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Hypertension Health Behavior Change and Older Adults: the effect of an Appreciative Education Approach

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HYPERTENSION HEALTH BEHAVIOR CHANGE AND OLDER ADULTS: THE EFFECT OF AN APPRECIATIVE EDUCATION APPROACH

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Thanks to all the Lifestyle University participants, without you, this research would not have been possible.

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ABSTRACT

Making lifestyle changes has been found to be effective in controlling hypertension. Positive psychology may provide alternatives to existing health behavior change approaches. Appreciative Education (AE), a positive psychology approach, was applied to an existing hypertension control intervention, Lifestyle University (LU), and compared to the Social Cognitive Theory (SCT) approach, in a segment of the existing intervention. This study used quasi-experimental, mixed methods pre/post-test, repeated measures design. Two-groups of community-dwelling adults, aged 50+, control SCT (n= 60), and experimental AE (n=33), were compared using the LU intervention. Seven dependent variables were measured at pre-test, post-test 1 and post-test 2. Repeated measures ANOVA demonstrated the AE intervention to be more effective than the SCT intervention in increasing self-selected (p=0.0002) and fast gait (p=0.002) speed. Pearson correlation revealed an inverse relationship between systolic blood pressure and International Physical Activity Questionnaire (IPAQ) scores (r_s = -0.40, p = 0.008). The AE group was not more effective than the SCT group in reducing mean systolic and diastolic blood pressure, BMI, physical activity (IPAQ), and fruit and vegetable consumption (EATS). In the grounded theory qualitative analysis of interview data, both groups shared four health behavior themes: accountability, consumption changes, learning aids and activities, and other behavior changes. Two of the three perception themes, peer influence (SCT) and health relationships (AE), reflected the differences between the two approaches while the enjoyment theme emerged from both groups.

Results of this study suggest future interventions designed from the ground up, using the AE approach, may be an effective health behavior change alternative.

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List of Abbreviations

AA ..... Appreciative Advising

ACI ..... Appreciative College Instruction

AE ..... Appreciative Education

AI ..... Appreciative Inquiry

BP ..... Blood Pressure

CHA ..... Community Health Advisor

CHD ..... Coronary Heart Disease

LU ..... Lifestyle University

PA ..... Physical Activity

SCT ..... Social Cognitive Theory

CHAPTER 1

INTRODUCTION

Hypertension Health Behavior Change and Older Adults: The Effect of an Appreciative Education Approach

The most rapidly growing sector of the United States population is older adults, persons 65 and older (Hetsel & Smith, 2001; Vincent & Velkoff, 2010). Fueling the swell in this segment of the population is increased life expectancy that is now estimated at 78.7 years (Murphy, Xu, & Kochanek, 2012) in addition to about 10,000 baby boomers who are entering this group daily, from January 1, 2011 until 2030 (Cohn & Taylor, 2010; Passel & Cohn, 2008; Vincent & Velkoff, 2010) .

Now that Americans live longer, mortality causes have changed. Recent public health campaigns have been effective in reducing the number of deaths due to tobacco use since it is no longer the leading cause of death (A.H. Mokdad, Marks, Stroup, & Gerberding, 2004; A. H. Mokdad, Marks, Stroup, & Gerberding, 2005; Murphy et al., 2012; Statistics, 2011). Currently the leading cause of death is coronary heart disease (CHD) representing 25% of all U.S. deaths and 81% of deaths for those aged 65 and older (Murphy et al., 2012; Statistics, 2011). One of today's most common chronic diseases, hypertension, is associated with increased risk of stroke, various forms of CHD, type 2 diabetes and renal disease (Dagogo-Jack, Egbuonu, & Edeoga, 2010; I. Hajjar, Kotchen, & Kotchen, 2006) which can all be controlled, prevented, and treated with

lifestyle changes which include moderate daily exercise (Opdenacker, Boen, Coorevits, & Delecluse, 2008; Pescatello et al., 2004; Wallace, 2003), increased fruit and vegetable consumption (J. A. Blumenthal et al., 2010; N. M. Karanja et al., 1999; Sacks et al., 2001) reduction in alcohol and sodium consumption (Vollmer et al., 2001) and stress management (Dickinson et al., 2008; Dickinson et al., 2006; Gupta & Guptha, 2010). This makes it critical that we examine interventions designed to control hypertension in our aging population. The purpose of this study is to examine the effect of incorporating an affirmative health behavior change model, Appreciative Education (AE), in an established hypertension education intervention, Lifestyle University (LU), on changes in: 1) systolic blood pressure (BP), 2) diastolic BP, 3) BMI, 4) fruit and vegetable consumption, 5) physical activity participation, 6) self-selected and 7) fast gait speed, in community-dwelling older adults.

1.1 Physical Activity And Our Aging Population

The U.S. Administration on Aging Profile of Older Americans (2010, 2011) reports a 3% increase in leisure-time physical activity for persons 65-74 from 32% in 2010 to 2011 and a 6% increase for persons 75+ from 18% to 24%. Even with this increase, about two-thirds of older adults are considered sedentary. The connection between physical activity (PA) and health has been established with PA being identified as a significant factor contributing to decreased risk of morbidity and disability from chronic disease in the older adult population (Batty & Lee, 2004; Chodzko-Zajko et al., 2009). Including regular physical activity in the lives of those currently experiencing chronic conditions has been effective in decreasing the effects of these diseases (Liu-Ambrose et al., 2005; Whelton, Chin, Xin, & He, 2002).

The 2008 Physical Activity Guidelines for Americans (Services., 2008) and the 2009 ACSM Position Stand (Chodzko-Zajko et al., 2009) both recommend that older adults avoid a sedentary lifestyle and engage in aerobic and muscle-strengthening activities. The physical activity guideline for older adults recommends at least 150 minutes of moderate-intensity aerobic activity (brisk walking) each week or 75 minutes of vigorous-intensity aerobic activity (running or jogging) in addition to muscle-strengthening activities on 2 or more days a week, including all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms). These are the minimum participation recommendations essential for healthy aging. The ACSM developed guidelines for best practices in older adult physical activity programs (Chodzko-Zajko et al., 2009). These include: at least 30 minutes of moderate intensity physical activity in accumulated 10-minute bouts on 5-7 days each week; strength and flexibility training on 2-3 days each week; and balance exercises on 1-7 days each week (Cress et al., 2005).

The purpose of this study was to compare a novel behavior change approach to an established approach. Appreciative Education (AE), the novel positive psychology approach, was used to modify the small group discussion segment of an established intervention, designed to control hypertension in older adults, Lifestyle University (LU), which was based on the Social Cognitive Theory (SCT).

This study sought to answer the following research questions: 1) Is the Appreciative Education approach more effective than the Social Cognitive Theory approach in promoting health behavior change when applied to an educational intervention in older adults to control hypertension? 2) How do participant perspectives

and health behaviors after the intervention differ between the Appreciative Education approach and Social Cognitive Theory approach?

CHAPTER 2

REVIEW OF LITERATURE

This chapter will first review the history of community-based interventions to control hypertension in older adults. The next focus will be theories of behavior change with an emphasis on the AE and SCT approaches. Lastly, the lifestyle change components in the established LU intervention will be presented.

2.1 COMMUNITY-BASED INTERVENTIONS

The present study will be conducted within an established community based program. In this section existing research on community-based interventions to control hypertension and cardiovascular disease with older adults will be discussed. The first community-based interventions for CVD date back to the 1970's with the Western Jerusalem's CHAD Program, North Karelia Project in Finland, Stanford Three Community Project in Northern California and rural Maine's Franklin Cardiovascular Health Program (Parker & Assaf, 2005). These community-based interventions were delivered to various community populations. The Franklin Cardiovascular Program was delivered to a county (Record et al., 2000), the North Karelia project to a city (Puska, 1992), and the CHAD program to four housing projects in west Jerusalem (Abramson et al., 1981). These first generation CVD community-based interventions share common objectives; 1) development and testing of educational initiatives aimed at reducing cardiovascular mortality and morbidity within a community, and 2) estimation of the

amount of disease change associated with the health behavior and risk factor changes attributable to the intervention (Blackburn, 1983).

The specific educational activities chosen for implementation in each of these projects varied. Family physicians and nurses within a community-oriented primary care setting developed the CHAD program that was based on face-to-face counseling with residents of several housing projects (Abramson et al., 1981; Parker & Assaf, 2005). The North Karelia project was a multi-level intervention, developed in response to public concern, aimed at changing the dietary and smoking habits of a population through policy, media-based education and community change (Papadakis & Moroz, 2008; Parker & Assaf, 2005; Puska, 1992, 2010). Community and health professionals were targeted in the educational activities during the Franklin Cardiovascular program. This intervention included screenings with referrals, physician follow-up mailings and community activities (Record et al., 2000). Comprehensive mass media campaigns and face-to-face counseling to a high-risk subset were the educational activities used in the Stanford Three Community Project (Farquhar et al., 1977).

In this first generation of community interventions the objectives were to reduce CVD risk factors, mortality and morbidity in a community by using a variety of interventions to modify individual health behaviors instead of targeting specific individuals with a high CVD risk within health care practices (Parker & Assaf, 2005). Multiple theoretical frameworks were employed focusing on prevention using a variety of strategies that have included education of individual community members, mass communication, social networks, opinion leaders and community leaders (Merzel & D'Afflitti, 2003; Parker & Assaf, 2005). These studies were successful in significantly

reducing coronary heart disease (Parker & Assaf, 2005; Puska, 1992, 2010), decreased risk of CVD (Farquhar et al., 1977; Parker & Assaf, 2005), dose-dependent decrease in CVD mortality (Parker & Assaf, 2005; Record et al., 2000), and significant reductions in hypertension prevalence, smoking reduction in men, and obesity reduction (Abramson et al., 1981; Parker & Assaf, 2005).

The well-funded second-generation programs, initiated in the early 1980's, were in response to the successful results from the first-generation research (Parker & Assaf, 2005) and include the Minnesota Heart Health Program (Luepker et al., 1996), Pawtucket Heart Health Program (Carleton, Lasater, Assaf, Feldman, & McKinlay, 1995) and the Stanford Five Cities Project (Farquhar et al., 1990). These studies focused on educational programs aimed at CVD risk reduction coupled with a thorough evaluation process (Papadakis & Moroz, 2008). Even though these studies were generously funded, well-designed and evaluated, they produced positive and mixed results when compared with the control communities finding increases in risk factors and knowledge in the intervention communities while lacking significant mortality and morbidity improvements (Parker & Assaf, 2005) since they anticipated a 20% reduction in mortality rates (Papadakis & Moroz, 2008).

Studies that adapted prior CVD prevention programs from the late 1980's and early 1990's comprise third-generation programs, which were designed to reproduce prior programs using less resources, more representative of actual public health resources, while targeting high-risk sub-populations (Papadakis & Moroz, 2008). The South Carolina Cardiovascular Disease Prevention Project (Heath, Fuchs, Croft, Temple, & Wheeler, 1995), Coeur en Santé Saint Henri Project (O'Loughlin, Paradis, Gray-

Donald, & Renaud, 1999) are two of the major third-generation studies (Parker & Assaf, 2005). The South Carolina project focused on changing blood cholesterol awareness and was the first research to measure these changes in an African-American sub-population. They found that community-based interventions were generally effective in increasing cholesterol awareness, with higher rates of success among the white population even though there was no intervention effect for risk awareness and treatment (Heath et al., 1995). The Coeur en Santé Saint Henri Project is one of the few studies among the third-generation interventions that specifically targeted low-income, inner city residents (O'Loughlin et al., 1999). Even though more than 40 interventions were adapted and implemented for this community during this study they found no significant changes in smoking, junk food consumption, physical activity, BMI, cholesterol or blood pressure (BP) control (O'Loughlin et al., 1999).

The six published fourth-generation CVD projects from 2000 through 2008 shifted away from community-based large-scale studies toward specific sub-populations; rural, elderly, low socioeconomic status (SES) or minorities (Papadakis & Moroz, 2008). Of these government-funded programs, two are U.S. projects with the remaining 4 being international studies. The WISEWOMAN program began in 2000 and operates today as a CDC-funded project in 20 states, serving uninsured and low-income women with health screenings and lifestyle interventions, with offerings that vary by program. This program has been successful in lowering BP, cholesterol and CVD risk among the women served through this project (CDC, 2011b; Khavjou, Finkelstein, & Will, 2007; Papadakis & Moroz, 2008). The Charlotte, NC based REACH program targeted an area with an African American population of 95% with an ecological approach to modifying this

community's social system (DeBate, Plescia, Joyner, & Spann, 2004). This project was successful in changing the three targeted health behaviors of decreasing smoking, increasing PA and fruit and vegetable consumption, which were improved through policy and community environmental change strategies planned by a community coalition and delivered by lay health advisors (Plescia, Herrick, & Chavis, 2008)

2.2 Theories of Health Behavior Change

Research has established that there is a need for effective, health behavior change interventions in order to help individuals make long-term lifestyle changes (Bélanger-Gravel, Godin, Vezina-Im, Amireault, & Poirier, 2011; I. Hajjar et al., 2006). Many health behavior change interventions use social cognitive theory (Bandura, 1998) or other models (Bélanger-Gravel et al., 2011) where the emphasis is on solving a problem or changing a specific behavior (Merzel & D'Afflitti, 2003; Moore & Charvat, 2007; Moore et al., 2006). Moore (Moore & Charvat, 2007) proposes that new health behavior change approaches are needed. The theoretical models currently in use result in marginal success in research intended for health behavior change adoption and long-term maintenance (Conn, Valentine, & Cooper, 2002; Taylor et al., 2004).

Appreciative Education Approach A new approach to health behavior change, based on Appreciative Inquiry (AI), an organizational change model (Cooperrider, 1986; Cooperrider & Whitney, 2005), and other affirmative applications of this model, Appreciative Advising (AA) (Bloom, Hutson, & He, 2008b), Appreciative College Instruction (ACI) (Bloom, Hutson, He, & Robinson, 2011) and Appreciative Education (AE) (Bloom, Hutson, He, & Konkle, 2013) were proposed as the foundation

of this alternative model. This affirmative method focuses on incorporating a positive and creative approach to interventions that include health behavior change activities.

The AE approach applied to this intervention is based on AI the organizational change theory developed at Case Western Reserve University by David Cooperrider in his 1986 health care industry action-research doctoral dissertation (Cooperrider, 1986). The foundation of AI is based on the idea that organizations are more effective in instituting change when they build on their strengths rather than repairing their weaknesses. When stakeholders within an organization share individual and organizational success stories, the strengths of the organization become apparent. This success structure becomes part of the roadmap of positive change. AI is defined as "the cooperative, co-evolutionary search for the best in people, their organizations, and the world around them. It involves systematic discovery of what gives life to an organization or a community when it is most effective and most capable…" (Cooperrider & Whitney, 2005) This positive change process involves a 4-D cycle 1) identification of strengths and best practices (discovery), 2) articulation of a clear vision in response to the discovered strengths (dream), 3) creation of ideal organization based on the vision grounded in organizational strengths (design), and 4) system strengthening and momentum building to sustain change (destiny). When this approach was applied to college advising and instruction in Appreciative Advising (AA) (Bloom, Hutson, & He, 2008a) and Appreciative College Instruction (ACI) (Bloom et al., 2011), two changes expanded and clarified this process (Figure 2.1). The cycle begins with 1) the creation of a safe inviting environment (disarm) and ends with 6) a challenge to keep on growing and improving (don't settle). This AE approach is a positive, intentional method of individual and

organizational change (Bloom et al., 2008b; Bloom et al., 2011; Cooperrider, 1986; Cooperrider & Whitney, 2005), grounded in positive psychology (Seligman & Csikszentmihalyi, 2000), social constructivism (Dewey, 1916) and AI (Cooperrider, 1986; Cooperrider & Whitney, 2005).

When the focus of the AE approach (Bloom, Hutson, He, & Konkle, 2013) is personal change and growth, individuals are empowered to be the best that they can be. The general principles used in this process are summarized in the six phases of the AE cycle: 1) disarm, 2) discover, 3) dream, 4) design, 5) deliver, and 6) don't settle (Figure 2.1). Central to this approach is the appreciative mindset, where individuals are encouraged to see the best in themselves and other people (disarm). Individuals are invited to reflect on past achievements, successes, dreams and goals (discovery), then guided to connect them with new ideas, dreams and goals (dream). The best practices from the past are connected with ideas and information from the present leading to the planning of new goals and dreams (design) for the future. The implementation of this plan leads to achievement of the new planned behavior, goal or dream (deliver). Once this is accomplished, its time to discover a new dream or goal (don't settle) as the process builds on past success and begins again.

SOCIAL COGNITIVE THEORY In Social Cognitive Theory, Bandura (1986) proposes that human behavior change is affected by a combination of forces both outside and inside the individual. In this model, 1) personal factors, 2) behavior and 3) the environment interact to influence individual behavior in a process of reciprocal determinism (Figure 2.2). In reciprocal determinism each of these three factors continually interact with each other and affect behavior. Several constructs are the

foundation of learning and behavior change in this model: 1) self-efficacy, 2) outcome expectations, 3) barriers, and 4) benefits. An individual's perspective of their ability to perform a behavior is self-efficacy. Outcome expectations are an estimation of the probable consequences of a particular behavior. Barriers are things that prevent an individual from making a desired change while benefits are the positive consequences of the change.

