior to most of the people I knew.	1	2	3	4	5	6
3.	Members of my family come to me for support.	1	2	3	4	5	6
4.	My physical health has restricted me in the past.	1	2	3	4	5	6
5.	I believe there is a real purpose for my life.	1	2	3	4	5	6
6.	I will always seek out activities that challenge me to think and reason.	1	2	3	4	5	6
7.	I rarely count on good things happening to me.	1	2	3	4	5	6
8.	In general, I feel confident about my abilities.	1	2	3	4	5	6
9.	Sometimes I wonder if my family will really be there for me when I am in need.	1	2	3	4	5	6
10.	My body seems to resist physical illness very well.	1	2	3	4	5	6
11.	Life does not hold much future promise for me.	1	2	3	4	5	6
12.	I avoid activities which require me to concentrate.	1	2	3	4	5	6
13.	I always look on the bright side of things.	1	2	3	4	5	6
14.	I sometimes think I am a worthless individual.	1	2	3	4	5	6
15.	My friends know they can always confide in me and ask me for advice.	1	2	3	4	5	6
16.	My physical health is excellent.	1	2	3	4	5	6
17.	Sometimes I don't understand what life is all about.	1	2	3	4	5	6
18.	Generally, I feel pleased with the amount of intellectual stimulation I receive in my daily life.	1	2	3	4	5	6
19.	In the past, I have expected the best.	1	2	3	4	5	6
20.	I am uncertain about my ability to do things well in the future.	1	2	3	4	5	6
21.	My family has been available to support me in the past.	1	2	3	4	5	6
22.	Compared to people I know, my past physical health has been excellent.	1	2	3	4	5	6
23.	I feel a sense of mission about my future.	1	2	3	4	5	6
24.	The amount of information that I process in a typical day is just about right for me (i.e., not too much and not too little).	1	2	3	4	5	6
25.	In the past, I hardly ever expected things to go my way.	1	2	3	4	5	6
26.	I will always be secure with who I am.	1	2	3	4	5	6
27.	In the past, I have not always had friends with whom I could share my joys and sorrows.	1	2	3	4	5	6
28.	I expect to always be physically healthy.	1	2	3	4	5	6
29.	I have felt in the past that my life was meaningless.	1	2	3	4	5	6
30.	In the past, I have generally found intellectual challenges to be vital to my overall well-being.	1	2	3	4	5	6
31.	Things will not work out the way I want them to in the future.	1	2	3	4	5	6

32.	In the past, I have felt sure of myself among strangers.	1	2	3	4	5	6
33.	My friends will be there for me when I need help.	1	2	3	4	5	6
34.	I expect my physical health to get worse.	1	2	3	4	5	6
35.	It seems that my life has always had purpose.	1	2	3	4	5	6
36.	My life has often seemed void of positive mental stimulation.	1	2	3	4	5	6

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APPENDIX E

PRE AND POST PHYSICAL ACTIVITY STAGES OF CHANGE

For each of the following questions, please circle Yes or No. Please be sure to read the questions carefully.
Physical activity or exercise includes activities such as walking briskly, jogging, bicycling, swimming, or any other activity in which the exertion is at least as intense as the activities.

	No	Yes
1. I am currently physically active.	0	1
2. I intend to become more physically active in the next 6 months.	0	1
For activity to be regular, it must add up to a total of 30 minutes or more per day to be done at least 5 days per week. For example, you could take one 30-minute walk or take three 10-minute walks for a daily total of 30 minutes.		
	No	Yes
3. I currently engage in regular physical activity.		
4. I have been regularly physically active for the past 6 months.		

If (question 1 = 0 and question 2 = 0, then participant is in Precontemplation.
If (question 1 = 0 and question 2 = 1), then participant is in Contemplation.
If (question 1 = 1 and question 3 = 0) then participant is in Preparation.
If (question 1 = 1, question 3 = 1 and question 4 = 0) then participant is in Action.
If (question 1 = 1, question 3 = 1, and question 4 = 1), then participant is in Maintenance.

From B. Marcus and L. Forsyth, 2009, *Motivating people to be physically active*, 2nd ed. (Champaign, IL: Human Kinetics). Reprinted, by permission, from B.H. Marcus et al., 1992, "The stages and processes of exercise adoption and maintenance in a worksite sample," *Health Psychology, 11*(6), 386-395.

APPENDIX F

PRE AND POST CONFIDENCE (SELF-EFFICACY)

Physical activity or exercise includes activities such as walking briskly, jogging, bicycling, swimming, and any other activity in which the exertion is at least as intense as these activities. Please select the number that indicates how confident you are that you could be physically active in each of the following situations:

1 = not at all confident
2 = slightly confident
3 = moderately confident
4 = very confident
5 = extremely confident

1. When I am tired
2. When I am in a bad mood
3. When I feel I don't have time
4. When I am on vacation
5. When it is raining or snowing

From B. Marcus and L. Forsyth, 2009, *Motivating people to be physically active*, 2nd ed. (Champaign, IL: Human Kinetics). Reprinted with permission from B. Marcus, V Selby, R. Niaura, & J. Rossi. (1992). Self-efficacy and the stages of exercise behavior change. *Research Quarterly for Exercise Science and Sport, 63*(1), 60-66.

APPENDIX G

PRE AND POST DECISIONAL BALANCE

Physical activity or exercise includes activities such as walking briskly, jogging, bicycling, swimming, and any other activity in which the exertion is at least as intense as these activities.
Please rate how important each of these statements is in your decision of whether to be physically active. In each case, think about how you feel **right now,** not how you have felt in the past or would like to feel.

Scale
1 = not at all important
2 = slightly important
3 = moderately important
4 = very important
5 = extremely important

1. I would have more energy for my family and friends if I were regularly physically active.
2. Regular physical activity would help me relieve tension.
3. I think I would be too tired to do my daily work after being physically active.
4. I would feel more confident if I were regularly physically active.
5. I would sleep more soundly if I were regularly active.
6. I would feel good about myself if I kept my commitment to be regularly active.
7. I would find it difficult to find a physical activity that I enjoy and that is not affected by bad weather.
8. I would like my body better if I were regularly physically active.
9. It would be easier for me to perform routine physical tasks if I were regularly physically active.
10. I would feel less stressed if I were regularly physically active.
11. I feel uncomfortable when I am physically active because I get out of breath and my heart beats very fast.
12. I would feel more comfortable with my body if I were regularly physically active.
13. Regular physical activity would take too much of my time.
14. Regular physical activity would help me have a more positive outlook on life.
15. I would have less time for my family and friends if I were regularly physically active.
16. At the end of the day, I am too exhausted to be physically active.

Decisional Balance Scoring

Pros = (item 1+ item 2 + item 4 + item 5 + item 6 + item 8 + item 9 + item 10 + item 12 + item 14) / 10

Cons = (item 3 + item 7 + item 11 + item 13 + item 15 + item 16) / 6

From B. Marcus and L. Forsyth, 2009, *Motivating people to be physically active*, 2nd ed. (Champaign, IL: Human Kinetics). Reprinted, by permission, from B.H. Marcus, W. Rakowski, and J.S. Rossi, 1992, "Assessing motivational readiness and decision-making for exercise," *Health Psychology, 11*(4), 257-261.

APPENDIX H

PRE AND POST PROCESSES OF CHANGE

Physical activity or exercise includes activities such as walking briskly, jogging, bicycling, swimming, and any other activity in which the exertion is at least as intense as these activities. The following experiences can affect the exercise habits of some people. Think of any similar behaviors you may currently have or had during the past month. Then rate how frequently the behavior occurs. Please circle the number that best describes your answer for each experience.

How frequently does this occur?
1 = never
2 = seldom
3 = occasionally
4 = often
5 = repeatedly

1. Instead of remaining inactive, I engage in some physical activity.
2. I tell myself I am able to be physically active if I want to.
3. I put things around my home to remind me to be physically active.
4. I tell myself that if I try hard enough, I can be physically active.
5. I recall information people have personally given me on the benefits of physical activity.
6. I make commitments to be physically active.
7. I reward myself when I am physically active.
8. I think about information from articles and advertisements on how to make physical activity a regular part of my life.
9. I keep things around my place of work that remind me to be physically active.
10. I find society changing in ways that make it easier to be physically active.
11. Warnings about the health hazards of inactivity affect me emotionally.
12. Dramatic portrayals of the evils of inactivity affect me emotionally.
13. I react emotionally to warnings about an inactive lifestyle.
14. I worry that inactivity can be harmful to my body.
15. I am considering the idea that regular physical activity would make me a healthier, happier person to be around.
16. I have someone I can depend on when I am having problems with physical activity.
17. I read articles about physical activity in an attempt to learn more about it.
18. I try to set realistic physical activity goals for myself rather than set myself up for failure by expecting too much.
19. I have a healthy friend who encourages me to be physically active when I don't feel up to it.
20. When I am physically active, I tell myself that I am being good to myself by taking care of my body.
21. The time I spend being physically active is my special time to relax and recover from the day's worries, not a task to get out of the way.
22. I am aware of more and more people encouraging me to be physically active these days.
23. I do something nice for myself for making efforts to be more physically active.

24. I have someone who points out my rationalizations for not being physically active.
25. I have someone who provides feedback about my physical activity.
26. I remove things that contribute to my inactivity.
27. I am the only one responsible for my health, and only I can decide whether or not I will be physically active.
28. I look for information related to physical activity.
29. I avoid spending long periods of time in environments that promote inactivity.
30. I feel that I would be a better role model for others if I were regularly physically active.
31. I think about the type of person I would be if I were physically active.
32. I notice that more businesses are encouraging their employees to be physically active by offering fitness courses and time off to work out.
33. I wonder how my inactivity affects those people who are close to me.
34. I realize that I might be able to influence others to be healthier if I would be more physically active.
35. I get frustrated with myself when I am not physically active.
36. I am aware that many health clubs now provide babysitting services to their members.
37. Some of my friends might be more physically active if I were.
38. I consider the fact that I would feel more confident I myself if I were regularly physically active.
39. When I feel tired, I make myself be physically active anyway because I know I will feel better afterward.
40. When I'm feeling tense, I find physical activity a great way to relieve my worries.