According to Bandura (1977, 1986, 1997) self-efficacy stems from four sources: 1) mastery experiences, 2) vicarious experience, 3) social persuasion, and 4) physiological and affective states. Mastery experiences emphasize perseverance of effort as an important behavioral ingredient necessary for an individual to overcome obstacles (Bandura, 1998). Through the sharing of vicarious experiences, individuals who witness successful social models, can increase their self-efficacy by learning the strategies and skills needed to navigate the demands of the environment (Bandura, 1998). In another social source of self-efficacy, social persuasion, Bandura (1998) suggests that individuals involved in purposefully structured activities can be verbally persuaded that they have the internal resources necessary to overcome personal challenges and environmental barriers. The final social method of increasing self-efficacy, modification of physiological and affective states, occurs when an individual's stressful reaction to a occurrence is reduced by another person's successful modeling of coping strategies to reduce or eliminate the stressful reaction (Bandura, 1998).

Three of the four sources of self-efficacy development: 1) vicarious experiences from social modeling, 2) social persuasion, and 3) modification of physiological and affective states are dependent on external, social influences. The resulting development

of self-efficacy is largely dependent upon social influences acting on the individual from outside.

When these two approaches are compared (Figure 2.3), the predominant behavior change influence is external for the SCT approach whereas for the AE approach the source is internal and personal. The SCT approaches behavior change from the perspective of changing problem behavior using modeling from another person already successful in making these changes whereas the focus of the AE approach is to build on personal past successes and what the individual is already doing well to assist in enhancing behavior. The SCT approach focuses on identification of barriers, obstacles and challenges that need to be overcome in order to change a behavior. The AE approach focuses on using the passions, strengths and tools that an individual has cultivated and successfully used in the past to assist in establishing a new behavior. Adoption of strategies modeled by others is central to the SCT approach while an essential component of the AE approach is the creation of individualized plans of action that systematically lead to a dream or new goal (Figure 2.1). With SCT the individual's focus is on using behavior change strategies that worked for someone else while AE focuses on self-reflection and an integration of personal dreams and goals with past success to lead to new behavior. In the SCT approach external social modeling shape behavior change whereas in AE personal dreams from within the individual shape future behavior.

Since throughout the world, the major cause of CVD is hypertension (I. Hajjar et al., 2006) and older adults have the lowest levels of BP control (I.M Hajjar, Frost, & Blackledge, 2005) designing and delivering effective, theory-based interventions

(Bélanger-Gravel et al., 2011) for prevention and control of hypertension to this population is warranted (Egan, Zhao, & Axon, 2010).

2.3 LIFESTYLE UNIVERSITY

The established intervention of focus in this study, Lifestyle University (LU), is the education intervention component of a multidisciplinary management program designed to improve hypertension control and healthy behaviors in older adults (I.M. Hajjar et al., 2007). This program is based on the Frost-Hajjar Model of hypertension control (I.M Hajjar et al., 2005). This model integrates social cognitive theory (Bandura, 1986), social support theory (House, 1981), social networks (Heaney & Israel, 2002) and community health advisors (CHAs) within the trans-theoretical model (Prochaska & Diclemente, 1983; Prochaska, Redding, & Evers, 2002). This hypertension control model illustrates desirable connections between patient, physician and health care system to assist in improving BP control in an older adult population. Figure 2.4 shows the relationship of the various theories that make up this model.

The focus of this research involves one part of this model, the patient and their experience with the multidisciplinary educational intervention, LU, delivered by community health advisors (CHAs) and community experts from the four subject areas included in this program; nutrition, physical activity, stress management, and medication management. The health behavior change theory involved in the part of the model being examined is Social Cognitive Theory (Bandura, 1986), the theoretical basis for the lifestyle behavior changes reported from this LU (Porth & Hirth, 2009) and other lifestyle behavior change interventions (Toobert, Strycker, Glasgow, Barrera, & Angell, 2005; Wilcox et al., 2008). During classes two, three, four and five, small group

discussion activity based on SCT and facilitated by trained CHAs focusing on goal setting, barriers and enablers to nutrition, physical activity, stress management and medication management were presented. Only this section of the educational intervention was modified for purposes of theoretical model comparison. During the same classes two, three, four and five, in the same amount of scheduled time for the small group discussion activity, affirmative activities focusing on nutrition, physical activity, stress management and medication management were presented using the modified AE approach, by the researcher. To the researcher's knowledge, is the first research applying a modification of the AE approach to a health behavior change intervention. The primary intent of this exploratory research was to determine if the AE approach was more effective than the SCT approach in improving the outcome measures of decreased BMI, and systolic and diastolic BP, increased physical activity, fruit and vegetable consumption, and self-selected and fast gait speed, in community-dwelling older adults, who self-selected their LU intervention treatment group, based on the day of the week (Tuesday or Thursday) the class was offered.

HYPERTENSION CONTROL Cardiovascular disease is the leading cause of death in the U.S. (CDC, 2012). With one in three adults being affected by hypertension, which is a modifiable lifestyle cardiovascular disease risk factor (CDC, 2011a), developing interventions to educate Americans about how they can control and reverse this disease are warranted (I. Hajjar et al., 2006). This multi-faceted Lifestyle University intervention was designed to combine several components known to be effective in reducing blood pressure. It is estimated that 90% of adults, over the age of 55, are likely to experience elevated BP during their remaining lifetime (Vasan et al., 2002). Once contracted, the

risk of experiencing heart failure, stroke, coronary heart disease, and kidney failure also increases (Appel et al., 2006). Of the approximately 68 million persons with hypertension, 1 in 3 Americans, only about 46% have their BP under control (CDC, 2011a). When we look at our older adult population, 70% of adults 65 and older have hypertension, about 80% are receiving treatment while 54% are uncontrolled (CDC, 2011a). In South Carolina the 2009 rate of hypertension was about 32%, that is double the 14% Healthy People 2010 goal (DHEC, 2011). Effective hypertension education, detection, awareness, and control in South Carolina were needed in order to approach this Healthy People 2010 goal.

Normal BP is defined as <120/80 mm Hg, in 2003 by the National Committee on Prevention, Detection and Evaluation and Treatment of High BP (Chobanian et al., 2003). This committee designated the BP range of 120-139 mm Hg for systolic BP and 80-89 mm Hg for diastolic BP as pre-hypertensive indicative of a high risk for developing hypertension and is not considered a disease category (Chobanian et al., 2003). Table 2.1 illustrates BP categories for adults 18 and older.

There is a direct relationship between increased BP and the risk of experiencing stroke, heart attack, heart failure, and kidney disease. As BP increases, so does the risk of cardiac and renal diseases (Chobanian et al., 2003). Hypertension is considered under control in a patient when their average systolic BP is less than 140 mm Hg and their diastolic BP is less than 90 mm Hg. In those who have additional chronic diseases such as diabetes mellitus or kidney disease that increase the risk of CVD events, their controlled hypertension BP is 130/80 mm Hg (Chobanian et al., 2003).

Lifestyle modification and/or medications are the two avenues for hypertension treatment. The recommended treatment method for patients with BP over 120/80 mm Hg is lifestyle modification (Chobanian et al., 2003). Research has shown that increasing physical activity (Whelton et al., 2002), reduced sodium intake (Elliott et al., 1996; Geleijnse, Witteman, Bak, Denbreeijen, & Grobbee, 1994), weight loss if overweight (J. A. Blumenthal et al., 2010; Reaven, 2003; Vasan, Larson, Leip, Kannel, & Levy, 2001), limited alcohol consumption (Chobanian et al., 2003; Victor & Hansen, 1995), and incorporating a healthy diet like the Dietary Approaches to Stop Hypertension (DASH) diet (Sacks et al., 2001) are effective in controlling and reducing BP. Two of these lifestyle modifications, increased physical activity and adoption of a healthy diet, low in sodium and high in fruits and vegetables are components of the LU education intervention being examined.

This study examines the effect of an existing lifestyle hypertension intervention, Lifestyle University, with a section of the intervention, based on two different approaches to health behavior change, Social Cognitive Theory (Bandura, 1986) and modified Appreciative Inquiry (Bloom et al., 2008a; Bloom et al., 2011; Cooperrider, 1986; Cooperrider & Whitney, 2005), on fruit and vegetable consumption, physical activity, and gait speed. Current literature suggests that increased fruit and vegetable consumption may be related to a reduction in blood pressure (Appel et al., 1997; Van Duyn & Pivonka, 2000), while the positive benefit of exercise and physical activity reducing blood pressure is well established (Chodzko-Zajko et al., 2009; Pescatello et al., 2004; Wallace, 2003). What is less clear is the relationship between gait speed and hypertension (I. Hajjar et al., 2009).

FRUIT AND VEGETABLE CONSUMPTION A significant part of this intervention involves educating participants about the impact that nutrition has on hypertension. In industrialized countries with populations where blood pressure is high, and both vegetarian and non-vegetarian diets are prevalent, blood pressure is significantly lower in the vegetarian segment of the population (Sacks, Rosner, & Kass, 1974)Increasing fruit and vegetable consumption is an important component in dietary change interventions developed for control of hypertension (Appel et al., 2006; N. M. Karanja et al., 1999). The Dietary Approaches to Stop Hypertension (DASH) diet recommends the consumption of 8 to 10 daily servings of fruits and vegetables (N. M. Karanja et al., 1999). The vast majority of U.S. adults and South Carolinian's do not even consume an average of 5 fruits and vegetables daily (DHEC, 2011). The Healthy People 2010 goal of increasing the average fruit and vegetable consumption among U.S. adults was not met by any state in 2009 with 32.5% of adults consuming 2 or more fruits and 26.3% consuming 3 or more vegetables each day (CDC, 2010). In South Carolina adults, only 23.3% of adults consumed 2 or more fruits and 22.9% consumed 3 or more vegetables during 2009 (CDC, 2010). This low daily fruit and vegetable consumption nationally and in South Carolina is believed to increase the risk for hypertension, cardiovascular diseases and diabetes (DHEC, 2011). In Dietary Approaches to Prevent and Treat Hypertension: A Scientific Statement from the American Heart Association (Appel et al., 2006), consumption of a fruit and vegetable rich diet is recommended as a diet-related lifestyle modification that effectively lowers BP.

PHYSICAL ACTIVITY In the U.S. Administration on Aging Profile of Older Americans: 2010 report, we find that "Almost 32% of persons aged 65-74 and 18% of

persons 75+ report that they engage in regular leisure-time physical activity" (p.12). With so few older adults participating in physical activity, the unintended reality for these persons is an increased risk of hypertension and a two-fold increase in the likelihood of developing cardiovascular disease when compared to physically active adults (DHEC, 2011). Participation in regular daily physical activity can reduce the physiological impact of a sedentary lifestyle and the resulting consequences of chronic disease with its limiting effect on physical function (Chodzko-Zajko et al., 2009). The American College of Sports Medicine in their 2004 Exercise and Hypertension position stand indicate that exercise, specifically endurance activities, contribute to the prevention of hypertension in persons with normal BP, lowering BP in both normal and hypertensive adults (Pescatello et al., 2004).

GAIT SPEED A sedentary lifestyle is a significant risk factor in reduced gait speed as it has been proposed as an indicator of physical and functional health (Studenski et al., 2011). There appears to be a relationship between slow gait, impaired executive function, and depressive symptoms in older adults with elevated BP and other cardiovascular diseases (I. Hajjar et al., 2009). Maintenance of an older adult's physical mobility or locomotion is a vital component of activities of daily living (ADLs) and independent activities of daily living (IADLs) that enable them to live independently in community (Lawton & Brody, 1969). As we age, physical changes can impact the way we function in our life. In order to retain the independence needed to live in the community, an older adult needs to maintain mobility to be able to perform activities of ADLs and IADLs. Many of these activities include a person's ability to walk, for example, the personal care ADLs of bathing and toileting as well as IADLs of light

housework, shopping, and meal preparation (Ferrini & Ferrini, 2008) generally involve some amount of walking (unless the person is confined to wheel chair and has exceptional upper body strength enabling them to make independent transfers to and from the wheel chair). How fast an individual can walk, called gait speed, is one such observable and measurable change in the physical function of an older adult.

As we age, the speed with which we walk decreases. In (Elble, Thomas, Higgins, & Colliver, 1991) study comparing gait speed and stride length in 20 young adults and 20 healthy older adults, gait speed dropped by 17% and stride length declined by 20% in the older group. Lower body muscle strength is a contributing variable to this reduction in gait speed in older adults between the ages of 50 and 70, where women's strength is less than men's. Strength was shown to decline by 33% in men and 29% in women within this age range (Ostchega, Dillon, Lindle, Carroll, & Hurley, 2004). There are conflicting results regarding leg strength loss based on ethnicity and this study not finding a significant difference when height adjustments were made in strength values. Starting about age 50, overall strength declines annually in sedentary older adults approximately 1%, this decline increases to an annual rate of 3% after age 70 (Spirduso, 2005).

Loss in muscle strength is impacted by decreasing muscle mass. Sarcopenia is an age related loss of muscle mass that even highly trained master athletes experience. This differs from muscle atrophy a condition found in sedentary older adults where the muscle cells or fibers are lost as protein in the cells is lost. A resistance training program can reverse muscle atrophy in older adults (Spirduso, 2005). The practical implications of this strength reduction are reflected in the increasing difficulty that older adults have in being able to cross the street. Langlois, et al., (1997) reports that 11% of New Haven

Connecticut's residents, aged 72 or older, had trouble crossing the street. Only 1% had a fast enough gait speed to cross a signaled intersection within the normally allotted time of 1.22 m/sec.

SELF-SELECTED GAIT Using a measure of self-selected gait speed to clinically assess the functional ability of older adults has been proposed as a "sixth vital sign" (Fritz & Lusardi, 2009). This is proposed based on the recent summary that combined individual data collected in nine cohort studies between 1986 and 2000 of 34,485 healthy community-dwelling older adults, aged 65 and older (Studenski et al., 2011). These individual baseline gait speed measures were compared from longitudinal studies ranging from six to 21 years to determine rates of survival and life expectancy. In every study, survival was associated with gait speed. This and other predictive walking speed research information relating walking speed with ADLs and IADLs was organized into an easy to use chart, based on 10-meter walk times (Fritz & Lusardi, 2009). At the following walking speeds typical mobility and functionality characteristics are: >0.1 m/s hospital discharge to skilled nursing facility; <0.1 m/s more likely for hospitalization discharge to home; >0.4 m/s use of a household walker; >0.6 m/s, hospitalization, ADL and IADL dependence; >0.8 a limited community ambulator; >1.0 m/s fall risk intervention necessary; <1.0 m/s independent in ADLs, hospitalization less likely, adverse event less likely; >1.2 m/s community ambulator; and <1.2 m/s normal street crossing and walking speed. With this information, clinicians can easily assess the functional capacity of their patients once they have administered a gait speed test. Administration of this assessment prior to hospitalization discharge can contribute valuable information to the care team when deciding between discharging the patient to skilled nursing or home.

FAST GAIT Muscular strength and cognitive ability in addition to other factors influence this complex skill of walking (Fritz & Lusardi, 2009). Detecting functional decline in older adults whose gait speed slowly decreases is more difficult since different muscle groups can take over to compensate for losses in other muscle groups. Fast gait speed testing may be more appropriate for identifying risks in higher functioning older adults who have not experience functional or anatomical injury (Ferrucci et al., 2000). In a fait gait assessment, the subject is instructed to walk as fast as possible as opposed to walking at their self-selected walking speed. This fast walking speed may aid in identifying cognitive decline in older adults (Deshpande, Metter, Bandinelli, Guralnik, & Ferrucci, 2009) since executive functioning has been associated with fast walking speed (Coppin et al., 2006). Both normal and fast gait speed are assessed as secondary measures in this study since slow gait speed has been explored as a component of an aging phenotype for older adults with hypertension and cardiovascular disease (I. Hajjar et al., 2009).

PARTICIPANT PROGRAM REACTION ASSESSMENT The LU educational intervention (Porth & Hirth, 2008, 2009), based on the SCT (Bandura, 1986) approach to health behavior change (Bandura, 1998) has been effective in improving cardiovascular risk factors in community-dwelling older adults since its inception (Blackledge, Harmon, Frost, & Hajjar, 2005). A qualitative assessment of AE approach modification (Moore & Charvat, 2007) to this intervention is included to evaluate the potential effectiveness of this proposed health behavior change model. In addition to comparing the effect of each health behavior change approach on changes in BP, BMI, physical activity, fruit and vegetable consumption, as well as to self-selected and fast gait speed, the reactions of the

participants to each approach can provide insight into the feasibility of using this modified AE approach (Bloom et al., 2008b; Moore & Charvat, 2007) in other research health behavior change interventions.

In summary, the need for developing and delivering effective lifestyle interventions to older adults is essential in meeting the Healthy People 2020 objective of "reducing the proportion of people in the population with hypertension" (Sullivan, 2011). The results from this multi-faceted interdisciplinary LU intervention presented by CHAs and health experts to community-dwelling older adults indicated that behavior change was possible. The risk of cardiovascular disease can be reduced through adopting increased physical activity, fruit and vegetable consumption, along with stress management (Porth & Hirth, 2008, 2009). This is the first study to explore a modification of AE (Bloom et al., 2008a; Moore & Charvat, 2007) in an the existing SCT (Bandura, 1998) based LU educational intervention. The two research questions this study sought to answer were: 1) Is the Appreciative Education approach more effective than the Social Cognitive Theory approach in promoting health behavior change when applied to an educational intervention in older adults to control hypertension? 2) How do participant perspectives and health behaviors after the intervention differ between the Appreciative Education approach and Social Cognitive Theory approach?

Table 2.1 Blood Pressure (BP) Classification for Adults

Blood Pressure Classification	**Systolic BP mm Hg**	**Diastolic BP mm Hg**
Normal	< 120	and <80
Pre-hypertension	120-139	or 80-89
Stage 1 hypertension	140-159	or 90-99
Stage 2 hypertension	≥ 160	or ≥ 100

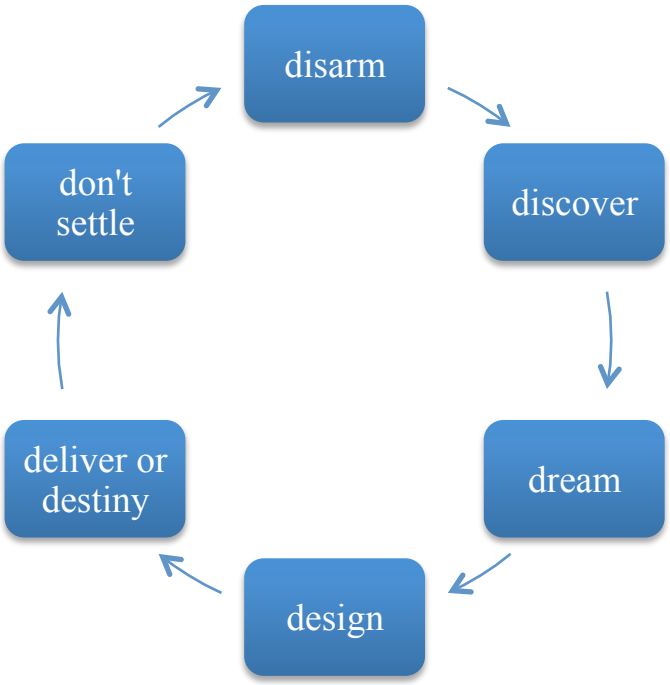


Figure 2.1 Appreciative Cycle of Stages

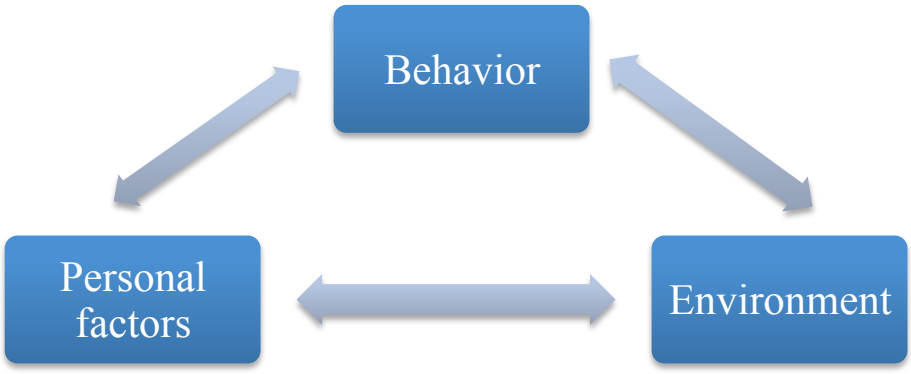


Figure 2.2 Social Cognitive Theory Model

	Social Cognitive Theory	Appreciative Approach
Focus	Changing problem behavior or deficit	Building on past successes and the best of what people are already doing well
Philosophical framework	Deficit thinking	Affirmative thinking
Future view	Vision limited	Open to new possibilities
Energy	Draining	Generation
Search for	Obstacles to overcome	Strengths & passions
Rate of change	Slow	Moderate
Process	Adopt strategies from others	Create individualized plans of action

Figure 2.3 Comparison of Social Cognitive Theory and Appreciative Education Approach

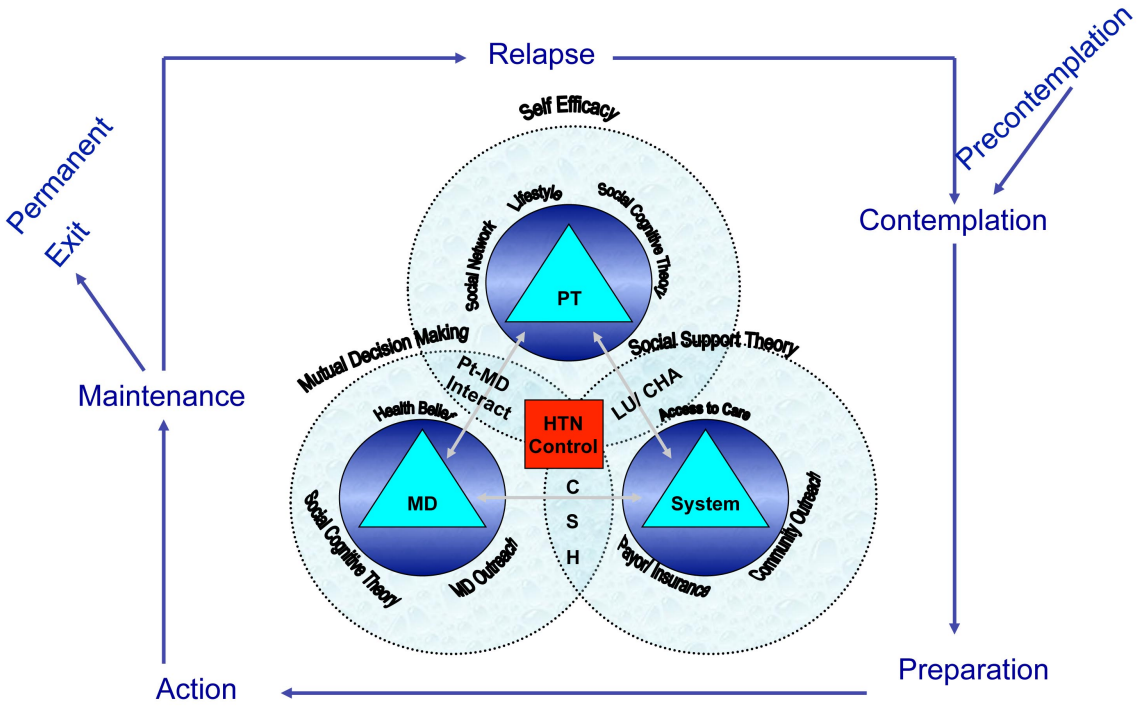


Figure 2.4 Frost-Hajjar Model of Hypertension Control

CHAPTER 3

METHODS

This study used both quantitative and qualitative measures in a quasi-experimental mixed-methods two-group pre/post-test outcomes design to compare the results from the established Palmetto Health Lifestyle University (LU) intervention using two health behavior change models in community-dwelling older adults.

3.1 THE RESEARCH QUESTIONS

The research questions were 1) Is the Appreciative Education approach more effective than the Social Cognitive Theory approach in promoting health behavior change when applied to an educational intervention in older adults to control hypertension? 2) How do participant perspectives and health behaviors after the intervention differ between the Appreciative Education approach and Social Cognitive Theory approach? The purpose of this study was to compare the effectiveness of two health behavior change models, Social Cognitive Theory (SCT) and Appreciative Education (AE), in an established intervention, designed to control hypertension in older adults. This chapter outlines the following areas related to the methodology used in this study: 1) the research setting, 2) participants, 3) the intervention, 4) data collection instruments, 5) data collection procedures, and 6) data analysis.

3.2 The Research Setting

This study received IRB approval and took place in a fellowship building of a protestant church and in a senior center, in a capital city in the southeastern region of the United States. The church and senior center volunteered use of space for six distinct LU courses. During the same day of the week prior to start of these classes, an orientation/pre-test session, initiated this offering, which was opened to community-dwelling adults, aged 50 and older, at no cost. The researcher/facilitator, four community health advisors (CHAs) and local community health experts delivered the LU research intervention. This intervention was developed as a multi-disciplinary hypertension management program for use in a geriatric care setting. This course was designed to lower blood pressure (BP) by improving healthy behaviors, i.e. weight management, nutrition, physical activity and stress management, in addition to psychosocial health and quality of life (Ihab M. Hajjar et al., 2007). The development of this LU intervention was funded with a grant from the Duke Foundation. This grant covered research team salary support and study costs. Since the inception of LU in 2005, over 500 persons attended classes at various sites throughout southeastern region of the United States, including: 1) churches, 2) hospital classrooms, 3) senior centers and 4) community centers. The researcher delivered this intervention in a church fellowship hall, as its facilitator with CHAs and community health experts, during a previous course offering.

A local non-profit senior center, whose mission is to keep mature adults (50 years and older) physically fit, socially engaged, intellectually stimulated and independent, with over 800 members, sponsored LU classes since its introduction in 2005. The senior

center that sponsored the classes used in this study, obtained grant funding from its local United Way, to cover the cost of class materials and instructional support.

3.3 The Participants

The target population for this study was community-dwelling older adults, aged 50 and older, with an interest in weight management, nutrition, physical activity and stress management, to prevent or control hypertension, and recruited to test the hypotheses. Volunteers interested in making lifestyle changes, registered for the six, 6-class courses, each based on the same 12-week LU intervention, offered at the same time and location, during the same weeks, on two different days, Tuesday and Thursday. The health behavior change model used during the small group discussion period during four classes in each course was the only difference between the classes. Participants self-selected their group based on the most convenient day of the week to attend classes. This sample was selected from the two intact groups of older adults who registered for the free LU classes, through a local senior center.

The senior center and church promoted the recruitment for this study which included: 1) flyers, 2) announcements in the senior center newsletter, 3) announcements in monthly happenings email to center members, 4) sign-up sheets at senior center, 5) promotion at Kiwanis and other community group meetings by the senior center executive director, 6) church bulletin announcements, 6) interviews during one of the local public radio station programs, and 6) press releases in area newspapers (Appendix A). Radio interviews with senior center executive director, the LU program administrator, and the facilitator/researcher of this course provided information about the LU classes on a show aired by the local public radio station, about two-weeks prior to the orientation

days for the courses. Additionally, the interviews were posted on the public radio station's website along with information and links to the senior center. Registration sheets for these LU courses were maintained at the front desk of the senior center where individuals could sign-up or where senior center staff accepted phone registrations (Appendix B).

3.4 The Intervention

The Lifestyle University intervention was developed as a multi-disciplinary approach to improve hypertension control through health behavior change educational classes. This intervention consists of a series of six (6) two and a half hour classes, meeting every other week during 12 weeks, with an orientation meeting the week prior to the start of classes. Each of the six classes cover various aspects of four main topics: 1) nutrition and diet, 2) physical activity, 3) stress management, and 4) medication management.

A team of CHAs along with nutrition, physical activity, stress management and pharmacy experts from the community, presented information during the classes from the four main topics. CHAs are community-dwelling older adults who successfully completed this intervention and received additional training and mentoring in order to present this intervention. Community experts are health care professionals, some of who developed this intervention, that present information and answer questions about their area of expertise. For example, a PhD from the local university's School of Nursing contributed to the development of the stress management section of this intervention. This expert attended one of the six classes, presenting stress management research in layman's terms, and information about how the participants could incorporate the

research findings into their daily routine to manage stress to help control their hypertension.

During the 45-minute period immediately prior to the start of each class, participants were encouraged to receive a BP reading and be weighed. At the orientation session, a folder was prepared for each participant so that her or his six weekly BP and weight readings could be recorded.

ORIENTATION AND PRE-TEST DATA COLLECTION Pre-test data collection took place as part of the orientation, a week prior to the first class. At that time participants completed all pre-test measures, the pre-intervention surveys (LU Evaluation Form, Eating at America's Table (EATS) all day Survey, International Physical Activity Questionnaire (IPAQ) and Health History), measurements (10-meter walk test, 3 blood pressure readings, measure of height and weight), (Appendix C). When pre-testing was complete, course materials were distributed (four books used in this class), introductions were made (CHAs, facilitator and volunteers) and an orientation to the course was provided. Since some students arrived earlier than others, upon arrival, each student was checked in, given a nametag, and a folder containing the intervention surveys along with an orientation checklist. The checklist identified all the activities that the student needed to complete during the orientation. When it was determined that the first participant had completed all activities, the researcher asked for everyone's attention in order to introduce the staff and provide a brief overview of the program. The various sponsors of the classes were acknowledged and thanked for their contributions. Students were then read a LU commitment letter (Appendix D) that they were asked to sign prior to being given the books for this class. There was no cost to the participants for this course as the

cost of the books, snacks, materials and facilitator was covered by a grant from the local United Way. The CHAs were compensated for their time by the state's Department of Health and Human Services. The use of the church facility and senior center was provided at no cost for these classes.

MATERIALS Each participant received four softbound LU books: manual (78 pages), journal, class cookbook (79 pages), and resource manual in a reusable grocery bag donated by a local grocery store. Students also received a copy of the class flyer that listed all the dates and times the classes met (Appendix E). The manual contained six sections; each section corresponded to one of the six class days. Each section included information reflecting the day's class presentation information about: 1) nutrition, 2) physical activity, 3) stress management and during classes one, two, three and six, 4) medication management.

The journal was divided into 12 sections, one for each week of the class. Each section began with a "Lower Your Risk Pledge" which listed eleven specific action items developed to help lower blood pressure and the accompanied risk of heart disease and stroke (Appendix F). For example, the first item read "To know what my blood pressure should be and try to keep it at goal." There was also space to write in an alternate action if the student chose. Participants were encouraged to select no more than one or two of the listed actions to practice during the week. There was space to write in the name of up to two helpers and what the helper(s) would be asked to do in support of the participant during the week. Blank lines were provided for the participant to write down how they would reward him or herself and their helper(s) at the end of each week. A signature and date line completed the page.

Following the pledge page were two pages for each day in the week. On the first page, areas were provided to record information on: 1) blood pressure, time, reading and comments; 2) stress management- relaxation technique used during the day; 3) physical activity, type and minutes; and 4) medication, drug, dosage, time and if missed. The facing page was a food journal where: 1) serving size, 2) food name, and 3) sodium content (mg) were to be recorded. The bottom of this page included checkboxes under four areas along with number of recommended servings: 1) fruits, 4-5 daily; 2) vegetables, 4-5 daily; 3) low-fat dairy, 2-3 daily; and 4) water, 8 daily. This provided a quick way for the student to indicate the respective number of servings they had consumed during that day (Appendix G).

The class cookbook contained favorite recipes from past participants and program developers along with modified recipes from various sources: 1) The DASH Diet for Hypertension, www.mrsdash.com, and 2) American Heart Association (AHA) Low salt cookbook. There were four recipe sections: 1) main dishes; 2) side dishes; 3) breads and 4) desserts. When the information was available: 1) recipe size (i.e. serves 8), 2) serving size, 3) calories, 4) fat grams and 5) sodium mg, were indicated.

The resource manual was divided into four sections: 1) community resources, 2) stress management, 3) physical activity directory and 4) nutrition information. The purpose of this book was to provide participants with specific information about other programs and services available to them locally, to support students in making the lifestyle changes presented in this course.

An activity schedule was developed for each class that included: 1) topic time allocation, 2) topic, 3) LU manual page numbers, 4) CHA covering the topic, and

5) expert(s) for the day. This outline provided a framework for the presenters to follow fostering consistent information coverage across individual classes (Appendix H). Each session began with a: 1) five to ten minute welcome, 2) introduction of experts and 3) overview of the day's class.

CLASS 1 Class one began with a review of the: 1) class schedule, 2) manual content, and 3) HIPPA statement regarding confidentiality. Students were encouraged to share what they learned with family and friends while agreeing not to share personal participant stories. The intention was for the students to feel safe about asking questions and sharing personal stories regarding their health. All students were then invited to introduce themselves and share what attracted them to this class. The CHAs and researcher communicated how they became instructors for this class.

The first topics from the book presented by a CHA included: 1) an explanation of blood pressure and 2) hypertension and the subsequent chronic diseases that result from this blood vessel damage, which affects other organs. The relationship between diabetes and hypertension was explained along with the importance of monitoring the different types of carbohydrates consumed.