From B. Marcus and L. Forsyth, 2009, Motivating people to be physically active, 2nd ed. (Champaign, IL: Human Kinetics). Reprinted, by permission, from B. H. Marcus et al., 1992. The stages and processes of exercise adoption and maintenance in a worksite example, *Health Psychology, 11*(6), 386-395.

APPENDIX I

WEEK 2 TAILORED INTERVENTION FOR STAGES PC, C AND P

From The Couch To The Pavement – A Plan To Get You Moving.

Get Moving — What are you waiting for?

We all know exercise is good for us, but about 80 percent of Americans don't get the recommended amount of physical activity. What steps have you taken to live a more active life? Are you sitting on the couch waiting for someone to motivate you to get up? Do you tell yourself, "Tomorrow I'm going to get healthy"? Or is it more like, "I wish I could fit into the clothes I love, but I don't know how to make that happen?" We've all heard "It's never too late!" or "Anyone can do it." And guess what? It's true! If you don't know where to start, don't know how to fit in fitness or feel overwhelmed with life's daily tasks, take heart! We're here to help you make a plan to change your habits, and improve your health, your heart and your waistline.

People give many reasons for not making their health a priority. Do any of these excuses sound like things you'd say?

Address Your Obstacles

- "I'm so busy. I just don't have time!" Many Americans live with a packed schedule. You can make your health a priority over life's other demands. Even our nation's president sets aside time to exercise! You don't have to do your whole workout all at once. Get up 30 minutes earlier in the morning to take a brisk walk, or tack on an extra 30 minutes in the afternoon or evening to raise your heart rate with strength training. You can exercise in two or three 10-15 minute blocks and still benefit! Try our top 10 tips to get more exercise (Links to an external site.)!

- "I can't afford a gym membership." Walking is free! If it's cold or rainy, head to one of the many shopping malls that open their doors early for walkers and joggers. Sometimes gyms run specials. Watch for these at the beginning or end of the year. Or consider buying some workout DVDs or borrowing them from the library. You can even download exercise podcasts. Whatever you choose, find a way to start moving! Get started with these tips for long-term success (Links to an external site.).

- "I got bored with my workout routine." Try something new! There are so many ways to get active. Try tennis with some friends, soccer with your kids or even just switching from yoga to pilates. Your body will respond to the change, and you might notice firmer muscles or extra pounds melting off. Regardless, variety helps you stay more invested in living an active life. Here are some easy tips to get active (Links to an external site.).

- "I feel too tired after a workout." Chronic fatigue with exertion can signal a problem, but if your healthcare provider clears you for exercise, you may just need to pace yourself better. Walk before trying to jog. You may want to consider other energy-boosting plans, too.
  - *Are you pacing yourself and keeping your heart rate at the right level?*
  - *Are you getting enough sleep at night?*
  - *Are you eating food that fuels your body* (Links to an external site.)*, or are you eating too much food that your body can't use?*

- "I don't like working out alone." This is a common complaint that's easy to fix. Find a buddy (Links to an external site.)! Get a walking partner or introduce yourself to someone at the gym, join a team or a walking group, find a neighbor to walk with or exercise with your family. When you exercise in pairs, it's easier to hold each other accountable – especially on those cold, rainy days! You can also listen to

audiobooks or your favorite music on days when no one is available to join you.

- "I'm too young" or "I'm too old." Neither excuse is true. When you're in your 20s and 30s, it's important to regulate your body's metabolism, strengthen your heart and prevent diseases. When you're older, exercise plays a vital role in keeping you healthy and strong. Several studies document how regular exercise improves quality of life during the aging process. So if you're exercising when you're in your 80s, you just might feel like you're in your 70's! Learn more about preventing heart disease at any age (Links to an external site.).

- "I'm new to exercise," or "I'm overweight and I don't know where to start." Is this you? It's easy to use these excuses as mental roadblocks to success. Don't let them stop you. Everyone needs to start somewhere.

Adapted from (2014, June). From the Couch to the Pavement – A Plan to Get You Moving. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/GettingActive/From-the-Couch-to-the-Pavement---A-Plan-to-Get-You-Moving_UCM_425106_Article.jsp#.WNfUmm_ysdU

APPENDIX J

WEEK 2 TAILORED INTERVENTION FOR STAGES A AND M

Please answer the following questions regarding physical activity. Please include the number prior to your answer for each question.

1. My short-term goal that I plan to achieve next week:

2. How I plan to monitor my progress on reaching this goal:

3. My long-term goal I plan to achieve by _____ (date):

4. How I plan to monitor my progress on reaching this goal:

APPENDIX K

WEEK 4 TAILORED INTERVENTION FOR STAGES PC, C AND P

Make Exercise Work for You

What if you could feel good, look better, and save money, all while reducing your risk of cancer, heart disease, and diabetes? You can! Increasing your daily physical activity will do this and more. And best of all, being active for just minutes a day can add years to your life.

Research has proven that we all benefit from being active, regardless of age. People who are active are less stressed, live healthier lives, and have lower medical costs.

Choose your game

It's important to enjoy what you're doing so you won't get bored or think of physical activity as a chore. To help you choose the activity that's right for you, ask yourself these questions:

Do you like to be social, or would you prefer time to yourself?

- Social butterflies should try activities that connect them with other people. Try walking with friends, joining a team or recreation association, or going line-dancing.
- If you need time to yourself, walking, running, swimming, or gardening can give you time to reflect.

Do you need to get energized or wind down?

- For an energy boost, try aerobic activities that get the heart pumping.
- Reduce stress with activities like yoga or tai chi.

Are you goal-oriented, or do you like to stay flexible?

- If you like to feel a sense of accomplishment, choose activities where you can chart and monitor your progress like training for a run, or take up an activity with rising skill levels, like martial arts.
- For a more flexible routine, try walking or find an exercise video you can do at home.

Do you want to get away from it all or get involved?

- If you want to get away, choose outdoor activities like hiking, biking, or rollerblading.
- To get involved in the community, consider building homes for the disadvantaged, taking part in charity walks and runs, helping an elderly neighbor with yard work, or tidying up a local school.

How active should you be?

The recommended goal

Adults should get at least 150 minutes of moderate intensity or 75 minutes of vigorous intensity activity each week (or a combination of these), preferably spread throughout the week.

Children and teens should get at least 1 hour of moderate or vigorous intensity activity each day, with vigorous activity on at least 3 days each week.

- *Moderate* intensity activities are those that require effort equal to a brisk walk.

- *Vigorous* intensity activities generally use large muscle groups and result in a faster heart rate, deeper and faster breathing, and sweating.

But being more physically active than you usually are, no matter what your level of activity, can have many health benefits.

Adapted from (2015, January). Make Exercise Work for You. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/FitnessBasics/Fitness-Basics_UCM_462340_SubHomePage.jsp

APPENDIX L

WEEK 4 TAILORED INTERVENTION FOR STAGES A AND M

Breaking Down Barriers

Most of us are familiar with the most common barrier to a regular physical activity routine -- the lack of time. Work, family obligations and other realities of daily life often get in the way of our best intentions to be more active. There are many additional barriers that vary by the person and life circumstance.

If you're committed to a physical activity program and setting goals for yourself, it's helpful to first identify your personal barriers. By troubleshooting and developing tactics in advance, you'll have better success overcoming them.

Here are some of the more common barriers and solutions for overcoming them:

- **Barrier:** Lack of time

  Solutions: Monitor your activities for one week and identify at least three, 30-minute slots you could use for physical activity. Select activities that you can fit into your home or work routine so you're not wasting time on transportation to another venue to accomplish them. Walking in your neighborhood, climbing stairs at your office or exercising while you watch TV are all good options.

- **Barrier:** Friends and family don't share your interest in physical activity

  Solutions: Explain your fitness and/or health improvement goals to friends and family and ask for their support. Invite friends to participate in physical activity with you. Join a local YMCA or walking club to find people with similar goals to offer support.

- **Barrier:** Lack of motivation and/or energy

  Solutions: Plan ahead. Schedule physical activity for specific times/days and "check" it off your list or calendar each time you complete it. Determine what time of day you feel more energetic and try to fit activity into that time frame. Join an exercise group or class and seek others in the group to help motivate you and keep you accountable to attending.

- **Barrier:** Lack of resources/equipment

  Solutions: Select activities that require minimal facilities or equipment, such as walking, jogging, jumping rope or calisthenics. Identify inexpensive, convenient resources in your community, such as parks and recreation programs, worksite wellness groups, walking clubs, etc.

- **Barrier:** Family caregiving obligations

  Solutions: Exercise with your kids -- go for a walk together, play tag or other running games, get an aerobic dance or exercise tape for kids. You can spend time together, occupy the kids and ensure they're getting the daily physical activity they need to stay healthy. If you have a specific class you like to attend, try alternating babysitting time with a neighbor.

- **Barrier:** Frequent work or leisure travel

  Solutions: Join a YMCA or YWCA and ask about reciprocal memberships that allow access to facilities

in other cities. Pack a jump rope and resistance bands in your luggage. Book hotels that have a pool and/or fitness rooms.

Adapted from (2014, September). Breaking Down Barriers. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/StayingMotivatedforFitness/Breaking-Down-Barriers-to-Fitness_UCM_462208_Article.jsp#.WNfVl2_ysdU

APPENDIX M

WEEK 6 TAILORED INTERVENTION FOR STAGES PC, C AND P

Warm Up and Cool Down

"Warming up and cooling down are good for your exercise performance — you'll do better, faster, stronger — and for your heart since the increased work on the heart 'steps up' with exercise," said Richard Stein, M.D., professor of cardiology in the Department of Medicine at New York University and co-director of Cardiology Consult Services.

"Stretching also makes many people feel better during and after exercise and in some people decreases muscle pain and stiffness." When done properly, stretching activities increase flexibility.

So what's the big deal?

A good warm-up dilates your blood vessels, ensuring that your muscles are well supplied with oxygen. It also raises your muscles' temperature for optimal flexibility and efficiency. By slowly raising your heart rate, the warm-up also helps minimize stress on your heart.

"Warming up before any workout or sport is critical for preventing injury and prepping your body," said Johnny Lee, M.D., director of the Asian Heart Initiative at the New York University Langone Medical Center and president of New York Heart Associates in New York City.

"Stretching allows for greater range of motion and eases the stress on the joints and tendons, which could potentially prevent injury. Warming up, such as low-heart rate cardio, prepares the circulatory and respiratory system for the upcoming 'age- and type-appropriate target heart rate' exercising, whether it's endurance or sprint type of activities."

The cool-down is just as critical. It keeps the blood flowing throughout the body. Stopping suddenly can cause light-headedness because your heart rate and blood pressure drop rapidly.

Warm up

Before you exercise, think about warming up your muscles like you would warm up your car. It increases the temperature and flexibility of your muscles, and helps you be more efficient and safer during your workout. A warm-up before moderate- or vigorous-intensity aerobic activity allows a gradual increase in heart rate and breathing at the start of the activity.

Tips:

- Warm up for 5 to 10 minutes. The more intense the activity, the longer the warm-up.
- Do whatever activity you plan on doing (running, walking, cycling, etc.) at a slower pace (jog, walk slowly).
- Use your entire body. For many people, walking on a treadmill and doing some modified bent-knee push-ups will suffice.

Cool down

Cooling down after a workout is as important as warming up. After physical activity, your heart is still beating faster than normal, your body temperature is higher and your blood vessels are dilated. This means if you stop

too fast, you could pass out or feel sick. A cool-down after physical activity allows a gradual decrease at the end of the episode.

It's good to stretch when you're cooling down because your limbs, muscles and joints are still warm. Stretching can help reduce the buildup of lactic acid, which can lead to muscles cramping and stiffness.

Tips:

- Walk for about 5 minutes, or until your heart rate gets below 120 beats per minute.
- Stretching:
  - Hold each stretch 10 to 30 seconds. If you feel you need more, stretch the other side and return for another set of stretching.
  - The stretch should be strong, but not painful.
  - Do not bounce.
  - Breathe while you're stretching. Exhale as you stretch, inhale while holding the stretch.

So do your body a favor. Take time to gradually progress into your workout and cool down when you're done being physically active.

Adapted from (2015, April). Warm-Up and Cool Down. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/FitnessBasics/Warm-Up-Cool-Down_UCM_430168_Article.jsp#.WNfV_G_ysdU

APPENDIX N

WEEK 6 TAILORED INTERVENTION FOR STAGES A AND M

Preventing Injury During Your Workout

Walking is one of the safest ways to get more physical activity. Minimize your injury risk with these tips:

Get a smart start

Start low and go slow with supportive, well-fitting, cushioned athletic shoes. Increase your walking time or distance by 10 to 20 percent each week. Replace your shoes every 300-500 miles to avoid the wear and tear that can contribute to injuries. See "Sneaker Savvy" handout. You can find a list of walking shoes recommended by the American Academy of Podiatric Sports Medicine at http://www.aapsm.org/walkingshoes.html.

Avoid blisters

Studies have shown that synthetic fiber socks decrease blisters compared to cotton socks. (Cotton tends to absorb moisture and increase friction.) Look for socks that are made with synthetic fibers such as Coolmax®, acrylic or polypropylene. If you buy new shoes, start with a short walk so that new pressure points don't irritate your skin.

Skip the shin splints

Shin splints (pain on the front of your lower leg) can occur if you increase your walking distance and speed too quickly or add too many hills too soon. Prevent them by wearing athletic shoes with adequate support and cushioning and gradually increasing your walking mileage and pace. Be sure and stretch your calves (both straight and bent knee) after walking.

Nix the knee pain

There are many causes of knee pain, including osteoarthritis and other problems. If you experience knee pain when you exercise, talk to your doctor. You may need a new pair of walking shoes with better support or cushioning. You may also benefit from strengthening and/or stretching exercises targeting the muscles that support the knee and hip.

Happy trails

Don't forget to look both ways when you cross the street — especially with many quiet hybrid cars on the road! If you're listening to your iPod, make sure the sound doesn't drown out street noise. Wear light-colored clothing with reflective strips if you're walking at dawn or dusk.

Walking on sidewalks is safest. If you walk on the road, walk against traffic so you can see approaching cars. There is a slight grade from the middle of the street to the curb to allow for water drainage. Walking on the edge of the street forces the downhill leg to bend slightly inward, stretching your iliotibial band (a ligament that runs along the outside of your thigh). This could cause some irritation and pain. Alternate walking on different sides of the street so you don't have the same leg consistently on the downhill slope.

Concrete sidewalks are less forgiving than asphalt. Cinder tracks and dirt trails are even softer and gentler on your joints.

Walking paths and hiking trails can be scenic and refreshing. Just watch out for uneven terrain, rocks, tree roots or hidden holes, which could cause ankle injuries. You may want to invest in lightweight trail running or hiking shoes, which provide additional support for walking in the great outdoors.

Injury 101

Listen to your body. If you feel pain, particularly if it increases or comes on earlier in your walk, limit your activity and contact your doctor.

If you experience an injury while walking, follow the **RICE** prescription and call your healthcare provider:

- **Rest.** Rest the injured area. Get off your feet!
- **Ice.** Apply a bag of ice to the injured area for about 20 minutes. Ice is nature's anti-inflammatory and can reduce tissue damage. Use a bag of frozen peas if you don't have an ice bag handy. Place a wet cloth between the ice pack and your skin. Repeat morning, after work and evening as long as you experience pain and/or swelling.
- **Compression.** Use an ace bandage/wrap to secure your ice bag to the injury with some pressure. This can help control swelling.
- **Elevation.** If your foot or knee is injured, sit or lie down with your leg elevated at/above heart level. This reduces swelling and can help promote faster healing.

Adapted from (2015, August). Preventing Injury During Your Workout. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/Walking/Preventing-Injury-During-Your-Workout_UCM_461780_Article.jsp#.WNfWqW_ysdU

APPENDIX O

WEEK 8 TAILORED INTERVENTION FOR STAGES PC, C AND P

5 Steps to Enjoying Exercise - Or At Least Not Hating It

We all know the benefits of regular physical activity – increased energy, better cardiovascular health, reducing the risk of heart disease and stroke and looking more svelte.

But about 80 percent of Americans don't make exercise a regular habit, and, according to a 2012 American Heart Association website survey, 14 percent say they don't like exercise.

So how do you overcome an exercise aversion? Mercedes Carnethon, Ph.D., associate professor of preventive medicine at Northwestern University's Feinberg School of Medicine, has some tips to help you incorporate exercise into your life – and maybe even learn to like it.

1. Exercise That Suits You

Find an exercise that best fits your personality, Dr. Carnethon said. If you are social person, do something that engages you socially – take a group exercise class, join a kickball team or walk with a group of friends. Or, if you prefer having time alone, walking or jogging solo might be a better fit for you. Finding a peer group is the perfect way to connect with others who share your goals, lifestyles, schedules and hobbies.

Try some of these ideas to help you get moving – at home, at work or at play.

2. Make it a Habit

It can take a little while for something to become a habit, so give yourself the time to create a regular routine. One way is to try to exercise around the same time each day.
"Exercise can become addictive in a positive way," said Dr. Carnethon, who is also an American Heart Association volunteer. "Once it becomes a habit, you'll notice when you aren't doing something."

3. Build Exercise Into Your Lifestyle

Be honest with yourself. If you don't live close to a gym, it may be harder to become a habit for you. Likewise, if you are not a morning person, don't plan on somehow getting up at the crack of dawn to make a boot camp class.

"The key is building activity into your lifestyle so it is not disruptive," Dr. Carnethon said.

There are many ways to fit exercise into your life, and it doesn't mean you have to make a big financial investment.

You can borrow exercise videos from the library or DVR an exercise program. Do weight or resistance training with items around your home (for example, use canned goods as light weights). Walking is great option, as well. The only investment is a good pair of shoes.

4. Do Bouts of Exercise

It's OK to break up your physical activity into smaller segments, Dr. Carnethon said. The American Heart Association recommends 30 minutes a day of exercise most days, but if that sounds overwhelming, try three 10-minute workout sessions.

You could do a quick calisthenics routine when you wake up, take a brief walk after lunch at work and, if you commute with public transportation, get off a stop earlier and walk the rest of the way.

5. Keep Going

If you miss a day or a workout, don't worry about it. Everybody struggles once in a while. Just make sure you get back at it the next day.

"It doesn't take too long to get back on track," Dr. Carnethon said. "It's easy to make something a habit again. You will see same benefits before. Any little bit you can fit in will show benefits."

Adapted from (2015, August). 5 Steps to Enjoying Exercise – Or At Least Not Hating It. Retrieved from https://healthyforgood.heart.org/Move-more/Articles/5-Steps-to-Loving-Exercise

APPENDIX P

WEEK 8 TAILORED INTERVENTION FOR STAGES A AND M

Food As Fuel - Before, During and After Workouts

Your body is your vehicle, so you have to keep your engine — your heart — running when you work out.

That means fueling up your tank with the right foods and your radiator with the right fluids, using with right amounts at the right times. The American College of Sports Medicine says, "Adequate food and fluid should be consumed before, during, and after exercise to help maintain blood glucose concentration during exercise, maximize exercise performance, and improve recovery time. Athletes should be well hydrated before exercise and drink enough fluid during and after exercise to balance fluid losses."

"You don't have to adhere to a rigid schedule and there are no hard-fast rules," said Riska Platt, M.S., R.D., a nutrition consultant for the Cardiac Rehabilitation Center at Mount Sinai Medical Center in New York. "But there are some things you should do before, during and after you work out."

Here is what Ms. Platt recommends:

Before: Fuel Up!

Not fueling up before you work out is like "driving a car on empty," said Platt, an American Heart Association volunteer. You also won't have enough energy to maximize your workout and you limit your ability to burn calories.