A stretch-snack break provided students with a sample of three different healthy foods a: 1) main dish, 2) side dish and 3) dessert or snack. These foods were offered to the students in 2-ounce samples designed to introduce to them to new ways of incorporating more vegetables, fruits, whole grains, low-fat dairy, nuts and seeds into their diet. Water was always available at each table, flavored with: 1) fresh fruit, 2) vegetables or 3) herbs. A tea, agua fresca fruit or vegetable drink was also served with the food.

The next section presented by a CHA featured a variety of ways to reduce stress. This was followed by a discussion of what constitutes healthy eating, led by a nutrition expert, including: 1) increasing fruit and vegetable consumption, 2) lowering fat and 3) lowering sodium intake.

Basic weight loss principles were presented: 1) portion size reduction, 2) calories (energy) in-calories (energy) out, 3) BMI, and 4) various calorie-counting methods. An introduction to basic principles of physical activity was presented by the researcher and included: 1) body composition changes, 2) examples of various physical activities, and 3) how to safely begin increasing physical activity. The students participated in an exercise of standing up and sitting down multiple times followed by chair-seated leg stretches.

A second stretch break was followed by an introduction to medications presented by a CHA. The first class concluded with the researcher explaining: 1) how to use the journal, 2) establishing initial behavior change goals, and 3) a review of the resources available in this community. A summary including: 1) brief review of the day's topics, 2) answering questions, 3) reminder to bring a complete list of all medications to the next class, 4) door prize distribution and 5) completion of a feedback form (Appendix I) of the day's session, concluded the first class.

CLASS 2 The second LU class included these topics: 1) did you forget something today, 2) handling stress the healthy way; 3) easy ideas for better eating; 4) make your day an active day; and 5) goal setting or discovery during the small group work. During the first 5-minutes of this class, the researcher provided a: 1) class overview, 2) introductions of community expert(s) and 3) answered any questions. The pharmacy

expert presented the content for the pharmacy section of this class, explaining the importance of adhering to professional health care advice regarding medications. An explanation of: 1) why persons need to carry a list of current medications, 2) discarding expired medications, and 3) the importance of leaving medications in their original labeled container, was pointed out. This 20-minute section concluded with describing strategies for remembering to take medications.

A CHA covered the handling stress in healthy ways segment by listing events that cause stress and the resulting physiological changes that occurred in our bodies. This was followed by a discussion of activities that could reduce stress. A stretch-snack break provided students with a sample of three different healthy foods a: 1) main dish, 2) side dish and 3) dessert or snack. The recipes for these foods were in the LU cookbook or provided in a handout(s). A nutrition expert explained how to include more fruits and vegetables throughout the day. Strategies for containing food costs while increasing fruit and vegetable consumption were presented. The significance of: 1) moving toward low-fat dairy products, 2) reducing sodium intake and 3) high calcium alternatives to milk, was covered.

During the physical activity section, the researcher presented a variety of ways for participants to participate in 30-minutes of daily physical activity in addition to leading the class in 5 minutes of exercises which included: 1) shoulder rolls, 2) neck stretches, and 3) upper-body brain integration exercises. An explanation of: 1) pedometers, 2) why they were useful and 3) where to purchase them concluded this 15-minute section. Following a 5-minute break, a 50-minute small group work session on goal setting (SCT), discovery (pilot AE) or disarm and discover (updated AE), took place (see AE

pilot and updated approach section below). The class concluded with a review of the day's topics, door prize award, a reminder about talking with their physicians, and completion of the feedback form for class two.

SMALL GROUP APPROACH COMPARISON The established LU intervention based on the SCT model, included 40 - 50 minute small group (3-6 students) discussions, which were an important component of classes two, three, four and five. The researcher and CHAs lead these group discussions. Four classes, classes two, three, four and five include time for small group discussions that focused on a specific aspect of behavior change: 1) class two, goal setting; 2) class three, benefits & barriers; 3) class four, successes and solutions; and 4) class five, staying on track (Appendix J). This time for small group discussion provided the students with a more conducive setting to connect with other students and a small group facilitator. This is the section of the class that incorporated the two different health behavior change models; the control group followed the established intervention using the SCT approach, while the experimental group used a modified AE approach. During three courses, the established control SCT intervention plan was followed during the 40 – 50 minute discussion period.

AE PILOT AND UPDATED APPROACH During the spring 2012 pilot course, in the experimental AE approach group, students selected an interview partner during the scheduled 40 – 50 minute segment of the class. Each participant in the pair interviewed the other for 15 – 20 minutes, based on the AE questions that were provided to each student (Appendix K). As one participant was the interviewee, the other student took notes as the interviewer. This process was then reversed with the interviewer and interviewee switching roles. If there were an uneven number of students present that day,

one of the CHAs or the researcher filled in as a partner for this activity. At the end of this interview period, 10 minutes was devoted to a class discussion when the students could share comments about this process. This process was followed during the small group discussion period in classes two, three, four and five.

During and after the AE pilot, the researcher made observations and listened to participant feedback regarding small group activity participant comfort and ability to complete the activity. The participants: 1) experienced difficulty answering the questions on the activity sheets; 2) expressed discomfort with the pair interview process; 3) were challenged with summarizing and recording partner responses to the questions; and 4) were reluctant to identify three wishes to improve eating, physical activity and relaxation i.e., the focus of the second discussion group activity. After the researcher reflected on the verbal feedback provided by the participants during the discussion time along with their written evaluations from their feedback forms, completed at the end of each class, she discussed these concerns this with her dissertation chair and others involved with this research. Their recommendations led the researcher to contact Dr. Jenny Bloom, who guided the researcher in restructuring these activities for the subsequent fall 2012 AE courses based on the Appreciative cycle (Figure 3.1).

The Appreciative Cycle was the framework used to update the AE small group activities (Figure 3.1). The Autograph Hunt the first activity (disarm) helped to "break the ice" so that participants were more at ease with learning about the other participants in the class. The second activity, Strengths Hunt (discovery), assisted participants with identification of three changes that would assist them in improving their health and a strength that could assist them in making this change. As participants shared their

answers with the group, they were encouraged to list the strengths of the other class members. This activity focused on the resources that were available to support participants in make these changes.

The researcher presented John Maxwell's dream information during class three, the second small group activity time. The participants were asked to make their own "Bucket List" (dream), a list of the things they wanted to experience before they "kicked the bucket". During the next activity, they were invited to dream big as they identified the health changes they would love to experience. Then they listed one step they could realistically take toward making this change.

During the third small group activity time, during class four, participants recalled their: 1) health dreams, 2) identified what was the most important dream and 3) how much they wanted to accomplish it. They were then directed to use the strengths that they had previously identified to assist them in accomplishing their health dream (design). They identified: 1) anticipated challenges, 2) supportive people and 3) one concrete step toward making that change.

At the fourth small group activity time, during class five, participants were invited to think about the changes they made since the start of the class (deliver). Next, they identified the people who support these health changes as their Personal Presidential Cabinet. In the final activity, Don't Settle Reflection, they were asked a series of questions (don't settle) about: 1) what they had learned during class, 2) any health changes made, 3) their goal or dream and 4) the steps taken toward accomplishing that goal.

CLASS 3 The topics covered in the third class included: 1) relax, don't stress; 2) to supersize or not to supersize; 3) the key to staying active, make it a habit; 4) one pharmacy stop is better than two; 5) benefits and barriers or dream small group work. The researcher provided an: 1) overview of the class, 2) introductions, and 3) answered questions during the initial 5-minutes of this class. During the following 40-minute section, a stress management expert discussed what we have learned from research about the impact of stress on our bodies and various ways of counterbalancing those effects. Several relaxation techniques were explained: 1) progressive relaxation, 2) autogenic training, 3) guided imagery, 4) self-hypnosis, 5) Benson's relaxation response, and 6) meditation. The students were then invited to experience a 15-minute guided imagery exercise, led by this expert.

A nutrition expert directed the class in a label reading exercise and discussed serving sizes during this 20-minute segment. The snack and stretch break followed featuring a: 1) main dish, 2) side dish and 3) desert or snack containing vegetables, fruit and whole grains. The recipes were provided in the LU cookbook and on additional handout(s). During the 15-minute physical activity segment, the researcher presented information on how to establish a physical activity habit followed by leading the class in 5 minutes of balance exercises which included: 1) seated ankle and knee rotations; 2) foot point and flexes; and 3) 10-second semi-tandem and tandem stands. In the pharmacy section, a CHA presented information on the effects of polypharmacy during this 15-minute segment. The 40-minute small group section focused on problems and solutions (SCT), dreams (pilot AE) or design (updated AE). The researcher ended this class with a: 1) review of the day's topics, 2) door prize awards, 3) completion of the feedback form

for class three, 4) reminders to bring a recipe for modification, and 5) to wear comfortable clothing to the next class.

CLASS 4 A nutrition expert was featured in class four, who presented the topic cooking for health and led a recipe modification discussion. Other topics covered during this class include: 1) changing your outlook, 2) what your workout may be missing, and 3) small groups working on successes and barriers or design. . The researcher provided an: 1) overview of the class, 2) introductions and 3) answered questions during the initial 5-minutes of this class. During the first 30-minute section, the nutrition expert presented ways to make meals more interesting by: 1) varying the texture and temperature of foods, 2) including many different colors, 3) boosting flavor by adding herbs and spices. Ways of preparing tasty foods while reducing sodium, fat and refined sugar were covered along with how to include more vegetables in meals.

The stress management presentation by a CHA, focused on: 1) how to shift attention from the events and actions that result in anger and other negative emotions toward less stressful, 2) neutral or positive thoughts and emotions during this 15-minute segment. Suggestions for forming new, less stressful habits to replace the current stressful habits were presented. A 10-minute snack and stretch break featured modified recipes with both the original and modified recipes given to the students while they sampled a: 1) main dish, 2) side dish and 3) desert. In the 30-minute physical activity section, the researcher explained the importance of including balance and flexibility activities as a part of a regular workout. The students practiced a few of the suggested activities: 1) heel to toe walking, 2) exercises with narrowed base of support, and 3) various stretches. During the 40-minute small group work period, students either

discussed their successes and barriers (SCT), or interviewed a partner about what their dreams were for a healthier body (pilot AE), or how to use personal strengths to accomplish health dreams (updated AE). This class concluded with the researcher: 1) reviewing the day's topics, 2) awarding door prizes, 3) completion of feedback form for class four, and 4) a reminder to wear comfortable clothing to the next class.

CLASS 5 The topics covered during class five included: 1) making life less stressful, 2) mastering restaurant eating, 3) staying strong, and 4) small group work. Following the 10-minute welcome and preview of the day's topics by the researcher, the first 20-minutes focused on lifestyle modifications aimed at making life changes that result in a reduction of stress, presented by a CHA. Activities that bring joy and fulfillment to balance stress were enumerated and included: 1) experiencing nature, 2) praying, 3) hobbies, and 4) getting hugs, pets, or a massage. The 20-minute nutrition section, lead by a nutrition expert, provided tips for healthier restaurant eating that included: 1) asking about food preparation, 2) portion awareness, 3) soup and salad challenges, 4) lower fat entrées, 5) side choices, and 6) toppers on the side. A physical activity expert was featured for a 30-minute segment during this section on staying strong. Information on how to get started and be safe while doing strength exercises was covered. The students were invited to participate in several strength exercises including: 1) side leg raises, 2) chair dips, 3) overhead and arm curls. The 40-minute small group section of this class focused on staying on track (SCT), or delivery (pilot AE), or delivery and don't settle reflection (updated AE). This class concluded with a: 1) review of the day's topics by the researcher, 2) door prize award, 3) the completion of the feedback

form for class five, and 4) a reminder to talk over health and medication concerns with their physician.

CLASS 6 AND POST-TEST 1 DATA COLLECTION The last class, six, begins with a 10-minute welcome and an explanation of the structure for the last class. An RN, prior to the start of class six, administered post-test 1 BP, height and weight measures. The majority of the time in this class was divided into five 20-minute sections. The students rotated through five stations, changing location every 20 minutes. Post-test 1 measures were completed at the various stations during this rotation. The facilitator, CHA's, and experts remained at each station while the students moved to a different station every 20 minutes. The stations are as follows: 1) nutrition, stress management, 2) physical activity, 3) medication management and 4) semi-structured focus group questions. The post-test 1 measures were made and questions were answered at the following stations: 1) EATS all day post-test survey was completed at the nutrition station, with the remaining time allocated for the nutrition expert to answer questions; 2) stress management station, the post-test IPAQ was administered, followed by a CHA answering students' stress management questions during the remaining time; 3) 10-meter walk post-test measure was completed at the physical activity station, with a physical activity expert or CHA addressing student questions; 4) LU Evaluation Form was administered at the medication management station, followed by a CHA answering any remaining medication management questions; 5) the researcher asked a series of questions at the evaluation station. When participants concluded this station rotation, all post-test 1 measures were completed. During the final 20-minutes of this class, the researcher, with the help of the CHAs, provided a final review followed by distribution of graduation

certificates for the members of the class who attended at least five of the six classes. Any final questions were answered followed by completion of class six feedback form. The five post-test 2 sessions were completed between 6 and 18 weeks after the post-test 1 that was administered on the last day of class (Table 3.1).

An optional grocery store tour was scheduled during one of the weeks when class was not held, about midway through the course. Interested students met the researcher and CHAs at a local grocery store selected by the students in each class. Student questions were answered and the LU CHAs and researcher talked about differences between organic and non-organic produce, farm and wild caught fish, labeling of packages, sodium content of processed foods, and label reading.

3.5 Data Collection Instruments

International Physical Activity Questionnaire (IPAQ) The development of the International Physical Activity Questionnaires (IPAQ) responded to the need for instruments to compare physical activity and inactivity internationally. Both long and short versions of the questionnaire are readily available for use depending on the depth of information desired in the research. Long and short versions were tested in a 12-country reliability (Spearman *p* of 0.81 and 0.76, long and short version) and validity (Spearman p of 0.33 and 0.30, long and short version) study during 2000 for use with adults ages 18 – 65 (Craig et al., 2003). The long form version was tested with older adults in Hong Kong (Macfarlane, Chan, & Cerin, 2011) finding the reliability intraclass correlation coefficient of (ICC) $\geq$.81 (Forsen et al., 2010). The seven-question short version of this instrument was chosen for use in this research based on its favorable rating

as a self-administered physical activity questionnaire for older adults (Forsen et al., 2010) to indicate if there was any pre/post intervention change in physical activity.

EATING AT AMERICA'S TABLE STUDY (EATS) FRUIT AND VEGETABLE SURVEY

The Eating at America's Table Quick Food Scan is a short survey developed by National Cancer Institute grantees and staff was selected to measure fruit and vegetable consumption (Thompson et al., 2000; Thompson et al., 2002) in this study. There are two versions of this scanner, an All-Day Screener and a By-Meal Screener. Both survey's can be helpful in estimating median fruit and vegetable consumption in US adults ages 20 to 70. The estimated correlations between true intake and the By-Meal screener, with 95% CI, was for males (.067) and females (0.53).

10-METER WALK TEST The 10-Meter Walk Test examines gait speed (Fritz & Lusardi, 2009). This measure is a reliable and valid (Richards & Olney, 1996; Steffen, Hacker, & Mollinger, 2002) correlate of functional ability (Perry, Garrett, Gronley, & Mulroy, 1995). The length of time that it took an individual to walk 10 meters was measured after being instructed to walk at a self-selected walking speed. The participant was positioned about 1 meter behind a taped line and timing began once they crossed the start line and ended at the finish line, with another line about 1 meter past the finish line, designated as the deceleration zone. This process was repeated 3 times and the average of the 3 timed walks was recorded. To convert this time into meters/minute, the 10-meter walking distance was divided by the time and multiplied by 60. This same process was followed in measuring fast gait speed. The only change was instructing the subject to walk as fast as possible.

LIFESTYLE UNIVERSITY EVALUATION FORM This evaluation was designed and revised by Palmetto Health and DHEC staff to collect basic demographic data on each participant along with information on self-reported fruit and vegetable consumption, physical activity, health status, and perceived stress. This instrument was administered as a pre-test on the orientation day, as post-test 1 during the class six and at post-test 2.

BLOOD PRESSURE MEASUREMENT The protocol for the pre-test, post-test 1 and post-test 2 BP reading aligns with recommendations from the American Heart Association (Pickering et al., 2005). These pre/post measures, taken by the same RN, were used during data analysis.

An automated BP measurement device (OMRON HEM-705-CPN Digital Blood Pressure Monitor) and a standardized procedure for the measurement of BP and pulse were utilized, as specified in the Blood Pressure Manual of Procedures (MOP). The design and operation of the OMRON HEM-705-CPN Digital Blood Pressure Monitor is based upon the combined principles of compression of the brachial artery under an elastic, inflatable cuff and estimation of the systolic and diastolic BP levels by oscillometric methods.

BP measurement was conducted early in the visit. Before measurements commenced participants were offered the opportunity to visit a restroom or bathroom. The participant was instructed not to smoke or have any caffeine within the 30 minutes prior to the BP determinations.

BP measurements were taken on the right arm. Participants sat quietly for 4-5 minutes before the first measurement was taken. Seated, resting BP and pulse were

measured three times at each evaluation visit. The first reading was discarded and the average of the second and third measurements were used in analysis.