Ideally, fuel up two hours before you exercise by:

- Hydrating with water.
- Eating healthy carbohydrates such as whole-grain (Links to an external site.) cereals (with low-fat or skim milk), whole-wheat toast (without the fatty cream cheese), low-fat or fat-free yogurt, whole grain pasta, brown rice, fruits and vegetables (Links to an external site.).
- Avoiding saturated fats (Links to an external site.) and even a lot of healthy protein — because these types of fuels digest slower in your stomach and take away oxygen and energy-delivering blood from your muscles.

If you only have 5-10 minutes before you exercise, eat a piece of fruit such as an apple or banana.

"The key is to consume easily digested carbohydrates, so you don't feel sluggish," Platt said.

During: Make a Pit Stop

Whether you're a professional athlete who trains for several hours or you have a low to moderate routine, keep your body hydrated with small, frequent sips of water.

Platt notes that you don't need to eat during a workout that's an hour or less. But, for longer, high intensity vigorous workouts, she recommends eating 50-100 calories every half hour of carbohydrates such as raisins, an energy bar or banana.

After: Refuel Your Tank

After your workout, Ms. Platt recommends refueling with:

- **Fluids.** Drink water, of course. Blend your water with 100% juice such as orange juice which provides fluids, carbohydrates.

- **Carbohydrates.** You burn a lot of carbohydrates — the main fuel for your muscles — when you exercise. In the 20-60 minutes after your workout, your muscles can store carbohydrates and protein as energy and help in recovery.

- **Protein.** Eat things with protein to help repair and grow your muscles. It's important to realize that these are general guidelines. We have different digestive systems and "a lot depends on what kind of workout you're doing," Platt said.

  So do what works best for you. Know that what you put in your body (nutrition) is as important as you what you do with your body (exercise). Both are crucial to keeping your engine performing at its best.

Adapted from (2015, January) Food As Fuel - Before, During and After Workouts. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/FitnessBasics/Food-as-Fuel---Before-During-and-After-Workouts_UCM_436451_Article.jsp#.WNfXim8rIdU

APPENDIX Q

WEEK 10 TAILORED INTERVENTION FOR STAGES PC, C, P, A AND M

Celebrating Your Fitness Success

What's the point of hard work if you don't celebrate success once your goal is accomplished?

After you set your personal physical activity goals, don't forget to determine how you will celebrate success for hitting a specific milestone.

Choose Your Reward

Whether your goal is simple -- achieving 150 minutes-per-week of activity on a regular basis or more complex -- like finishing your first triathlon -- write down a meaningful reward before beginning your fitness journey. And make sure you follow through when you reach your goal.

One caution: food rewards are generally not recommended because these reinforce unhealthy eating habits. If you have worked so hard to get active and possibly lose weight, but then reward yourself with a high-fat meal or treat, you may sabotage some of the healthy habits you have worked so hard to create!

Tangible Rewards

Here's an example of tangible rewards that may appeal to you:

- New clothing
- Concert tickets
- Vacation
- Night out with friends
- Spa day
- Relaxation/time alone
- Health rewards

The following are some of the health rewards that may come with achieving physical activity goals. It's important to celebrate these less tangible, but very important rewards, because they serve as additional reminders of your success. A simple screening at your doctor's office or at a worksite wellness fair -- before and after -- your program will show you the progress you've made toward these health rewards:

Adapted from (2014, September). Celebrating Your Fitness Success. Retrieved from http://www.heart.org/HEARTORG/HealthyLiving/PhysicalActivity/StayingMotivatedforFitness/Celebrating-Your-Fitness-Success_UCM_462210_Article.jsp#.WNfX8m8rIdU

APPENDIX R

JOURNAL QUESTIONS

Weekly Journal Prompts

By writing in complete sentences, please use the following prompts to provide feedback about your experience over the past week in reference to the wellness program.

Weeks 1-12

1. What were some positives that happened during the week?
2. What were some things you wished had gone differently during the week?

Questions addressing the 6 Dimensions of Wellness

Week 2

3. Physical wellness includes your ability to care for yourself by keeping your body free from disease, and the continuous up-keep of your physical fitness level. After reviewing the information on physical wellness provided in the video or informational piece how would you rate your physical wellness?
    A. Poor
    B. Fair
    C. Good
    D. Very Good
    E. Excellent

4. Describe any effect the information had on your rating of perceived physical wellness over the week.

Week 4

3. Emotional wellness involves your ability to understand and effectively deal with your feelings, by attending to your thoughts and emotions, observing your reactions, and finding answers to emotional issues. After reviewing the information on emotional wellness provided in the video or informational piece, how would you rate your emotional wellness?
    A. Poor
    B. Fair
    C. Good
    D. Very Good
    E. Excellent

4. Describe any effect the information had on your rating of perceived emotional wellness over the past week.

Week 6

3. Intellectual wellness reflects an active mind that always wants to learn new things, accept challenges, and seek new experiences throughout life. After reviewing the information on emotional wellness provided in the video or informational piece, how would you rate your intellectual wellness?
    A. Poor
    B. Fair
    C. Good
    D. Very Good
    E. Excellent

4. Describe any effect the information had on your rating of perceived intellectual wellness over the past week.

Week 8

3. Social wellness, also known as interpersonal, includes your ability to develop, grow and maintain satisfying and supportive relationships. After reviewing the information on emotional wellness provided in the video or informational piece, how would you rate your social wellness?
    a. Poor
    b. Fair
    c. Good
    d. Very Good
    e. Excellent

4. Describe any effect the information had on your rating of perceived social wellness over the past week.

Week 10

3. Spiritual wellness is defined as having principles, a set of guiding beliefs, or values that give meaning and purpose to your life. After reviewing the information on spiritual wellness provided in the video or informational piece, how would you rate your spiritual wellness?
    a. Poor
    b. Fair
    c. Good
    d. Very Good
    e. Excellent

4. Describe any effect the information had on your rating of perceived spiritual wellness over the past week.

Week 12

3. Psychological, which is similar to emotional and sometimes combined into one dimension, is defined as having a positive self-view and autonomy. After reviewing the information on psychological wellness provided in the video or informational piece, how would you rate your psychological wellness?
    a. Poor
    b. Fair
    c. Good
    d. Very Good
    e. Excellent

4. Describe any effect the information had on your rating of perceived psychological wellness over the past week.

APPENDIX S

Permission to Use Perceived Wellness Survey

Inbox x

Amy Rogers <arogers@suscc.edu> 11/18/15

to drtroy

Hi Dr. Adams,

My name is Amy Rogers and I am a doctoral student at Columbus State University in Columbus Georgia. My dissertation topic is:
INVESTIGATION OF A COMMUNITY COLLEGE EMPLOYEE WELLNESS PROGRAM AND IMPACT ON BEHAVIORAL PATTERNS OF PARTICIPANTS

I personally created the wellness program for the community college and I hope to answer the following questions:

(1) What impact does this wellness program have on employee perceived wellness?

(2) What impact does this wellness program have on behavior stages of change?

(3) What impact does motivation behaviors have on the completion of this wellness program?

I would love to use your Perceived Wellness Survey as part of my dissertation.

If you grant me permission to use your instrument, would you please respond to this email message stating that you grant permission to me to use the PWS. This will satisfy my IRB and school requirements showing that I have permission to use the instrument.

If you would like more information about my dissertation before granting me permission, I would be more than happy to provide that.

Thank you for your consideration,

Troy Adams <troy@wellsteps.com> 11/19/15

to me

Amy
Your project sounds very worthwhile. It is true that EVERYONE is a committee member (a joke) but I would look not at “behavior stage of change.” Instead I would just look at behavior - even if it is self-reported. That is just me - feel free to ignore. :-)

You have my official permission to use the PWS in your dissertation. I wish you the best.

Regards

Troy
Troy Adams, Ph.D.

Chief Operations Officer

troy@wellsteps.com | 602-369-8646

wellsteps.com | Get free wellness tools and resources here

APPENDIX T

PERCEIVED WELLNESS SURVEY RESEARCH SCALE INFORMATION AND INSTRUCTIONS

INT6 is #36. My life has often seemed void of positive mental stimulation. *
Scoring Instructions
The methods below are based on the congruence to "wellness philosophy." It is important that they be followed. The scoring method is described step by step below. At the end of the instructions you will find the SPSS file used to score the PWS. You can download a sample SPSS file to play with. I have also included a syntax file. The easiest way to score the PWS is to open both the data file and the syntax file, highlight all the text in the syntax file, and then type Control+R (PC) or Command+R (Mac).
1. Score each item from 1, "very strongly disagree" to 6, "very strongly agree." No labels are applied to respond options 2-5. Items with * are reverse scored.
2. Sum all of the subscale means. The result is the Wellness Magnitude.
3. Divide Wellness Magnitude by 6. The result is called "xbar."
4. For each subscale, compute the following: (subscale mean - xbar)2. The result is called subscale deviation.
5. Sum all of the subscale deviations, then divide the total by 5 (n-1). The result is called the variance. Compute the Wellness Balance with the following formula [(square root of the variance) + 1.25]. The 1.25 is added to the denominator to prevent a Wellness Balance of 0 from creating an invalid Wellness Composite score.
6. Compute the Wellness Composite score with the following formula: Wellness Magnitude/Wellness Balance.

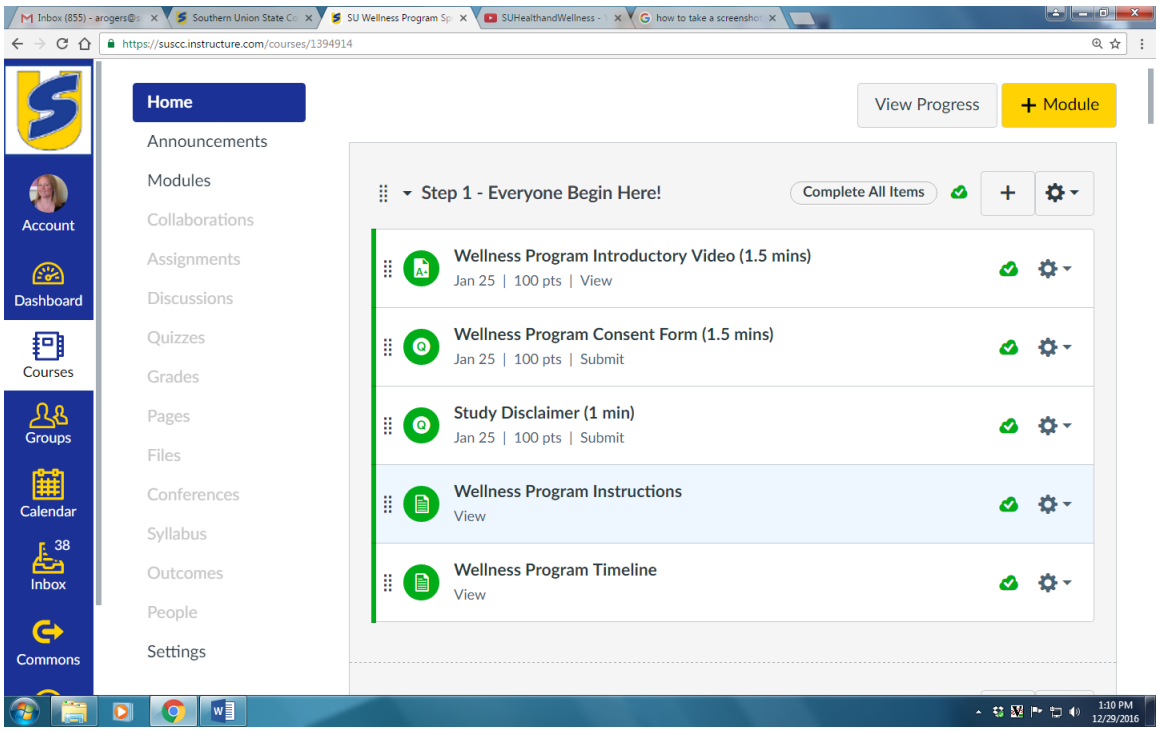
The Perceived Wellness Survey SPSS Scoring File
1. Sophisticated statisticians will recognize that there are quicker "more efficient" ways to do the statistics below. I continue to use the formula below because a) it helped my dissertation committee understand what I was doing, b) it has helped many readers comprehend how the philosophy and theory described in the paper can actually be translated into statistics, c) it is simple, and d) it works.
2. In this sample file, I use 6 columns for the ID field and then leave column 7 blank. Naturally, modifications will be needed to the column number if your data does not fit this format.
3. The variable "Wellness" is the primary variable of interest although you may also be interested in the subscales which are PSYWELL, SOCWELL, PHYSWELL, SPIRWELL, INTWELL, and EMOTWELL. However, I suggest that you check the subscale reliability before using the subscalescores.

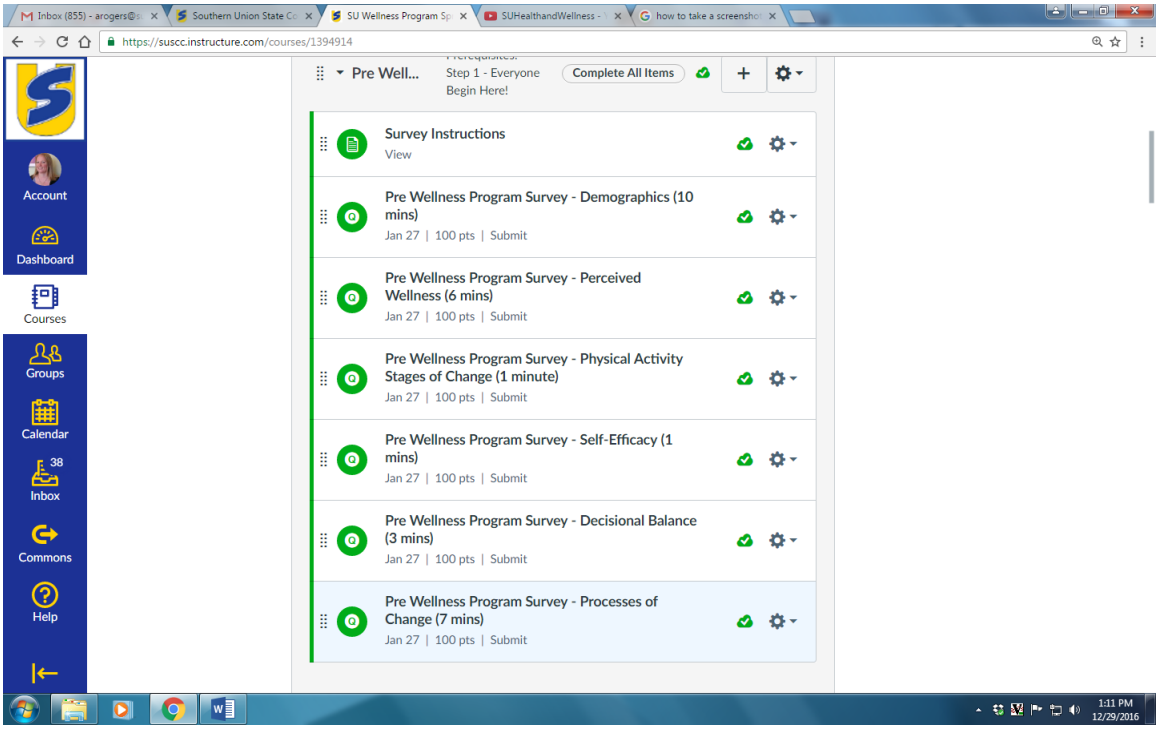
```
RECODE PSY2 PSY5 PSY6 EMOT1 EMOT3 EMOT4 SOC2 SOC5 PHYS1 PHYS6 SPIR2
SPIR3 SPIR5 INT2 INT6
(1=6) (2=5) (3=4) (4=3) (5=2) (6=1).
COMPUTE PSYWELL = PSY1+PSY2+PSY3+PSY4+PSY5+PSY6.
COMPUTE SOCWELL = SOC1+SOC2+SOC3+SOC4+SOC5+SOC6.
COMPUTE PHYSWELL = PHYS1+PHYS2+PHYS3+PHYS4+PHYS5+PHYS6.
COMPUTE SPIRWELL = SPIR1+SPIR2+SPIR3+SPIR4+SPIR5+SPIR6.
COMPUTE INTWELL = INT1+INT2+INT3+INT4+INT5+INT6.
COMPUTE EMOTWELL = EMOT1+EMOT2+EMOT3+EMOT4+EMOT5+EMOT6.
```

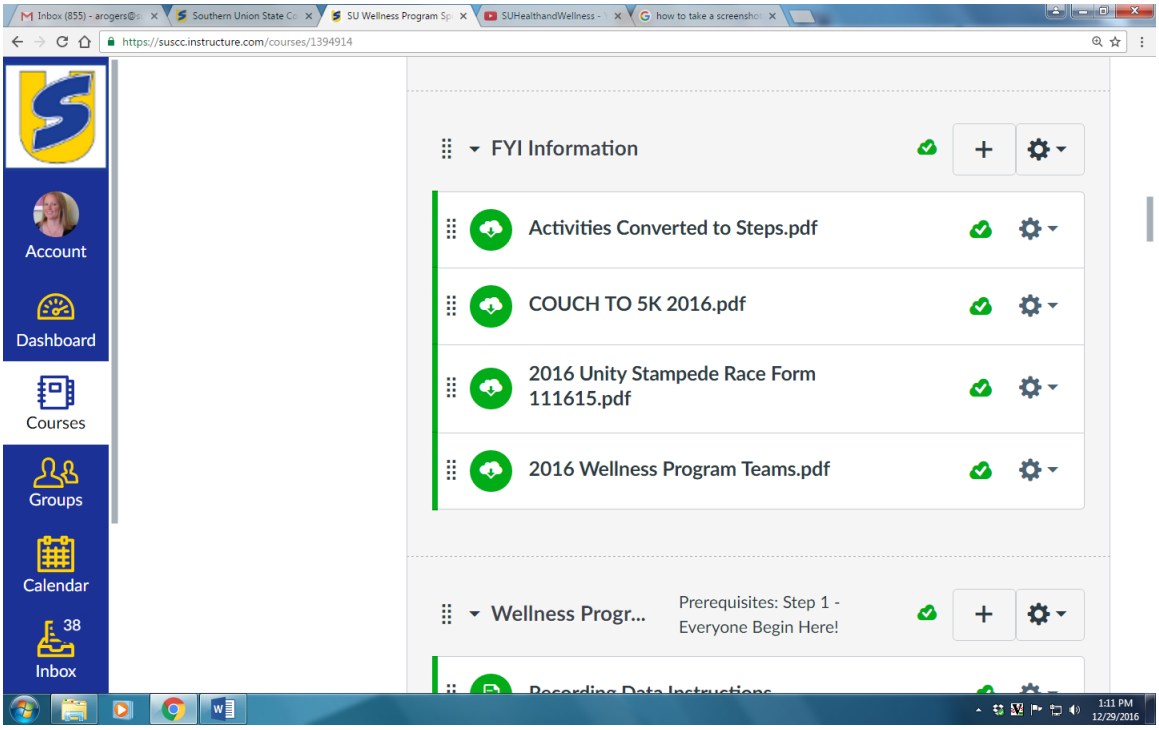
```
COMPUTE PSYMEAN = PSYWELL/6.
COMPUTE SOCMEAN = SOCWELL/6.
COMPUTE PHYSMEAN = PHYSWELL/6.
COMPUTE SPIRMEAN = SPIRWELL/6.
COMPUTE INTMEAN = INTWELL/6.
COMPUTE EMOTMEAN = EMOTWELL/6.
COMPUTE MAGNITUD =
PSYMEAN+INTMEAN+SOCMEAN+PHYSMEAN+SPIRMEAN+EMOTMEAN.
COMPUTE XBAR = MAGNITUD/6.
157
COMPUTE EMOTDEV = (EMOTMEAN-XBAR)*(EMOTMEAN-XBAR).
COMPUTE PSYDEV = (PSYMEAN-XBAR)*(PSYMEAN-XBAR).
COMPUTE SOCDEV = (SOCMEAN-XBAR)*(SOCMEAN-XBAR).
COMPUTE PHYSDEV = (PHYSMEAN-XBAR)*(PHYSMEAN-XBAR).
COMPUTE SPIRDEV = (SPIRMEAN-XBAR)*(SPIRMEAN-XBAR).
COMPUTE INTDEV = (INTMEAN-XBAR)*(INTMEAN-XBAR).
COMPUTE SUMDEV = PSYDEV+SOCDEV+PHYSDEV+SPIRDEV+INTDEV+EMOTDEV.
COMPUTE VARIANCE = SUMDEV/5.
COMPUTE BALANCE = SQRT(VARIANCE)+1.25.
COMPUTE WELLNESS = MAGNITUD/BALANCE.
```