The OMRON HEM-705-CPN is an automated device. The data collector determined and placed the correct sized cuff on the participant's arm, pushed the button on the device and waited for the output. The pre/post measure readings were printed on an OMRON printer, which was attached to the device. Weekly BP readings were completed by an RN and recorded in each participant's weekly recording summary sheet.

WEIGHING Pre-test, post-test 1 and post-test 2 weights were measured with a Health o Meter digital Scale model # BFM580KD-01 that was calibrated prior to weigh-in's using two Cap Barbell, 5-pound weights. Each week the participants were weighed and their weights recorded in their weekly summary record.

DISCUSSION QUESTIONS USED DURING WEEK 2 THROUGH 5 SMALL GROUP DISCUSSIONS In the LU established intervention, the intervention research staff developed discussion questions based on the SCT approach that were used by the CHAs (Appendix J). In the alternative AE pilot model, the researcher with the assistance of Dr. Shirley Moore, who had extensive experience in using this model, designed discussion questions (Appendix K). The updated AE small group activities were developed with the guidance of Dr. Jenny Bloom using the Appreciative Advising and Appreciative Education models (Appendix M).

QUALITATIVE POST INTERVENTION INTERVIEW DATA COLLECTION In order to gather additional data about participant reactions to the health behavior changes presented during these interventions, the researcher developed semi-structured questions for use during the 34 interviews with completers after post-test 2 (Appendix M). These

interviews were digitally recorded and transcribed verbatim by the researcher. The interviews were analyzed using grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 2015)

3.6 Data Analysis

The hypothesis for the first research question was: Is the Appreciative Education approach more effective than the Social Cognitive Theory approach in promoting health behavior change when applied to an educational intervention in older adults to control hypertension? The quantitative variables measured were 1) systolic BP, 2) diastolic BP, 3) BMI, 4) fruit and vegetable consumption (EATS), 5) physical activity participation (IPAQ), 6) self-selected gait speed, and 7) fast gait speed. The second research question was: How do participant perspectives and health behaviors after the intervention differ between the Appreciative Education approach and Social Cognitive Theory approach? This question was analyzed using grounded theory analysis, with the constant comparison method of open and axil coding (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Strauss & Corbin, 2015) of the qualitative interview data.

Quantitative Pre-test, post-test 1 and post-test 2 intervention descriptive statistics (mean, SD, range) were calculated for systolic BP, diastolic BP, BMI, self-selected and fast gait speeds, while the median and mode were used with average daily fruit and vegetable consumption and average weekly minutes of physical activity.

Demographic information and pre-test data was compiled and reported with descriptive statistics (group means, standard deviations, ranges and p-values). Pre-test, post-test 1, and post-test 2-intervention changes were determined using two-way ANOVA with repeated measures for these dependent variables; weight, BMI, systolic BP

and diastolic BP, self-selected and fast gait measures. With the EATS fruit and vegetable consumption and IPAQ physical activity measures, *t* tests for group x time were used to measure change between the SCT and AE intervention groups.

Each of the seven dependent variables 1) systolic BP 2) diastolic BP, 3) BMI, 4) average daily fruit and vegetable consumption, 5) average weekly minutes of physical activity, 6) self-selected and 7) fast gait speeds, were analyzed with a repeated measures model. Included in this model were group (SCT/AE), time (pre-test, post-test 1, post-test 2), and interaction between the two. In this model, the main test of interest was the Group x Time interaction used to determine if a reduction in systolic BP and diastolic BP across time was more effective in the AE group than in the SCT group, as measured during the pre-test, post-test 1, and post-test 2 participant observations. Other tests of interest were Group x Time interaction used determine if an increase in fruit and vegetable consumption and physical activity were more effective in the AE group than in the SCT group. The LU intervention being tested, based on the SCT model, was previously found to result in a significant 11.8 $\pm$ 2.8 mmHg ($P < .001$) reduction in systolic blood pressure, increase in fruit and vegetable consumption ($P=0.001$) and increase in physical activity ($P=0.04$) (Ihab M. Hajjar et al., 2007). Since this was the first time that AE was adapted for use as a health behavior change model, this was designed as an exploratory study, therefore, we refrained from lowering the p-value for multiple inquires. With an effect size = 0.4, and an alpha of 0.05, we can expect is a power of 0.94 with an n=40 and 0.99 with an n = 58 per group for the main test of interest, reduction in systolic blood pressure (Thomas, Nelson, & Silverman, 2005). The alpha for all analyses was set at 0.05.

Pearson correlations were used to test relationships between systolic BP and diastolic BP, and average fruit and vegetable consumption, average weekly minutes of physical activity, BMI, self-selected and fast gait speed along with the relationships between average weekly minutes of physical activity and BMI, normal and fast gait speed. To determine if outliers existed that would impact correlations scatter plots were reviewed. All data analyses were conducted using SAS software, version 9.3 (SAS Institute Inc., Cary, North Carolina)

QUALITATIVE: GROUNDED THEORY CONSTANT COMPARISON Grounded theory (Glaser & Strauss, 1967; Strauss & Corbin, 2015) was chosen to discover the emergent reactions of the participants to the two different health behavior change approaches. The 34 interviews were digitally recorded and then transcribed by the researcher in NVivo for mac 10.1.3 (QSR International, Pty. Doncaster, Victoria, Australia) for coding and analysis using constant comparison with open and axial coding (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Strauss & Corbin, 2015). According to grounded theory, data analysis begins during data collection and continues in a continuous cyclical manner through data analysis and further data collection and analysis (Glaser & Strauss, 1967; Strauss & Corbin, 2015). In the constant comparison method, the data being coded was continually compared with all previously coded data and the categories where the data was sorted (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Strauss & Corbin, 2015).

The researcher used a question guide (Appendix M) for each interviewee. Notes were written on each question guide during all interviews. These notes were used during analysis and transcription to clarify any parts of the interview that were unclear in the recording. Each interview was transcribed, verbatim by the researcher. After

transcription, each interview transcription was emailed or mailed to the interviewee to member check. Only one interviewee requested a change that was made in the transcript.

The researcher carefully read through all transcripts, and field notes recorded during transcription, initiating the open coding (Strauss & Corbin, 2015) process for the early coding categories. Credibility was established with coder triangulation and member checking of the interview transcripts (Lincoln & Guba, 1985). The researcher and second coder used the ten questions as initial codes to start the constant comparison coding (Glaser & Strauss, 1967; Lincoln & Guba, 1985; Strauss & Corbin, 2015). The first three interviews were coded by both coders and then compared by the researcher. Using the constant comparison method (Lincoln & Guba, 1985; Strauss & Corbin, 2015), smaller units of transcript data were organized using content analysis that made sense to the researcher. These smaller units were organized to form exploratory categories. Through a process of continual comparison between the original coding categories being compared with new data, a detailed coding guide emerged. When coded interviews were compared, discrepancies were identified by the researcher, and then discussed with the second coder to add additional categories. Both coders agreed on the revisions to the coding guide and all transcript-coding revisions. This process was repeated with the next six interviews. The remaining 23 transcripts were coded independently and then compared by the researcher. All discrepancies were discussed with the second coder and agreed coding adjustments were made. The original codes were revised 11 times during the coding process by agreement between the two coders.

Once the initial coding was complete (Figure 3.2), the researcher began axial coding (Strauss & Corbin, 2015) to combine the codes into themes or categories. The

researcher looked at the theme commonalities that emerged from the interview question codes. The themes were collapsed into sub-themes (Figure 3.3 and 3.4) for the final analysis.

PILOT STUDY The effectiveness and clarity of the study methodology was developed through the use of a pilot study (van Teijlingen & Hundley, 2002). Since this research involved modification of an intervention, a pilot study was conducted with one class using the LU small group discussions, led by CHAs and the researcher, while the other class utilized the AE questions in partner interviews. Using these two classes as a pilot study, the researcher was able to test the clarity of the AE interview instructions and questions. The time, personnel and measurement instruments needed for completion of pre-test, post-test 1 and post-test 2 measures along with use of the digital recording equipment and procedures for the interviews were also worked out prior to the study.

3.7 DATA COLLECTION TIMELINE

This mixed methods study of community-dwelling older adults began on March 13, 2012 and ended on November 29, 2012. Three sets of two LU courses (one group served as the control and the other as the experimental group) were offered during the spring, summer and fall of 2012.

Pre-test data was collected one week prior to class one (Table 3.1), while post-test 1 data was collected on the last day of each course, class 6 (Table 3.1). Post-test 2 data was collected on five dates (Table 3.1) between six to 18 weeks after post-test 1. Qualitative interviews for both SCT and AE courses began on April 8, 2013 and ended on May 16, 2013.

All classes were on either Tuesday or Thursday of the same week throughout this study. Since these LU courses were offered to the community at no cost, traditional randomization of the study participants was not incorporated. During the initial course offering of the two spring courses offered March – May, 2012, participants selected the day on which they enrolled. . All participants who registered for the Tuesday course received the control SCT intervention while experimental AE intervention was administered during the Thursday course. During these two courses, there were several requests from participants to attend class on the alternate class day, which was not permitted. The result was a reduction in the number of classes that some participants completed. In order to avert this situation during the summer and fall course offerings, both summer courses were the SCT control intervention while the two fall courses were the AE experimental intervention. Offering the courses with this format permitted participants to attend either the Tuesday or Thursday class, on occasion.

Since the timeframe for these courses and post-test 2 data collection dates overlapped, the post-test 2 data collection for the spring class was delayed. The first spring participant post-test 2 data collection took place 18 weeks after post-test 1, which exceeded the intended 6 weeks from post-test 1. In order to have as much post-test 2 data as possible, the 9 spring course participants who were unable to attend the initial post-test 2 collection date were invited to come to the summer course post-test 2 data collection which was seven weeks after the summer post-test 1 collection. Six of the nine participants completed post-test 2 on the summer data collection dates. The fall courses data collection was completed 6 weeks after the fall post-test 1 collection.

The spring course time was 9:30 am – noon. Since BP and weight measures began at 8:45 am, prior to each class, the class starting time of 9:30 am was too early for many participants. Participants would arrive for the start of class between 9:30 -10 am and request that these readings be taken while class had already begun. Participants who arrived on time for class found this practice disruptive. As a result, the summer and fall course time was changed to 12:30 – 3 pm, with BP and weight measures beginning at 11:45 am.

Since these courses were offered at no charge to the community by the local senior center and they continued to be offered after the last course in this study, there were participants who enrolled in more than one course. In order to avoid the potential influence from multiple intervention exposures, the quantitative data analysis includes measures from only the first class in which the participant enrolled. Information from the participants who completed multiple classes was collected during the qualitative interviews, by including additional questions regarding the effect of attending the additional course(s).

Table 3.1 Lifestyle University Study Timeline

	Day of Week	Pre-test	Class 1	Post-test1	Post-test 2	Interviews
Spring (CSC) Control	Tuesday	3/6/12	3/13/12	5/22/12	9/28/12 started	4/8/12 started
Spring (AE) Experimental	Thursday	3/8/12	3/15/12	5/24/12	| |	| |
Summer (CSC) Control	Tuesday	6/19/12	6/26/12	9/4/12	10/23/12	| |
Summer (CSC) Control	Thursday	6/21/12	6/28/12	9/6/12	10/25/12 ended	| |
Fall (AE) Experimental	Tuesday	9/11/12	9/18/12	11/27/12	1/8/13	| V
Fall (AE) Experimental	Thursday	9/13/12	9/20/12	11/29/12	1/10/13	5/16/12 ended

Bloom, J. L. (2008) *Moving On. Academic Advising: A Comprehensive Handbook,* 2nd edition

Figure 3.1 The Appreciative Cycle

1. Prior class experiences
   - 1.1 Health Behaviors
   - 1.2 Perspectives
2. Things learned (are health behaviors and different perspectives) from LU class
   - 2.1 Health Behaviors
     - 2.1.1 Reduce intake
     - 2.1.2 Increase intake
     - 2.1.3 Increase exercise, PA
     - 2.1.4 Materials & info to take home
     - 2.1.5 Portion control
     - 2.1.6 Change in purchasing
     - 2.1.7 Recording & self-monitoring
     - 2.1.99 Other
   - 2.2 Perspectives
     - 2.2.1 Relationship between behavior & health
     - 2.2.2 Introduction to new concepts
     - 2.2.3 Enjoyment of applying what they learned
     - 2.2.99 Other
3. Things that helped you make life changes from LU class
   - 3.1 Health Behaviors
     - 3.1.1 Increase healthy food choices
     - 3.1.2 Trying new foods
     - 3.1.3 Portion control
     - 3.1.4 Recording & self-monitoring
     - 3.1.5 Label reading
     - 3.1.99 Other
   - 3.2 Perspectives
     - 3.2.1 Nutrition content
     - 3.2.2 Food preparation
     - 3.2.3 Physical activity content
     - 3.2.4 Stress management content
     - 3.2.5 Medication management content
     - 3.2.6 Trying new foods
     - 3.2.7 Portion control
     - 3.2.8 Remember info covered in class
     - 3.2.99 Other
4. Before & After
   - 4.1.1 Nutrition
   - 4.1.2 Physical Activity
   - 4.1.3 Stress Management
   - 4.1.99 Other
5. Changes in life after taking LU class
   - 5.1 Health Behaviors
     - 5.1.1 Portion control
     - 5.1.2 Increase healthy food choices
     - 5.1.3 Self-monitoring
     - 5.1.4 Label reading
     - 5.1.5 Exercise, PA
     - 5.1.6 Stress management
     - 5.1.99 Other
   - 5.2 Health outcomes
     - 5.2.1 Physical
     - 5.2.2 Mental, emotional
     - 5.2.99 Other
6. Hardest things to change during LU class
   - 6.1 Health Behaviors
     - 6.1.1 Give up or reduce unhealthy food choices
     - 6.1.2 Self-monitoring
     - 6.1.3 Healthy food practices
     - 6.1.99 Other
7. Easiest things to change during LU class
   - 7.1 Health Behaviors
     - 7.1.1 Increase healthy food choices
     - 7.1.2 Self-monitoring
     - 7.1.3 Increase exercise, PA
     - 7.1.4 Increased socialization
     - 7.1.5 Healthy food practices
     - 7.1.6 Physical techniques
     - 7.1.7 Stress management techniques
     - 7.1.99 Other
8. Effect of small group activities on making life changes
   - 8.1 Health Behaviors
     - 8.1.1 Self-reflection & goals
     - 8.1.2 PA, walking
     - 8.1.3 Taking action toward goals
     - 8.1.4 Time for stress reduction
     - 8.1.5 Improved sleep habits
     - 8.1.99 Other
   - 8.2 Perspective
     - 8.2.1 Peer perspectives
     - 8.2.2 Self-awareness & reflection
     - 8.2.99 Other
9. Any other affects on your life from LU class & Additional comments
   - 9.1 Health Behavior
     - 9.1.1 Meal prep
     - 9.1.2 Exercises, PA
     - 9.1.3 Advertise & encourage class to others
     - 9.1.4 Stress management skills
     - 9.1.99 Other
   - 9.2 Perspectives
     - 9.2.1 Enjoyment & enthusiasm
     - 9.2.2 Socialization
     - 9.2.3 Peer perspective
     - 9.2.4 Hope for the future
     - 9.2.5 Meditation
     - 9.2.6 Making these changes is hard
     - 9.2.7 Learning new information
     - 9.2.99 Other
10. Results
    - 10.1 Health Behaviors
      - 10.1.1 Nutrition
      - 10.1.2 Physical Activity
      - 10.1.3 Stress Management
      - 10.1.99 Other
    - 10.2 Health Outcomes
      - 10.2.1 Physical
      - 10.2.2 Mental, emotional
      - 10.2.99 Other

Figure 3.2 Codes and Descriptions by Question Version 11

CHAPTER 4

RESULTS

The purpose of this study was to compare the effectiveness of two health behavior change models, SCT and a novel approach, AE, in lowering systolic and diastolic BP in community-dwelling older adults using the established Lifestyle University intervention. Ninety-three people enrolled in the six Lifestyle University courses offered during 2012. The research questions were 1) Is the Appreciative Education approach more effective than the Social Cognitive Theory approach in promoting health behavior change when applied to an educational intervention in older adults to control hypertension? 2) How do participant perspectives and health behaviors after the intervention differ between the Appreciative Education approach and Social Cognitive Theory approach?

4.1 SAMPLE AND DEMOGRAPHIC ANALYSIS

The sample completing the pre-test for this study was comprised of 60 (65%) control (CBC) and 33 (35%) experimental (AE) group participants. The majority of this sample was white (62%; n = 57) and female (85%; n = 79). In this educated sample, (87%; n=80) of participants attended at least some college and the majority of household incomes were more than $25,000 (63%; n = 53). Demographic characteristics of the sample and groups are listed in Appendix N. There were no statistically significant differences between the groups based on gender X^2 (1, N = 93) = 1.422, p = 0.233, race

X^2 (1, N = 92) = 0.062, p = 0.804, marital status X^2 (3, N = 92) = 4.455, p = 0.216, income X^2 (1, N = 83) = 0.192, p = 0.661 or education X^2 (1, N = 92) = 0.130, p = 0.91.