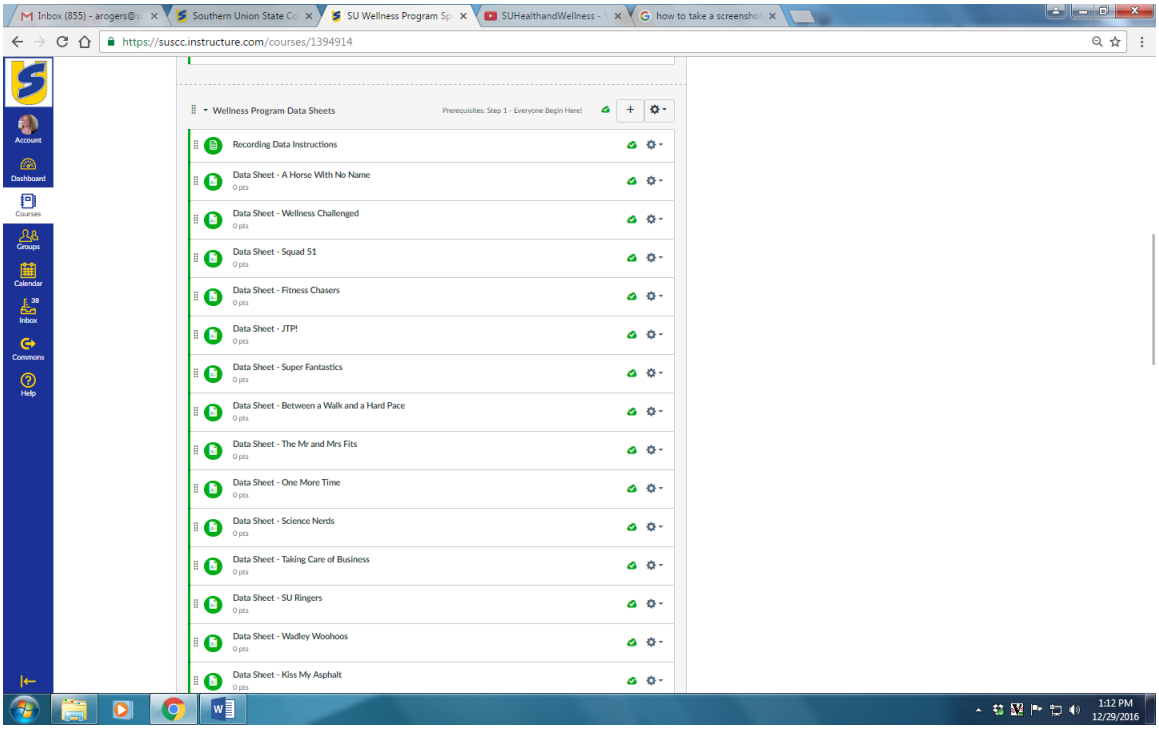
APPENDIX U

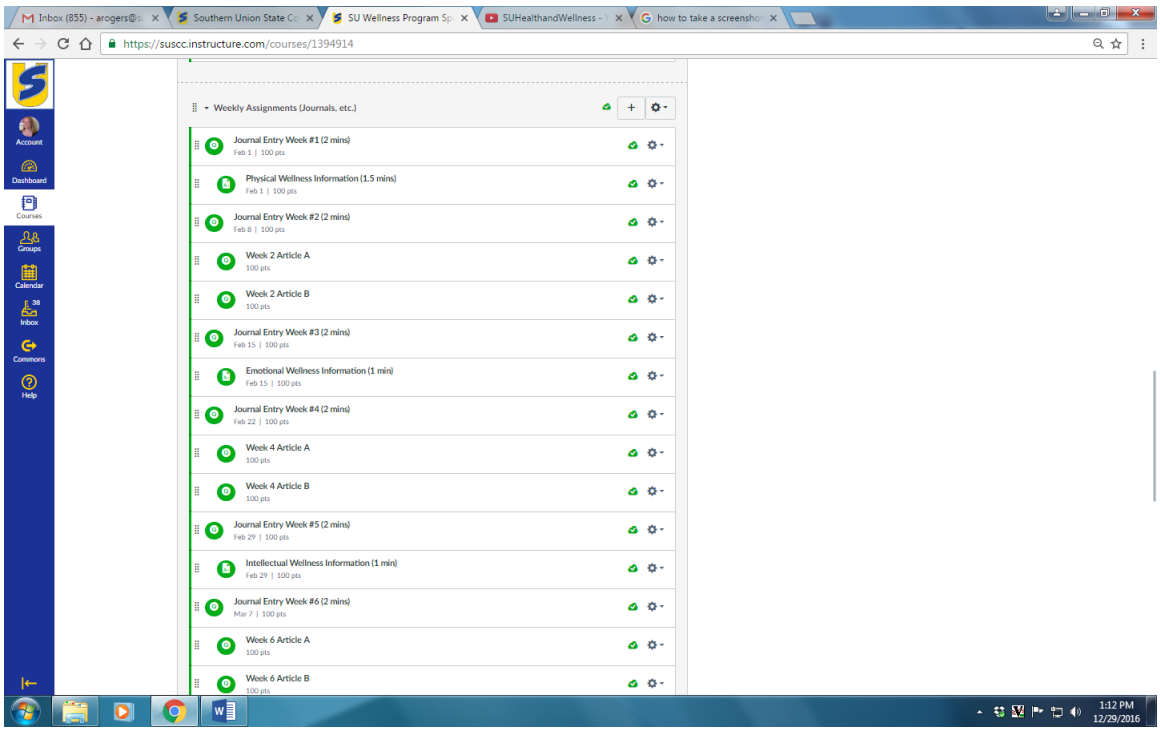
SCOUT LAYOUT

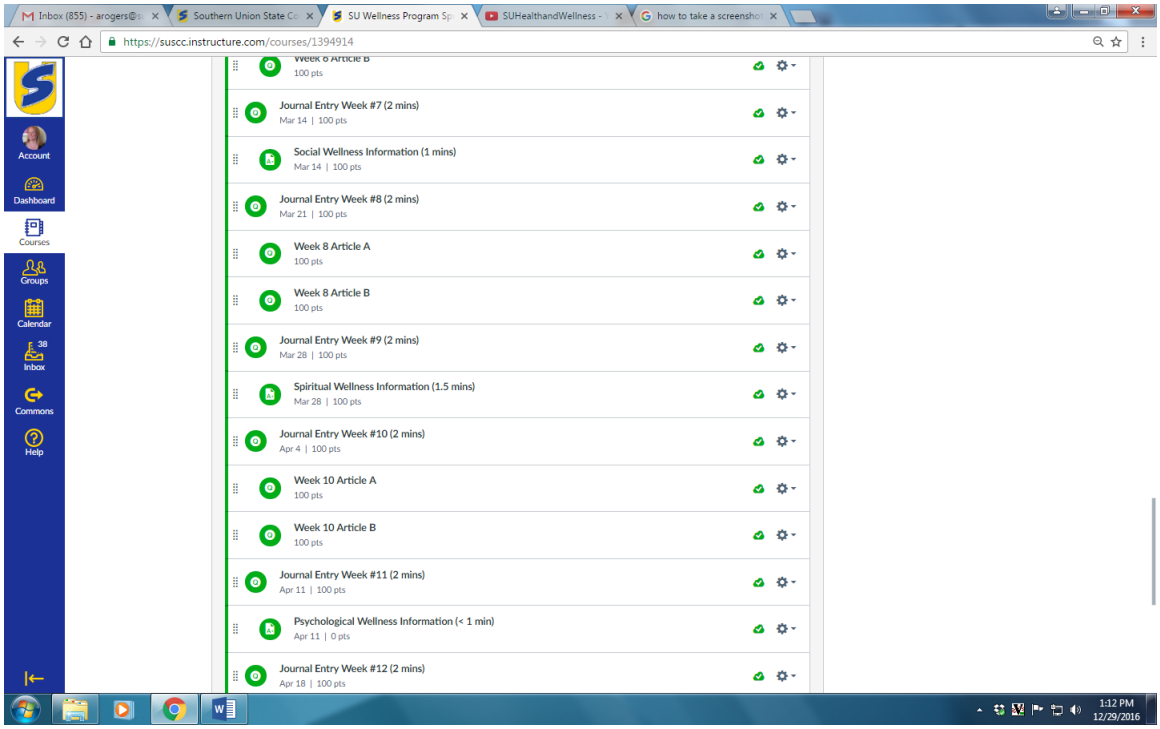


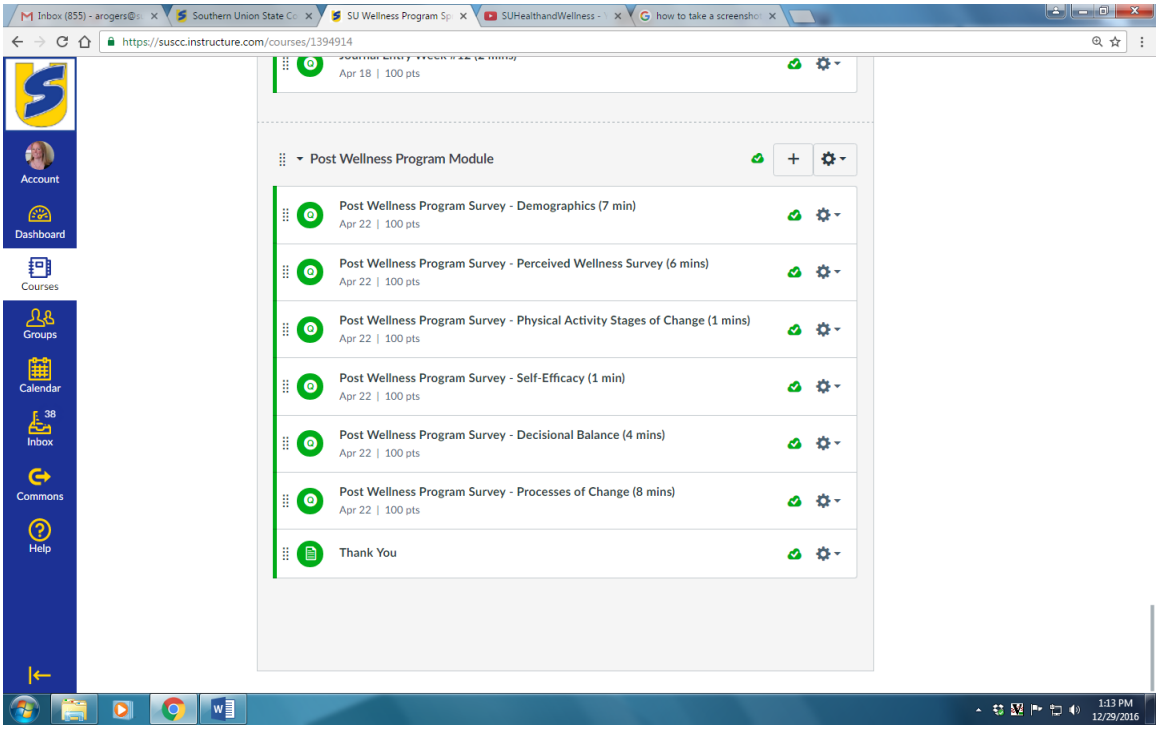












APPENDIX V

PRE PROGRAM DEMOGRAPHICS

1. What is your age?
    a. 18 - 25 years
    b. 26 - 35 years
    c. 36 - 45 years
    d. 46 - 55 years
    e. 56 - 65 years
    f. 66 years or older

2. Gender you identify as?
    a. Female
    b. Male

3. Are you faculty or staff at Southern Union State Community College?
    a. Faculty
    b. Staff
    c. I do no work at Southern Union.

4. Are you a full-time or part-time employee of Southern Union?
    a. Full-time
    b. Part-time
    c. I do not work at Southern Union.

5. What is your ethnicity?
    a. White or Caucasian
    b. Hispanic or Latino
    c. Black or African American
    d. Native American or American Indian
    e. Asian/Pacific Islander
    f. Other: Comment Space

6. What is the highest degree or level of schooling you have completed?
    a. High School or GED
    b. Trade/Technical/Vocational Training
    c. Associate Degree
    d. Bachelor's Degree
    e. Master's Degree
    f. Professional Degree
    g. Doctorate Degree

7. If you are faculty, in which area do you work?
    a. I am not faculty
    b. Academics
    c. Technical
    d. Health Sciences
    e. Other: Comment Space

8. If you are Southern Union faculty, in which department do you teach?
    a. I am not faculty.
    b. Comment Space

9. If you are Southern Union staff, in which area do you work?
    a. I am not staff.
    b. Comment Space

Physical activity or exercise includes activities such as walking briskly, jogging, bicycling, swimming and any other activity in which the exertion is at least as intense as these activities.

10. Please write a paragraph describing your experience with physical activity or exercise.
    a. Comment Space

For **physical** activity to be **regular**, it must add up to a total of 30 minutes or more per day and be done at least 5 days per week. For example, you could take one 30-minute walk or take three 10-minute walks for a daily total of 30 minutes.

11. If you do participate in regular physical activity, please explain why.
    a. Comment Space

12. If you do not participate in regular physical activity; explain why you do not.
    a. Comment Space

13. If you regularly participate in physical activity, what motivates you to keep participating?
    a. Comment Space

14. Are there any barriers that keep you from participating in regular physical activity?
    a. Comment Space

15. By using the provided chart, what is your BMI?
    a. Underweight - <19
    b. Healthy - 19-24
    c. Overweight - 25-29
    d. Obese - 30-39
    e. Extremely Obese - >39

16. How will you keep up with your steps during the Wellness Program?
    a. I will estimate my steps.
    b. Pedometer
    c. App on my smartphone
    d. Fuel Band, Fit Bit, Jaw Bone, or other similar electronic device

APPENDIX W

POWTOON VIDEO SCRIPTS

Wellness Program Overview (1:26)

https://youtu.be/1dKsUDuCiGM

Frame 1

"Hi and Welcome to our Spring 2016 Wellness Program!"

"I am Amy Rogers and I will be your Wellness Coach for the next 3 months."

(SU Health and Wellness Logo)

(Animated Amy)

Frame 2 (0:07)

Logging Your Data (Title Heading)

"Canvas is the communication tool we will use to log your data and how I will provide useful wellness information to you through the wellness program."

(Animated Amy)

Frame 3 (0:17)

"There are 6 Dimensions of Wellness we will focus on during our Wellness Program."

(Picture of 6 Dimensions) Physical , Emotional, Intellectual, Social, Spiritual, Psychological

(Animated Amy)

Frame 4 (0:27)

(Picture of 6 Dimensions)

"No one dimension is more important than another and each dimension affects the other."

"Achieving Wellness is a continuous process that involves change and growth."

Frame 5 (0:37)

(Picture of 6 Dimensions)

"If one of the dimensions is ignored or not made a priority, it can have negative effects on your life."

Frame 6 (0:47)

Behaviors That Contribute to Wellness (Title Heading)

- "Be physically active
- Choose a healthy diet
- Maintain a healthy body weight
- Manage stress effectively
- Avoid tobacco and drug use
- Limit alcohol consumption