The sample average age was 71.0 years (SD = 9.1), with a range of 50 – 98 years. An independent-sample *t* test failed to show a statistically significant difference between the mean ages of the two groups, *t* (93) = 0.75. The threshold for graduation from the Lifestyle University course was attendance during at least 5 classes, which was accomplished by 56 (60%) participants. Those who attended at least 5 of the 6 classes during this 12-week intervention will be referred to as completers. Of the 93 people who completed pre-test measures 37 (40%) dropped out prior to post1 data collection, and the drop out rate was not statistically significant between groups X^2 (1, N = 93) = 1.616, p = 0.204. When all pre-test drop out and completer measures were compared, no significant differences were found. Fifty-two (56%) subjects from the sample finished post-test 1 on the last day of the course while 42 (45%) returned for post-test 2 measures. Appendix O illustrates the flow of participants through this study.

4.2 Results Related to Research Question 1

The first research question was designed to investigate whether the appreciative education approach was more effective than the cognitive behavioral change approach in promoting health behaviors and improving health outcomes when applied to an educational intervention in older community-dwelling adults to control hypertension. The primary outcome measures were lower of systolic and diastolic blood pressures, and BMI with an increased fruit and vegetable intake, physical activity, self-selected and fast gait speed. The statistics used to answer this question included Pearson correlations and

repeated measures ANOVAS model, with the main test of interest, Group x Time using SAS version 9.3 (SAS Institute Inc., Cary, North Carolina).

Distributions of all variables were examined for outliers and non-normality. On the IPAQ, one person scored 6090, 20586 and 11676 on the pretest, post-test1 and post-test 2 respectively. The maximum IPAQ score for anyone else at any time was 11466. The 20586 observation was dropped from the analysis. On the EATS, one participant scored 16.19, 3.96, and 2.49 on the pretest, post-test1 and post-test 2 respectively. The maximum EATS for anyone else at any time was 9.12 (6.17 on the pretest). The 16.19 pretest observation was dropped from the analysis.. In the IPAQ data, all participant entries containing no response or physical activity were removed from the data analysis (discussed in chapter 5). One outlier in the EATS pre-test data, not consistent with subsequent measures (16 average daily fruit and vegetable servings) was removed. Even after removal of outliers, the normality of these two distributions did not improve (discussed in chapter 5).

CHANGE IN VARIABLES Descriptive statistics (group means and standard deviations) for systolic and diastolic blood pressure, weight, BMI, self-selected and fast gait at pre-test for the sample and by treatment group are presented in Appendix Q. There were no significant differences in the pre-test outcome measures between groups.

As shown in Table 4.1, there was a significant group X time interaction for self-selected (p=0.0002) (Figure 4.1 and Figure 4.2) and fast gait (p=0.002) (Figure 4.3 and Figure 4.4) measures. Table 4.2 shows the number of participants from each group who increased their gait speed by at least 0.10 meters/sec between measures. There were interaction differences in both self-selected (F=[1,50] 9.4; p=0.004*) and fast gait

(F=[1,50] 8.4; p=0.006*) between pre-test and post-test 1. There were no significant interaction differences in these measures between pre-test 1 and post-test 2. There were no significant differences in the group X time interactions for the other variables (Table 4.1 and Table 4.3). Mean systolic BP (Figure 4.5) and diastolic BP (Figure 4.6) did decrease over time. There were no significant differences by group for any variables. The only correlation found at post-test 2 was an inverse relationship between systolic blood pressure and IPAQ scores (r_s = -0.40, p = 0.008). The mean systolic and diastolic blood pressures decreased (Table 4.4) for both the SCT and AE groups. The EATS scores increased in the SCT and AE groups (Table 4.4).

SUMMARY QUESTION 1 RESULTS The AE approach was not found to be more effective than the CBC approach in promoting health behaviors and improving the health outcome measures of lowering weight, BMI, systolic and diastolic blood pressures or increasing physical activity, fruit and vegetable consumption. However, the AE approach was more effective than the SCT approach in improving the health outcome measures of increasing self-selected and fast gait speed.

4.3 RESULTS RELATED TO RESEARCH QUESTION 2

The second research question sought to identify differences in participant perspectives and health behaviors between the Appreciative Education (AE) approach and the Social Cognitive Theory (SCT) approach after the intervention. Thirty-four participants were interviewed, all 16 of the AE completers and 18 of the SCT completers. Since there were 29 SCT completers, the eight who had the greatest and the least reduction in systolic and diastolic blood pressure between pre-test and post-test 2, who agreed to an interview, were included. Two of the 18 control SCT completers also

attended the experimental group AE course. Demographic characteristics of those interviewed are in Table 4.6. There were no statistically significant chi square differences between the groups on any of the demographic measures.

Semi-structured interviews began on 4/8/12 and ended on 5/16/12. Most interviews were conducted at the senior center were the majority of the classes and the follow-up measures were completed. Four interviews took place off site with three in participant homes and one at a restaurant. The researcher administered all interviews using an interview question guide (Appendix M). The interviews were digitally recorded and transcribed verbatim by the researcher. Transcripts were then emailed to all interviewees for member check.

Grounded theory approach (Glaser & Strauss, 1967; Strauss & Corbin, 2015) was used to analyze the interview data. The researcher initiated code development during transcription and transcript reading using an open coding (Glaser & Strauss, 1967; Strauss & Corbin, 2015) process. The researcher and second coder continued to update the by question code and description log using the constant comparison method (Lincoln & Guba, 1985) agreeing on all modifications (Figure 3.2 was the 11th version of this log). Each coder coded all interviews separately, all coding differences were compared and discussed, resulting in both coders agreeing on all coding. Once coding by question was complete, codes were separated in Nvivo by SCT and AE group. Next similar codes from each question were combined in an axial coding (Glaser & Strauss, 1967; Strauss & Corbin, 2015) process, where the three perception and four health behavior themes emerged (Figure 4.7 and Figure 4.8).

The differences that appeared between the SCT and AE groups were generally related to the small group activity segment of the intervention. The SCT group referred to the importance of peer influence while the AE made little reference to this theme. The AE group talked about health relationships and goals with a different awareness than the SCT group, which was reflective of the small group activities.

When the interviewees were asked about their perception of the relative importance (not at all, somewhat or very important) of eating fruits & vegetables, regular physical activity, walking speed, blood pressure, lower BMI and diary recording, before and after the class, their responses were similar. The chi square test found no statistically significant difference between their responses. Table 4.7 contains counts and percentages for each response by group.

Perspectives are an indication of how participants viewed the course in relation to health behavior change in themselves or others. Three perspective themes were identified: 1) peer influences, 2) health relationships, and 3) enjoyment. Participant perspectives were different in relation to the small group segment of the course as shown in Table 4.8 and Table 4.9 perspective difference quotes. These differences are illustrated in the first 2 themes, peer influence and health relationships. The control SCT and experimental AE responses reflected the respective theoretical basis for the small group activities segment of the course. The final perspective theme, enjoyment, was found to be similar in both groups.

4.4 Perspectives Theme 1: Peer Influence

The small group segment of the SCT control group classes were designed to be group discussions, led by CHA's, with a specific focus for each of the four small group

sessions: 1) goal setting, 2) benefits and barriers, 3) successes and solutions, and 4) staying on track. The intent was for the CHA to encourage participants in sharing how they were doing with recording their food consumption, physical activity, stress management and medication management in relationship to the goals they set for themselves during each class. The success of each discussion was highly dependent on the skill of the CHA in leading and monitoring this discussion time, limiting the talkers and encouraging the quiet listeners to participate in the discussion. The resulting theme, peer influence illustrates the influence of other participants as they interacted during small group discussions about their progress in making lifestyle changes. Three sub-themes emerged: 1) advice and ideas, 2) challenges and support, and 3) successes.

ADVICE AND IDEAS Participation in small group discussions of three to six people provided a venue for participants to ask questions and exchanging ideas. This was dedicated time where an individual could seek assistance from a CHA or other group members. For the talkers in the group, this was their time to share their experiences and opinions, especially when the CHA was not effective in keeping the discussion group on topic. The talkers gave opinions and advice to members of their discussion group (Table 4.8). These quotes in this sub-theme are in response to the inquiry "During these classes we had small discussions with a community advisor. What if any affect did this part of the class have in making changes to your life?" One participant who found it helpful to listen for new ways of doing things describes her experience this way:

> Well, the different opinions of different people gave me more ideas of a, you know, what you should do and how you should go about doing it. (So that was helpful for you.) Um huh. (SCT-31Sp)

Another group member found the CHA's to be beneficial:

> I like the discussions as well, I liked having them (CHAs) there, since they were a, knowledgeable and they had all of that knowledge to share, so that was good. I enjoyed that. It kinda made, made it a little more personalized I guess maybe. (SCT-34Su.F)

This participant did not find the CHAs to be helpful:

> The only part of the group discussions that I really felt like were helpful were the a, the discussions with the group leaders rather than with the a community resource (CHA) people. (SCT-48Su)

This participant recalls a discussion that was not intended as part of the class content, one about supplements, which she found beneficial:

> Well, we talked about supplements, I think, a different supplements that you could take, a, you know, a, I'm thinking of turmeric, we use that for inflammation of joints. A cur cumin, another one we used, and the health expert was telling us, you know about drugs and instead of using, taking drugs, different supplements that we could include in our daily nutrition (SCT-38Su)

CHALLENGES & SUPPORT Establishing new habits is not easy, even when a person wants to change. Writing down everything eaten each day, physical activity participation, stress management practiced, and blood pressure readings is challenging. This participant found comfort in listening to her peers as she realized that others in her group were experiencing similar challenges:

> It (small group discussions) played... a very big part, sharing with others (you liked a, sharing a, what was happening with you and hearing what was happening with others) Yes (you a learned from other people because of what they were conquering) No a, because a, mostly a, because they are at the same, similar problems, a like high blood pressure, a hard time exercising, and also relaxation (You learned that you weren't alone) Right (SCT-62Su)

Only a few references to peer interaction were made in the AE group. This participant commented about how she learned to handle situations about food differently from other members of her small group:

> The interaction with the, my classmates… the interaction with the… ones that was in my group, and how they were handling different situations, concerning the

> food (that was really helpful for you) Right, right (You learned from the other a, participants) Right. (AE-08F)

The challenges associated with making these changes seemed less ominous when participants could talk with other class members about their similar struggles (Table 4.8).

SUCCESSES Since making changes is challenging, participants appreciated having a place where others understood the significance of lifestyle changes they were making. This participant, who was highly successful, (lost 42 lbs. between pre-test and post-test 1) appreciated having a small group that followed his progress:

> It was, it was good to, to have the same people there from week to week, or bi-weekly, the a, semi-weekly, but anyway, every few weeks, and a, to see them being up with my progress. (SCT-48Su)

This participant liked hearing how other participants were progressing as she acknowledged the successful changes she and others made during the class:

> Well it was pretty enlightening to see how others were operating, which was already shittier than mine. I think we've all improved… when you realize that even though someone else had bad habits that you have, then you're more conscious of it and you're curtailing it. And so now when I'm offered that third glass of wine, I'm not going to say that I say no to the second…But if I'm offered the third, except maybe twice a year, I have said no. (would you say it was the peer influence?) Yes (SCT-05Su)

Some participants really liked hearing about the successful strategies that other class members used to help them make changes (Table 4.8).

The control SCT group participants found the focus of the small group beneficial as it provided a place to get new ideas from other participants about how to make changes, a space to discuss the challenges they encountered and support for those who were successful in applying what they learned in class in helping make lifestyle changes.

4.5 Perspectives Theme 2: Health Relationships

The small group segment of the AE experimental group classes was modified after the pilot class. The AE four small group session topics were: 1) discovery, 2) dreams, 3) design, and 4) delivery. The format for the pilot group focused on pairs of participants asking each other questions related to the four topic areas. Each participant in the pair ask questions (Appendix K) and recorded their partner's answers to the questions, then the process was reversed. Following this activity, the researcher facilitated a group discussion focused on the questions from their pair interviews. Based responses from class feedback forms and verbal comments from participants in this class, this small group activity time was changed. Participants were uncomfortable asking and answering these questions with another member of the class, with whom they knew little about. Before the next set of experimental classes, the researcher consulted with Dr. Jenny Bloom, author of several books on appreciative approach to advising and education. With Dr. Bloom's guidance, the small group process was modified to include a "get to know each other" trust building autograph hunt activity in addition to other activities where participants wrote answers questions on worksheets (Appendix M) followed by sharing some of their responses with the class. The researcher moderated this process and discussion.

This health relationships theme emerged almost exclusively from the AE experimental group interviews. This is a reflection of distinction between the SCT and AE small group activities, which differed in theory, structure, and activities. The AE focus on was guiding participants through a process were they got to know each other before identifying their personal dreams and goals apart from their weekly health

behavior change goals. The aim of subsequent activities was to build a bridge between these two types of goals and to help participants discover how their personal health impacts their ability to meet their personal goals. The four sub-themes identified were: 1) bucket list, 2) reflection, 3) taking action, and 4) noticing the connections.

BUCKET LIST The first and second sub-themes, bucket list and reflection, were introduced during an activity from class three, inspired by the movie Bucket List. During this small group activity, participants were asked to answer questions about unfulfilled goals, dreams or relationships that they were interested in pursuing. This time for reflection was the first step in building the connection between how health impacts our ability to fulfill our goals and dreams. When asked about this activity during the small group part of the class, this interviewee talked about how what she thought she could do was related to expanded possibilities and choices:

> I think maybe making the bucket list, because that kind of helps you, again I guess it goes back to choices, you know, that you have, that there are things out there that you can choose to do, rather than just sit and wonder if that's something that you want to do really or wonder if it's something you could do. And it sort of, I, I, think widens my focus. That there other things out there that, that I, I, know I can try, you know. (So it was a, expanding I, possibilities for your experiences in life.) Yes, yes. (AE-42F)

Though the process of the bucket list activity, this participant rekindled her desire of being a movie extra:

> (During the classes… we had you… make a list of things that you wanted to do. What if any affect did that part of the class have on you actually making changes in your life?) I went to the library and I looked up Hollywood, and all I could see on there were like you could take a tour of Hollywood and hotels you could stay at. (asking you to do the bucket list and make those things, it has gotten you to think about other things in your life that you were thinking about before) Yeah, yeah And I was an extra in a movie one time, you know, years ago, and, and, and, some other movies, but I was cut out, I don't know if you remember the Renaissance Man, do you remember that movie? (AE-02F)

Later on during the interview she elaborated on what it was like being an "extra" in several movies, and explained exactly where she was in the movie, Renaissance Man, so I could see her in the movie! Prior to this class, she had forgotten about how much she enjoyed that experience and her dream to be an "extra" in additional movies.

When asked about the small group section of the classes, this interviewee references the impact that the bucket list and other activities had on the way she reflected and examined her daily activities.

> Anytime I think you have a class where you have a, a setting, and especially when you have older minds and not always the case, they has to be some flexibility to maintain a, the, attention span. And what happened was after an hour or an hour and a half, sometimes your attention span can change and the fact that we had constant changes, we had frequent changes, with the bucket list, again, it makes you think, it made you sit down and think about things... expanden your thirst for getting more information and identify those things within yourself that you need to reevaluate, that's a, that's a major issue, that was really emphasized in the class. Looking at things that you do every day. (AE-57F)

REFLECTION The second sub-theme reflection, in and of itself does not lead to change. This interviewee in response to "Tell me about any changes you noticed in your life after taking this class" admitted that she knew that she needed to make changes since she was overweight and hypertensive yet she just didn't make the changes.

> (The class) It has made me very much aware of what I need to do. Now if I just would do it. (What would it take for you to actually make some changes?) I don't know, probably when I get weighed probably. [laughter] (Weighing yourself on a regular basis isn't something that you do. [laughter]) Right, no it's not something I do And so… and when I go to the doctor, that's the main thing, (I've got to loose weight) [spoken in a whisper] and I've got to in two weeks so [laughter] (AE -27Sp),

There were participants who made changes after reflection. This interviewee, when asked about her small group experience, explained how she took care of those around her and not herself. Her husband threatened to leave on several occasions. This

time, she didn't argue with him or worry about him as she practiced what she'd learned about stress management. She changed her perspective and priorities to take better care of herself.

> I quit, I quit worryin, I quit worryin about (her husband) and was see he did that last time he said I, you know, I'll just leave and I said okay and that's when he left and things are a whole lot better. (And that just recently happened?) That was in, New Year's Eve he moved out. This past December 31st. (So that, that's a changed since the end of class.) Um hu. And I was keepin that, well, the 5 year old great grand and, you know it was up to me if, if I had something to do, I'm the one tryin to call em and get a babysitter or somebody else to pick her up, and I told em, I said, unt u, I'll tell you when I'm gonna to be home or when I've got to go somewhere and you can find your brother or a neighbor or, you know, a Ashley's dad, cause they aren't married, or somebody to pick her up there, cause I'm not gonna tie myself up completely, and I was. (So you changed your priorities in your life) Yes I did. (AE-65F)

TAKING ACTION With the third sub-theme taking action, new perceptions about what was possible were reported when participants were asked "What if any affect did that part of the class (small group activities) have in helping you to make changes in your life?" This first response illustrates how finding out the length of a marathon assisted this participant in evaluating her goal and the need for additional small steps in preparation for her participation in an event.

> Well on the bucket list I put that I wanted to walk for a marathon and I found out how long a marathon [laughter] well but I do want to do one of those walking events, and I still want to do that. And I've been asking around, and my friend's daughter does those, so she's gonna contact me and let me know about the one's that are comin up, so I have time to get myself together for it. Cause I can't just get out there one day and do it all (AE-20Sp+)

In response to the same question, this interviewee's change in perception resulted in her taking local trips to various outdoor venues:

> Well, now every opportunity I get, I go on a trip, you know. I think, what ever, and I do it. As a matter of fact this Friday, I'm going kayaking. Last weekend I took a walk in the forest in Santee National Wildlife Refuge. (So it helped you be more proactive in) Taking trips…local trips, not out of state, day trips. (AE-53F)

In contrast, this participant from the control group refers to his perspective about taking action in preparation for his upcoming stress test. His response is to the question "Can you tell me about the best things that you learn from Lifestyle University class?" This reference is reflective of his other attempts to make changes in his life. He looses weight then gains it all back. Starts walking, but then stops, his perspective is, walk just before the stress test so it will be ok.

> And but now I've gotten back into a walking routine, I do it about every 2, 3 days, and I want to make that even better because I have a stress test coming up the end of the month So I have to get in shape otherwise they'd turn it on a say whoops that's all (laughter) not going any further with this thing. (SCT-75Sp)

A change in perspective does not necessarily the result from repeatedly attending this course. This participant took Lifestyle University 4 times before this research study. When asked to "Tell me about any changes you noticed in your life after taking this class" she talks about learning new things, enjoying taking the class, starting to make changes yet not sticking with those changes.

> I loved takin that class, I mean I, you know, had so much fun and I always get something out of it, but, unfortunately I don't keep it up, but I'm gonna try to. I've always, I keep sayin that but I haven't yet, but I'm goin to one of these times [laughter] if it kills me [laughter]. (How many times have you taken the class before?) Oh, I think, I took it all together 4 times, I think. (AE-39F)

NOTICING THE CONNECTIONS The fourth sub-theme emerged when connections were made between goals and dreams, after reflecting and taking action. The participants, who changed their perspective about their health, felt the way their lives were different because of putting into practice, what they learned about how to improve their health. Some participants became aware of the relationship between how health impacts their ability to accomplish their goals and dreams. This participant attended both

the SCT control and the AE experimental course when asked about the small group activities during the AE course she said:

> I thought it (bucket list) was fun. I enjoyed doing it and a, it made me aware that there were things that I wanted to do and get done and a, I needed to get busy. [laughter] (Okay, so, more than anything else, a, it, it raised your awareness of the relationship between your life and your health. Would you) I agree. To do all of these things you have to be healthy. (SCT-34Su+AE)

The next two quotes are in response to the question "Can you tell me about the best things that you learn from Lifestyle University class?" When this interviewee changed what she was eating, she could feel the difference.

> The best things I learned were how to eat so that it was great for my health and it helped me to feel better. (AE-11Sp)

Hypertension is impacted by exercise, or lack thereof, and eating prepared foods high in sodium. This participant noticed the connection between her elevated blood pressure and the changes she made in her life:

> I was wondering why I had high blood pressure, and I think it was coming from the salt that's in the food that I was buying. I wasn't adding salt but I kept having problems with blood pressure. I also learned that if I exercise more, the blood pressure problem will go away, or go down for that day and since then I have been doin a whole lot better, my blood pressure's been really good when I go to the doctor. (AE-20Sp+)

Later during the interview she went on to say that:

> I know that I need to be healthy in order to do things that have on my bucket list. Cause if I'm not healthy, I wouldn't enjoy doing, on going those places. Wouldn't be able to walk around if I don't keep my walk up. Cause, when you, when you, go on a trip and do the touring, especially when you're walkin around, you get in a lot of walking miles…Cause, we, we took the a, this was after that first class with you, we took the girls, I'm a Girl Scout leader, we took em to Florida, to a, Disney World. And we walked around all day long, it seemed like, and I, I had over 10,000 miles on those days we were down there. So I thought, you know, if I had been keep doin this before, I wouldn't be able to keep this up today!

When this participant, a retired RN was asked "Is there anything that I haven't asked you, that, you'd like to tell me about, how the class affected your life" she explains how the class helped her notice the relationships between lifestyle and health challenges in her own family. Her intention is to share what she has learned with others so they can learn that by making different lifestyle choices, they can improve their quality of life, just like she has.

> I can, transfer those changes over to family members that are having problems or that are not having problems. Your example, you know, that you said that you have family members that have physical problems due to lifestyle and you have the, the, choice of continuing on and being them when you get there, or you can make the choices now to do something different. And I, you know, I can, I can reinforce to my family members because I've got a sister that just had open heart surgery and maybe, you know, if, if, she had done something's different, maybe she would not be were she is. Her husband is in end-stage renal failure, unfortunately, and if he had done some things differently, you know, maybe he would be different. So I've got some examples, some serious examples of things that can happen when you don't pay attention to your health. So those kinds of things just kind of, I guess, widened my focus of things that I need to, to, look at, not just for myself but, for my family, yeah. (AE-42F)

The perspectives of the AE group differ from those of the SCT group. The bucket list activity and reflections paved the way for new perspectives about taking action in addition to noticing the connections between personal goals and dreams and goals associated with health behavior change. Noticing the connections reinforced participants desire and resolve to make new choices as they changed their perspective about modifying their eating, physical activity, stress management. The awareness of new possibilities helped contribute to hypertension control.

4.6 Perspectives Theme 3: Enjoyment

This final perspectives theme enjoyment is one that was similar in the SCT control and AE experimental groups. The companionship, activities and content of the

LU course contributed to this perspective. When the next two participants were asked "Can you tell me about the best things that you learn from Lifestyle University class?" this interviewee talked about the content as well as the blood pressure monitoring.

> I enjoyed of course the exercise, and the health tips. I'm getting my blood pressure taken which I don't usually except once a year when I get my physical. (SCT-05Su)

This participant found the label reading activity to be interesting as well as enjoyable:

> I think the most interesting thing to me was taking time to read on the different things in the grocery store before I purchase. (So reading the labels)… Yeah. That was just too interesting I really enjoyed that. I had no idea things, so many fascinating things were (laughter) right there before me and I was just buying, taking home, having a great time, and hum, a, but after coming here it bothered me, the difference, you know...Oh yea. And I been trying to keep it up. (SCT-84Su)

Referring back to the theme two's bucket list sub-theme, this participant expresses her enjoyment of this small group activity.

> It, it caused, the class, caused you to be very enthusiastic about the class, and you look forward to, okay, lets look at this bucket list, and let me look at what I think about I want to do, it really was enjoyable, very enjoyable. And enthusiasm and also expanden your thirst for getting more information and identify those things within yourself that you need to reevaluate, that's a, that's a major issue, that was really emphasized in the class. Looking at things that you do every day. (AE-57F+)

Later on in the interview when asked if there was anything else from the class that affected her life, she shared how much she enjoyed the structure, speakers, activities and content of the course.

> Also the class I think made you more enthusiastic, you know, you hear about people talking about nutrition, talking about food, readin labels, watchin what you eat, keep track of what you eating, say, oh God, that's so boring and now it's, it's not. It, it's challenging, okay. A, I thoroughly enjoyed the class, I enjoyed your presentation, I enjoyed the foods that we had, some days I didn't know what it was, but you explain it, very interesting, okay. A, I love the way that the class

> was a, you had different speakers that came in, and talked about different subjects. The time period went by very quickly. It was a class that I looked forward to coming to. It was really a very, I thought it was very dynamic class really.

When the next two participants were asked "Is there anything that I haven't asked you, that, you'd like to tell me about, how the class affected your life", an interviewee shares how companionship, health practices, experiencing the benefits of these practices in her life and seeing beneficial changes in others contributed to her perspective.

> I thought the, the companionship, I thought all the practices of, of walking, of, having a specific thing to do was not only enjoyable and good for me but I could see the benefit in some of the others there (you like seeing the changes that other people made) Um hu…Yeah I thought the whole thing was worthwhile (SCT-05Su)

This interviewee told the researcher how much she enjoyed the class and meeting new people:

> I enjoyed the class immensely. One benefit that wasn't on the questions was the interaction of the people that were there. Meeting new people and talking to them and a, anyway, that was fun. (AE-51Sp)

Enjoyment was a surprising perspective theme for a health behavior change intervention. Participants enjoyed the course as well as the components of content, structure, speakers and activities. The course also provided a venue for the participants to meet new people and experience companionship with others interested in learning about how they could improve their health.

In summary, perspectives resulting from the difference between the SCT control and AE experimental groups were distinctive. The SCT response emphasis was on the impact that peer influence had on making health behavior changes, while the AE focus was on the influence that healthy behaviors had on their ability to fulfill their personal

goals and dreams. The perspective of enjoyment of the class and various components was similar in each group, suggesting effective course content and structure.

4.7 Health Behavior Theme 1: Accountability

The intention of the second part of this research question was to determine if there are health behavior differences between the SCT and AE groups. The analysis found responses from both groups to be similar. Four health behavior themes emerged: 1) accountability, 2) consumption changes, 3) learning aids and activities, and 4) other behavior changes.

The cornerstone of successful implementation of the LU intervention is the journal. Each participant received a journal where they were instructed to keep a daily record their of the food and beverages they consumed, physical activity they engaged in, stress management techniques that they used, the medications they took in addition to their blood pressure readings. This "homework" was identified as one of the hardest things to do from the class. Participants who took the time to maintain their journal tended to make changes in the areas they recorded. The intent of this activity is to bring current health behaviors into conscious awareness. This first behavior change theme accountability was associated with this activity. Three sub-themes emerged related to accountability: 1) food, 2) physical activity, and 3) blood pressure.

Food The first sub-theme illustrates the challenges and benefits of keeping a daily record of food eaten. When the next two interviewees were asked "Can you tell me about the best things that you learn from Lifestyle University class?" a participant responded this way:

> A… probably keeping a record that was the hardest thing for me. One is, I don't like writing. Second, after my strokes writing was difficult for me, you can't read it [laughter] And I kept dropping the pencil. So, I have some issues with writing and, and having, and then I didn't want to be accountable, even to myself, even to myself, even if nobody else was going to look at it except me, I didn't want to be accountable to me. So I think that was probably, bittersweet because I like, I was, it was important for me to learn, I did not enjoy it. (SCT-79Su+AE)

This participant enrolled first in a SCT control course then returned to take the AE experimental classes during this research in addition to attending prior offerings of the LU course. It took her several years before she was willing to admit that she didn't want to be accountable to herself, quite a realization. She didn't enjoy doing the activity yet recognized how important it was in changing her health behaviors.

This interviewee acknowledges the challenge of eating vegetables and fruits with busy lives and increased restaurant dining. She also admits knowing how to choose what's best for her to eat, when eating out, even though she doesn't always make that choice.

> And then the emphasis on things like vegetables and fruits that we all that we need, but many times don't get, due to a busy lifestyle. So that's, that the emphasis on that, has kinda stayed with me, in fact to the point that every time any of us eat anything together we always toast Mary Katherine when its something bad [laughter] that we know we're not sposed to have. [lots of laughter] and we check out every time we go into a restaurant to see if you are there. But (another participant) always says that she wouldn't be caught dead in a place like this, so we know we're safe! [laughter] But we have fun with that. (AE- 42F)

The first sub-theme food is evident in this participant's response to "What helped you the most from class in actually making changes in your life?" she replied:

> I started out very well, with watching the diet, controlling portions, a drinking more water. I didn't stick with it more than about a month. I just regret that. I'm going back, and trying it again. I did lose some weight, when I visited my daughter, and there were no things to pick up and nibble on. And I'm going to try to hold on to that of how long that, it's not a lot, about 3 pounds. And then the idea is the nutritious food. I used, when I eat here by myself I have fresh veggies,

> but I do eat out a lot with my daughter-in-law and you can't control much when you eat out…(SCT-73Sp)

She started to make changes that were short lived, yet she did recognize that her habit of nibbling at home and eating out were counter-productive to her initial success. This participant also realized now snacking was impacting her ability to succeed in making changes. The difference between the two is that even though writing down what she ate was one of the hardest things to change, it helped her become aware and conscious of her eating pattern.

> Writing down your food, your food intake (was there any benefit in doing this?) Oh, definitely, because you are not realizing all of the snacking that you're doing (laughter) during the day. Even if you are not writing, you're thinking that you should be writing ((laughter) So it's almost like it gave you a little bit of a conscience that you didn't have before) Right (SCT-03Sp)

This interviewee's response to "Tell me about any changes that you've noticed in your life after taking the class" indicates how easy it is to "cheat" when you live alone and no one is there to see what you do. Yet when she feed her body, balanced meals, she felt different upon arising in the morning. Feeling better reinforced her accountability to herself.

> Oh well the biggest one is just feeling better all the way around… I get that balanced meal I feel like different person not that I wasn't doin it before I wasn't doin it quite as often when there's one person in the house you know you cheat Because who's to know (laughter) Who's going to see me (So you basically you really notice the difference when you eat well and when you don't) Oh yeah, oh yeah I feel different when I get up in the morning if I don't eat well I'm sluggish when I get up in the morning But when I've done the right thing, I'm ready to take Almond Joy (her puppy) on that leash and hit the road (SCT-84Su)

FOOD AND PHYSICAL ACTIVITY The next two quotes include both the food and physical activity sub-themes. This interviewee is responding to the inquiry "What helped you the most in making changes in your life?" He is aware of the decline in his walking

speed and a relationship between regular physical activity, food intake and weight gain. Even though he is aware, the challenge is getting started with these healthy behaviors.

> But the weight won't come off. I know this has been a terrible spring where the weather's been wet and cold so getting outside has been difficult. I mean I know I'm not walking a three-minute pace, which is 20 minutes, I did at one time, you know I was much younger, but I did it. That's what I'm trying to do is get back to the regime of that to see if that won't help me, you know, and trying to eat better, you know, watch every bite (Before it goes in your mouth!) Yeah, watching every bite, yeah (laughter) (SCT-75Sp)

In contrast, this participant put into practice the concepts that she learned during class as she changed her eating and exercise habits. She especially appreciated receiving a pedometer to help monitor her steps while walking. This was her response to "Can you tell me about the best things you learned from the LU class?"

> First of all a, my eating habits, you know, eliminating fat and some salt, including fruits and vegetables, cut down on meat and a also a lot of starches. The other thing was not just the eating was exercising and relaxation a lectures that we had I found very beneficial, also. And particularly the little thing that you gave us that we, you know, we put on when you walk. (AE-51Sp)

PHYSICAL ACTIVITY The next two responses about physical activity were to the this inquiry "Tell me about any changes that you've noticed in your life after taking the class." This participant talks about how her awareness that she didn't exercise is indication of how she is mistreating herself.

> I'm more conscious of when I'm not exercising. Before I just wouldn't even think about but, if I haven't exercised now, in a couple of days, I start to feel guilty and I'll go and do something. But I, I, try to do the tai chi and Qi Gong Wednesday and Friday and sometimes I'll do it other days at home, but I'm more conscious of it now than I was before. If I don't do it, I start feeling really guilty that I'm mistreating myself. (AE-20Sp+)

This interviewee indicated how he is now conscious of his level of physical activity since completing the class.

> (I) was more conscious of things that I was doing even though some of it was routine, such as yard work, because I'm a rose plant grower and a yard man and love the outdoors (you were more conscious of your involvement in being physically active) Yes (SCT-45Sp)

BLOOD PRESSURE This sub-theme shows the affect that daily monitoring of blood pressure had in the lives of these interviewees. This participant's response to the question "What, what helped you in the class the most in actually making changes in your life?" combines the sub-themes blood pressure and food. She found self-monitoring these two areas to be beneficial as it helped her become aware of her actions.

> I think the, the most helpful was monitoring, back to that blood pressure again, was monitoring the blood pressure, having to do that daily. It made me more aware of what it was ([laughter] (so you weren't doing that before class?) I was not doing it before class. No. And writing down the foods that I eat too. It's easy to just pop somethin in your mouth [laughter] and forget about it, so at least when you saw it, oh my gosh, I ate all of that! [laughter] (So writing down the foods and monitoring your blood pressure that helped you become aware of it.) (SCT-34Su+AE)

The responses to the before and after LU class regarding the recording blood pressure illustrates the final accountability sub-theme. When this participant was asked about the importance of this monitoring practice before and after the class she responded:

> (Before LU) Not at all, I would just take the blood pressure and (And then after taking the class) I've got me a little calendar on the refrigerator, not a big one And I don't put it on there every day, but maybe 2 or 3 days a week just to see what's, what's changing and what's not (SCT-84Su)

Monitoring the changes in her blood pressure is now an important practice. Our final quote for this theme and response to the same question illustrates the impact of making health behavior changes in this interviewee's life. Her lifestyle changes resulted in the elimination of one blood pressure medication.