- Protect yourself from disease and injury"

(Animated Amy)

Frame 7 (0:59)

Southern Union's Wellness Program (Title Heading)

"Our Wellness Program will focus a lot on physical wellness, but as we progress through the program we hope to improve all aspects and dimensions of wellness since they are inter-related."

Frame 8 (1:09)

3 Month Program (Title Heading)

"Let's work together for the next 3 months and create the best you. Use your teammates as accountability partners and help keep them accountable as well."

(Animated Amy)

Frame 9 (1:21)

(Picture)

"We have set the goal, made the plan, now let's get to work."

(Animated Amy)

Physical Wellness (1:30)

https://youtu.be/YHcSDWWASt0

Frame 1

(SU Health and Wellness Logo)

Frame 2 (0:03)

(Picture of 6 Dimensions)

"There are 6 Dimensions of Wellness we will focus on during the 3 month program."

Frame 3 (0:10)

(Picture of 6 Dimensions)

“No one dimension is more important than another and each dimension affects the other.”

“Achieving wellness is a continuous process that involves change and growth.”

Frame 4 (0:20)

(Picture of 6 Dimensions)

“If one of the dimensions of wellness is ignored or not made priority, it can have negative effects on your life.”

Frame 5 (0:30)

Physical Wellness (Title Heading)

“Physical wellness includes your ability to care for yourself by keeping your body free from disease, and the continuous up-keep of your physical fitness level.”

Frame 6 (0:40)

(Picture – Infograph)

“300,000 deaths occur annually in the U.S. due to inactivity and poor eating habits.”

“11 hours a day is what an American averages.”

“20 percent of all deaths of people 35 and over are attributed to a lack of physical activity.”

Frame 7 (0:54)

Tips To Get Moving (Title Heading)

- “Take a lap around your building every 2 hours
- Walk 10 minutes during your lunch break with a Wellness Team member
- Increase awareness by investing in a Fitbit, JawBone or phone app that keeps up with more than just steps”

“The more active you are, the more productive you are.”

Frame 8 (1:06)

Ways To Improve Physical Wellness (Title Heading)

- “Walk at least 10,000 steps a day
- Drink half your body weight in water a day
- Get between 7 and 8 hours of sleep each night
- Eat at least 5 combined servings of fruits and vegetables a day”

Frame 9 (1:16)

Physical Wellness Qualities and Behaviors (Title Heading)

- “Eating well

- Exercising
- Avoiding harmful habits
- Practicing safer sex
- Recognizing symptoms of diseases
- Getting regular check-ups
- Avoiding injuries"

Frame 10 (1:26)

(Picture - Believe You Can And You Will)

"Keep up the good work."

Emotional Wellness (:57)

https://www.youtube.com/watch?v=DwLKVHwJw5g

Frame 1

(SU Health and Wellness Logo)

Frame 2 (0:03)

(Picture of 6 Dimensions)

"There are 6 Dimensions of Wellness we will focus on during the 3 month program."

Frame 3 (0:10)

(Picture of 6 Dimensions)

"No one dimension is more important than another and each dimension affects the other."

"Achieving wellness is a continuous process that involves change and growth."

Frame 4 (0:13)

Emotional Wellness (*Title Heading*)

"The ability to understand and effectively deal with feelings by attending to thoughts and emotions, observing reactions and finding answers to emotional issues."

Frame 5 (0:24)

"Tips for Emotional Wellness (Title Heading)

- Keep expectations of yourself and others realistic
- Learn to accept the changes in your life
- Release the anger and resentments
- Surround yourself with positive thoughts and positive people
- Take responsibility for yourself

- Learn to laugh, especially at yourself
- If you are experiencing emotional difficulty, talk to someone"

Frame 6 (:51)

Picture – A heart sucker

- But first love yourself

Intellectual Wellness (:57)

https://www.youtube.com/watch?v=37EqdFXhcWw

Frame 1

(SU Health and Wellness Logo)

Frame 2 (0:03)

(Picture of 6 Dimensions)

Frame 3 (0:10)

(Picture of 6 Dimensions)

"No one dimension is more important than another and to achieve wellness, we must have balance between all six dimensions."

Frame 4 (:24)

(Picture of stacked books)

Intellectual Wellness (Title Heading)

"Intellectual wellness reflects an active mind that continues to learn new things, accepts challenges and seeks new experiences throughout life."

Frame 5 (:35)

(Picture of world with iconic statues and buildings)

Ways To Improve Intellectual Wellness (Title Heading)

- Participating in continuing education courses
- Traveling
- Learning new hobbies
- Participating in challenging tasks

Frame 6 (:49)

(Picture of inspirational saying, "Keep yourself educating and never stop learning"

Social Wellness (:52)

https://www.youtube.com/watch?v=23vLLIwmOMc

Frame 1

(SU Health and Wellness Logo)

Frame 2 (0:03)

(Picture of 6 Dimensions)

"Remember there are six dimensions of wellness: physical, emotional, intellectual, social, spiritual and psychological."

Frame 3 (:14)

(Picture of individuals holding hands in a circle)

Social Wellness (Title Heading)

"Social wellness, also known as interpersonal wellness, includes your ability to develop, grow and maintain satisfying and supportive relationships."

Frame 4 (:24)

(Picture of words used to describe healthy relationships)

"Satisfying and supportive relationships are essential to physical and emotional wellness."

Frame 5 (:32)

Tips for Improving Social Wellness (Title Heading)

> "Joining like-minded groups such as a church, book-club, exercise club or facility, or other community organizations."

Frame 6 (:43)

"A healthy relationship doesn't drag you down, it inspires you to be better."

Spiritual Wellness (1:18)

https://www.youtube.com/watch?v=jI3yjKl-Tbk

Frame 1

(SU Health and Wellness Logo)

Frame 2 (0:03)

(Picture of 6 Dimensions)

Frame 3 (:14)

(Picture of individual sitting on mountain meditating or praying)

Spiritual Wellness (Title Heading)

"Spiritual wellness means having principles, a set of guiding beliefs or values that give meaning and purpose to your life."

Frame 4 (:24)

(Picture of individual on knees meditating or praying)

"Spirituality and religion are not synonymous, but can overlap."

Frame 5 (:30)

(Picture of individuals holding hands up to the sky in a line)

"A way to improve spiritual wellness would be to join a group that shares the same beliefs and values as you."

Frame 6: (:40)

(Picture of individual holding hands up to the sky)

"The path to spiritual wellness may involve mediation, prayer, affirmations or specific spiritual practices that support your connection to a higher power or belief system. Yoga and meditation can also help you develop spiritual wellness."

Frame 7 (:47)

(Picture of a tree with the sun behind it)

"Having compassion, the capacity for love and forgiveness, joy and fulfillment help you enjoy your spiritual health. Your religious faith, values and beliefs, principles and morals define your spirituality."

Frame 8 (1:09)

(Picture of a sunset over water that says "Spirituality")

Psychological Wellness (:47)

https://www.youtube.com/watch?v=Td-YagF-oUA

Frame 1

(SU Health and Wellness Logo)

Frame 2 (0:03)

(Picture of 6 Dimensions)

"Remember there are six dimensions of wellness: physical, emotional, intellectual, social, spiritual and psychological."

Frame 3 (:14)

(Picture of a cat looking into a mirror seeing a lion – "It's time for some positive self-talk")

Psychological Wellness (Title Heading)

"Psychological wellness, which is similar to emotional wellness and sometimes combined into one dimension, is defined as having a positive self-view and autonomy."

Frame 4 (:24)

(Picture that says "I love me")

"Ways to improve psychological wellness include surrounding yourself by individuals that build you up by focusing on your good attributes and having a job that gives you self-worth."

Frame 5 (:38)

"Imagine if we obsessed about the things that we love about ourselves."

APPENDIX X

POST PROGRAM DEMOGRAPHICS

Physical activity or exercise includes activities such as walking briskly, jogging, bicycling, swimming and any other activity in which the exertion is at least as intense as these activities.

1. Please write a paragraph describing your experience with physical activity or exercise.
    a. Comment Space

For **physical** activity to be **regular**, it must add up to a total of 30 minutes or more per day and be done at least 5 days per week. For example, you could take one 30-minute walk or take three 10-minute walks for a daily total of 30 minutes.

2. If you do participate in regular physical activity, please explain why.
    a. Comment Space

3. If you do not participate in regular physical activity; explain why you do not.
    a. Comment Space

4. If you regularly participate in physical activity, what motivates you to keep participating?
    a. Comment Space

5. Are there any barriers that keep you from participating in regular physical activity?
    a. Comment Space

6. By using the provided chart, what is your BMI?
    a. Underweight - <19
    b. Healthy - 19-24
    c. Overweight - 25-29
    d. Obese - 30-39
    e. Extremely Obese - >39

7. How did you keep up with your steps during the Wellness Program?
    a. I am not participating in the program.
    b. I will estimate my steps.
    c. Pedometer
    d. App on my smartphone
    e. Fuel Band, Fit Bit, Jaw Bone, or other similar electronic device

8. Please explain whether or not you felt like you were successful in this Wellness Program and why.

9. Are there any comments you would like to make about your team captain?
    a. Comment Space

10. Are there any comments you would like to make about the Wellness Program or about your experiences in the wellness program?
    a. Comment Space

APPENDIX Y

INTERVIEW QUESTIONS

Post Program Semi-Structured Interview Questions

1. Describe why you decided to participate in the wellness program?
2. Describe your experience with the wellness program.
3. Linnan et al., (2010) and Haines et al., (2007) have reported many barriers that can make it difficult for participants to continue participating in physical activity and exercise. Describe any barriers that arose during the wellness program that prevented you from doing your best.
4. Describe any things or instances during the wellness program that motivated you to continue doing your best.
5. Can you give me specific examples of aspects of the wellness program you enjoyed and why you did enjoy them?
6. Can you give me specific examples of aspects of the wellness program that you did not enjoy and why you did not enjoy them?
7. Describe something that needed to be added to the program that would have helped your performance during the program?
8. Describe any aspect of the program you felt did not have an impact on your performance.
9. What do you believe to be responsible for your performance in the wellness program and why?
10. There are six dimensions of wellness: physical, emotional, intellectual, social, spiritual and psychological. Describe how the wellness program affected those dimensions of wellness.
11. In regards to physical activity or altering health behaviors, Fahey, Insel, & Roth (2013), suggested that self-efficacy refers to the individual's perceived ability to successfully deal with high stress situations that might discourage them from continuing to participate in the healthy behavior. Describe your experience with self-efficacy during the program.
12. Researchers (Higgins et al, 2014) have reported that wellness programs delivered through a mediated source can be successful. Describe your experience with how the program and wellness information were delivered.
13. It is reported by researchers (Marcus and Lewis, 2003) that social support is a facilitator for physical activity and exercise. Describe your experience of being on a team during the program.
14. Is there anything else you would like to say about your participation or experiences in the wellness program?

APPENDIX Z

FOCUS GROUP QUESTIONS

Post Program Semi-Structured Questions

1. Please describe the experience you had during the 12-week wellness program.

2. During the wellness program, was there a time you noticed that people were more or less motivated or enthusiastic about the program?

3. During the 12-week wellness program were there any changes you noticed on campus or with co-workers that could have been attributed to the program?

4. Researchers Marcus and Lewis (2003) reported that social support is a facilitator for physical activity and exercise. Describe the influence your teammates had on your performance in the wellness program.

5. Linnan et al., (2010) and Haines et al., (2007) have reported many barriers that make it difficult for us to continue participating in physical activity and exercise. During the wellness program, what were some barriers you faced and what motivated you to continue participating and keeping up with your data?

6. Describe your experience of how the program and wellness information was delivered each week and how you were asked to record your data?

7. In regards to physical activity or altering health behaviors, Fahey, Insel, & Roth (2013) suggested that self-efficacy refers to the individual's perceived ability to successfully deal with high stress situations that might discourage them from continuing to participate in the healthy behavior. When reading through many of the journal entries, many participants said that stressful situations such as work and family prevented them from doing their best in the program. Without naming anyone specifically describe what you saw from teammates and co-workers during the program in reference to self-efficacy.

8. Now that the wellness program has come to an end and you are not asked to consciously think about your health habits and record them, what do you think will happen in reference to the good health habits we brought attention to?

9. During the program we learned about the six dimensions of wellness: physical, emotional, intellectual, social, spiritual and psychological. Much of the program was

specifically focused on physical wellness. Describe how the wellness program affected those dimensions of wellness.

10. Is there anything else anyone would like to say about your participation or experiences in the wellness program? Suppose you had one minute to talk to the news media about the wellness program, the topic of today's discussion, what would you say? OR "Of all the things that we discussed today, what to you is the most important?"

Summary Question

After a brief oral summary, ask the question: "Is this an adequate summary?"

Final Question

"Have we missed anything?"

APPENDIX AA

PROJECT CONTINUATION APPROVAL PROTOCOL

Project Continuation Approval Protocol 17-062

Institutional Review Board
Columbus State University

Date: 1/18/17
Protocol Number: 17-062 (pc 16-048)
Protocol Title: Effects of a Collegiate Employee Wellness Program on Participant Perceived Wellness and the Transtheoretical Model of Change: Voices of Participants
Original Approval Date: 1/22/16
Most Recent Approval Date: 1/17/17
Principal Investigator: Amy Rogers
Co-Principal Investigator: Ellen Martin

Dear Amy Rogers:

Your request to continue the research project (noted above) is approved for one (1) year from the date of this letter. Please note any changes to the protocol must be submitted in writing to the IRB before implementing the change(s). Any adverse events, unexpected problems, and/or incidents that involve risks to participants and/or others must be reported to the Institutional Review Board at irb@columbusstate.edu or (706) 507-8634.

You must submit a Final Report Form to the IRB once the project is completed or within 12 months from the date of this letter. If the study extends beyond 1 year, you must submit a Project Continuation Form to the IRB. Both forms are located on the CSU IRB website (https://aa.columbusstate.edu/research/irb/). The completed form should be submitted to irb@columbusstate.edu. Please note that either the Principal Investigator or Co-Principal Investigator can complete and submit this form to the IRB. Failure to submit this required form could delay the approval process for future IRB applications.

If you have further questions, please feel free to contact the IRB.

Sincerely,
Amber Dees, IRB Coordinator
Institutional Review Board
Columbus State University