> (Before LU) The blood pressure I did, but the rest of it I didn't (Before the class you did that) Um hu but the blood pressure was very important Yeah. Cause at the

> time I was on two medications. Afterward it was important, very important, and now I'm only on 1 medication. (AE-51Sp)

In summary, accountability with food, physical activity and blood pressure provided necessary foundation information for participants who were successful in making health behavior changes in both the SCT control and AE experimental groups. Once participants became aware of their habits, they knew what needed to be changed.

4.8 Health Behavior Theme 2: Consumption Changes

The second theme, consumption changes, emerged from the most discussed topic during the interviews, nutrition and consumption of foods and beverages. The three sub-themes identified were: 1) fruits and vegetables, 2) water, and 3) salt and/or sugar.

Fruits and vegetables This first consumption sub-theme reflects the benefits of increasing fruit and vegetable consumption, which were included during every class. The next two participants were asked, "What was the easiest thing for you to change that you learned during the class?" This interviewee talks about the first step in eating more fruit, buying it:

> Eating the fruit that was in the kitchen and in the refrigerator, yeah, cause it was already there (Oh, so you had it you but you just weren't eating it?) Well, I really wasn't buyin it before, so once I would buy it, and it was there, it was easier to go ahead and (So basically the change was a, starting to buy fruits) Um hu, yes, yes (AE-11Sp)

This participant enjoyed increasing the amount of fruit and vegetables in her diet:

> I've enjoyed increasing the fruits everyday. Because I love fruit and I just had not been eating as much, I do put more emphasis on that now. And vegetables also. (SCT-71Su)

The next three participants responded to the question "Can you tell me about the best things that you learned from Lifestyle University?" The first interviewee talks about

the changes his wife (who also attended the class) made to include more vegetables in their meals:

> Well, fortunately, a, my wife grabbed more of it than I did, and she is the cook and so that has made some difference for us, in our eating habits. We're probably doing much better with salads, slaw, a vegetables, a even some of the soups... (Okay, so for you, a, some of the best things were about changing what it is that you're eating)... That's correct (SCT-45Sp)

This participant instituted a strategy to help her increase the amount of fruit that she eats each day.

> I eat a lot more fruit now. Wasn't a big fruit person, is like, I like vegetables but I eat a lot of fruits now, as a matter of fact, what I found, sort a instituted, I try to eat a piece of fruit before I eat my breakfast, and I eat a piece of fruit before I eat my lunch, you know, yeah, so I make sure I get it in there (AE-85Sp)

This interviewee's response to "Can you tell me about the best things that you learned from lifestyle University class?" includes all three sub-themes, fruits and vegetables, water, and salt and/or sugar. She thinks about maintaining her increase in servings of fruits, vegetables and water while decreasing sugary drinks in her daily diet:

> Well to at least think about your servings of food everyday. Are you getting 4 servings of fruits and vegetables and 4 servings of fruits and vegetables, same thing, 4 servings of fruits and 4 servings of vegetables daily which I had never given a lot of thought to before. And less of the complex carbs and less of sugary drinks, more water. (SCT-03Sp)

This participant understood the importance of fruit and vegetable consumption and how it affected her health. A problem with her mouth interfered with this health behavior and she increased her consumption of soft, cold sugary foods, now it was time to get back to eating those vegetables.

> …when I got a a test… I was at, right at the, the, end of the borderline for cholesterol. So if I had been doing my exercises, keeping that up, I probably wouldn't even have had to continue (cholesterol medication). A, eating, I was eating right but I haven't been eatin right since I've had this problem with my mouth. Cause I haven't been able to eat my vegetables like I want, a lot of

> chewing, and so I, I, been eating a lot of yogurt, and pudding and ice cream, that's my downfall and I thought about that today on the way over. I said you know what, since I'm feeling so much better, I'm gonna get rid of all that ice cream I have in my refrigerator. And sherbet, and I have frozen yogurt, and chocolate ice cream, get it all out of there when I go home. (AE-20Sp+)

WATER The second sub-theme water was featured during classes as each table had water, flavored with a few pieces of various fruits, vegetables and/or herbs. The intent of this practice was to encourage an increase in water consumption…water could easily have a variety of subtle interesting flavors as this participant states:

> I liked that… your snacks, …and, and the flavored waters, the raspberry and the mint. (AE-65F)

Drinking more water was the response when asked "Can you tell me about the best things that you learned from lifestyle University class?"

> I've been drinkin water as much as I can...every once in a while, if I go out to eat, I will, sometimes I will get a soda, a diet soda, I'm tryin to, I'm tryin to wean myself away from...probably the most important thing felt like was about drinkin the water (AE-02F+)

For some interviewees, increasing water consumption was hard, while for others it was easy. For this participant it was the hardest thing for her to change during the classes.

> Eating properly was one and drinking lots of water, now I don't know which one was harder (laughter) I think water was harder, because I just couldn't remember sometimes. But I got a scheme for that as I told you. My water glass keeps me going, I love it. (Now I, I'm just kind of curious, were you drinking before, but just not drinking water?) Not drinking enough. I knew I wasn't drinking enough. Matter of fact water scarcely crossed my mind (SCT-84Su)

For this participant substituting water and V-8 splash for carbonated and diet drinks was the easiest thing for her to change.

> You told us to drink more water and juices than a, carbonated drinks, diet drinks mostly. (Okay. That's a big deal! You, a significantly cut down on the amount of carbonated drinks that you drink now.) I drink (V-8) splash, water and just

> different things. (All right. It sounds like those are a lot healthier.) Yeah, and I like a, the, the vegetable V-8 low-sodium and to help with the taste somewhat I put a little bit of black pepper in. (laughter) (SCT-71Su)

There were interviewees who were successful in starting and unsuccessful in maintaining this health behavior. This participant started drinking more water and admitted sticking with the change for about a month.

> I started out very well, with watching the diet, controlling portions, a drinking more water. I didn't stick with it more than about a month. I just regret that. I'm going back, and trying it again. (SCT-73Sp)

SALT AND/OR SUGAR The last sub-theme of consumption changes is decreasing intake of salt and/or sugar. Reduction of sodium was one of the hardest changes for following two interviewees. This first participant enjoyed eating salt her entire life:

> It's to cut back on salt because that was one of my hang up's I guess. (laughter) Because I think I have eaten salt all of my life, I mean just, you know, enjoyed things, salty things. (Cutting back has been really difficult.) I guess it was at first but then it, it leveled off and, and a I think I'm doing real well. (Well, any change that we make initially it is difficult.) Yeah, with anything. (SCT-84Su)

Reducing the amount of both salt and sugar was the hardest change for this participant. She describes the strategy she used to gradually reduce the amount of sugar that she used when making sweet tea.

> Changing my eating, changing it to leave it off the salt, and some of the sugar. Just like sweet tea now, [whispering] I make a pitcher of tea and I wanna at least a cup sugar in that thing. And now I'm, I it took me a while, I a little less each time so maybe a half a cup now. But I still want it sweet... But it had to be, you know, it, it came over time, with just a little bit maybe a spoonful at a time less. (AE-65F)

Participant also reduced the amount of salt and sugar that she consumed. Following is her response to "What helped you the most from this class in making changes in your life?" She is highly motivated to reduce the salt because of problems with her kidneys.

> Salt and sugar (most helpful) Probably the salt, (So cutting down the amount of salt, understanding the consequences of what happens when you have too much salt, a really helped you make a significant change in your a, lifestyle.) Yes, because I have 3rd stage kidney failure and I needed to get that under control, and I craved salt, probably because I had that failure, and my body wasn't able to wash it out…. Most cakes are not healthy. And that I've stopped eating cakes, pretty much, when I eat cakes, they, they taste empty to me. Like empty calories, empty, it doesn't give me any nutrition, now it probably doesn't [laughter] (SCT-79Su+AE)

Later on during the interview in responding to "tell me about any changes you noticed in your life after taking this class" she explained her strategy for reducing salt, no longer purchasing items high in salt:

> Well, and decreasing my salt. I mean I no longer buy potato chips, I no longer buy those a, something that I liked a, goldfish, I don't buy those anymore. And I liked them. But they have salt in them, so I can't, I can't, they're more, I mean, if I had those, I'd exceed my, because I don't just eat a little bit, I eat the whole bag.

In this final consumption change example, this interviewee responds to the question "What was the hardest thing for you to change that we talked about during these classes?" She shares her substitution strategy for making the health behavior change of reducing sugar intake.

> Well what I did was a start eliminating some of those things that have found more enjoyable. [laughter] (So what did you eliminate?) Well what I did was a start eliminating some of the sweets that I, that I like. I love cookies and I start restricting the amount of cookies that I eat. I start looking at the ones. I also started trying to look at well healthier ones and then I started looking at substitutes. And I found apples help a lot. Grapes help a lot, with the cookies. Okay, a, I also found myself trying to eat things that take my mind or my thoughts of food, a taste buds out of sugar. I found myself eating more yogurt. I eat more of that. A, becoming more aware of my, a, a, my impulsive urges when I'm go into the supermarket. Now you walk in and immediately see your baked goods, you know, from the bakery. Now normally that woulda caught my attention and made me move in that direction, but right now I see it, and I kinda move away. (AE-57F+)

In summary, there were participants from both the SCT and AE groups who were successful in finding strategies to helped them make consumption changes. Some

participants were able to increase fruit, vegetable and water intake in addition to reducing salt and/or sugar consumption. For some interviewees, these were the hardest changes that they made during this course, for others they were the most helpful or easiest changes.

4.9 Health Behavior Theme 3: Learning Aids and Activities

Learning aids and activities is the third health behavior theme. The quotes in this theme illustrate some of the tools that assisted participants in making consumption changes. The three sub-themes that surfaced were: 1) samples and recipes, 2) test tubes and label reading, and 3) grocery tour.

Samples and Recipes The first sub-theme, samples and recipes, helped connect the participants to the content presented during this course. Hearing someone say that it is important to eat more fruits and vegetables while reducing salt and sampling foods featuring fruits and vegetables that are flavorful, without added salt or sugar brought the nutrition content to life. Participants senses of sight, smell, taste and touch were engaged in the learning process as they experienced the new recipes that they were provided. When the next 2 participants were asked "Can you tell me about the best things that you learn from the Lifestyle University class?" this participant replied:

> I learned wonderful recipes and I learned to pay more and more attention to my, my health, I really did…(the researcher) she'd serve all these wonderful, new drinks, and, and, and snacks, and a I always felt guilty if I didn't a continue it when I left last class. (SCT-78Sp)

This participant's response illustrates the impact that the food samples had on her retention of the course nutrition content:

> Well, well I've always observed that what you can see with your eyes and what you hear goes together and if you can observe something, it sticks with you a lot

better than what you hear sometimes. Yes and the nice treats that you had for us and showing us how things could go. (SCT-71Su)

The next four responses echo the enjoyment that participants experiences from the snacks that they tasted during each class. The first two interviewees were responding to the question "Can you tell me about the best things that you learn from the Lifestyle University class?" one interviewee had this to say:

What I enjoyed the most were snacks, oh wow. (SCT-79Su+AE)

The next two participants have prepared some of the snacks they sampled in class at home. The first interviewee also drinks the flavored waters:

I liked…your snacks, I still eat what I call em berries and twigs, but whatever they are [laughter] I eat them. And, and the flavored waters, the raspberry and the mint. (AE-65F)

This next participant loved the samples:

Oh, and I just loved all those little tastings. Oh, I didn't say that, did I? I think I did. (You have a, done some of them) Um hu (AE-24Sp)

This male interviewee enjoyed the samples and does not have confidence in his ability to prepare any of the recipes at home.

Well, it was, everything, everyday that we went, was very interesting. A, the foods, the things that you would prepare were so unique, I don't feel that I could do that, you know I just didn't find that I could prepare those things. I guess I would have to try to see whether I could come up with the same results. But there were very interesting and I enjoyed that because of the tastes and flavors out of what you used were very surprising to me, that, that they were as good and tasty as they were. Just wasn't used to that kind of food. But a just everything and the information that was provided, yeah I hung on almost every word all the time that, you know, might have stuck with me for a little while but not in the long term. (SCT-75Sp)

TEST TUBES AND LABEL READING One of the most talked about visual learning aids that the dieticians used during their presentations were test tubes with varying amounts of salt, sugar and fat. For example, participants were shown three test tubes

containing different amounts of fat. They were then asked to match the amount of fat in the test-tube to three servings of protein from a hamburger, piece of chicken and piece of fish. A similar matching activity with test tubes of salt had students guess the prepared food with the corresponding amount of salt and then learning to read the food label. The first two interviewees responses are to the inquiry "Can you tell me about the best things that you learn from the Lifestyle University class?" One participant said:

> It does involve the food, when they brought those samples of how much fat and, well I don't remember exactly what the item was, that was such an eye-opener. (SCT-73Sp)

An interviewee was surprised with what she learned during the label reading activity:

> Well there was several things actually. One of them was reading to know what was in it particularly the, a fat and the sodium content, that's the one that really surprised me more than anything. (SCT-31Sp)

When a participant was asked "What helped you the most from this class in making changes in your life?" she responded with this comment about the little containers:

> I didn't know so, when, when that lady showed us in the little containers that the salt that was in different items I had no idea there was that much salt. Have mercy, tried to cut back on salt, and some of the sugar. I like sweets. (AE-65F)

This participant a retired RN answered the question "is there anything that I haven't asked you, that, you'd like to tell me about, how the class affected your life" with this response about salt and her need to make changes in her life.

> I learned a lot of things in the class. The examples of how much salt in the foods, you don't think about that and it doesn't matter if I was a nurse for 100 years, I never thought about that, because that's not something, that's a dietitian's focus, not a nurses focus. And I knew that, that was important but it's not important really until you see it. And that, that, really brought it home to me, to see that, you know, I need to make some changes. (AE-42F)

GROCERY STORE TOUR The last learning aid and activities sub-theme illustrates the impact of the optional grocery store tour. This was an additional activity, led by the researcher, where the class met at a local grocery store that they chose, to look at products and compare labeling. When a participant was asked "Can you tell me about the best things that you learn from Lifestyle University class?" her response refers to label reading from the prior sub-theme that was included during the grocery tour.

> Oh, there is so many, but I think the most interesting thing to me was taking time to read on the different things in the grocery store before I purchase. (so reading the labels) Yeah that was just too interesting I really enjoyed that. I had no idea things, so many fascinating things were (laughter) right there before me and I was just buying, taking home, having a great time, and hum, a, but after coming here it bothered me, the difference, you know Oh yea. And I been trying to keep it up. (SCT-84Su)

While discussing the quantitative measure results with an interviewee, she commented about how she includes several different vegetables into her diet each day including one that she was learned about during our of before the class, kale.

> One thing I learned that I'll never forget from you, when … we went shopping, a, you said kale. I had never heard of kale. And you said that was such a good, nutritious… I do have my kale and baby spinach salad, every day, regardless. And then I add like 10 different vegetables to it. You know, the carrots, and tomatoes, and the cucumbers, and the radishes and the garlic and so on… I make sure I have that every day, so I get those vegetables, which I never did. (SCT-38Su)

The final comment for this theme is the response participant gave to the question "what helped you the most in making changes in your life?"

> I also learned, new fruits and vegetables that a, I really enjoyed, that I didn't truly know what they were, and, and from you I learned a lot from the health food store (AE-11Sp)

Summarizing theme three, learning aids and activities, the nutrition content in the course came alive with these aids activities that supported the participants in making

changes in their consumption, from theme 2. Sampling of foods during the class provided participants with a sensory experience that supplemented the oral content presented during the class. The test tubes and label reading engaged students visually with the information about salt, sugar and fat that the dieticians offered. The optional grocery tour empowered attendees to take time to read labels and compare products while grocery shopping.

4.10 Health Behavior Theme 4: Other Behavior Changes

The last theme that emerged, other behavior changes, includes four sub-themes: 1) physical activity, 2) stress management, 3) blood pressure control, and 4) unintended benefits. These sub-themes reveal the remaining health behavior changes associated with course content that the participants recalled during their interviews.

Physical activity This first sub-theme, physical activity was also a sub-theme in the first health behavior theme accountability. These quotes focus on the various ways participants' implemented physical activity, as a result of the course. A participant responded to the inquiry "Can you tell me about the best things that you learn from Lifestyle University class?" by talking about the variety of different activities that are part of her life:

> …my exercise to is just real important to me. A, and I learned a lot about balance, and a and, and, exercise. Like I said, I just walk a lot and bike a lot and try and exercise. I take yoga and, and Pilates a lot of stretching, you know, how to keep myself in shape at my age. (SCT-38Su)

For these next two interviewees, including regular physical activity was one of the hardest changes for them to make. Both were initially successful including this change and they each had different challenges associated with continuing this practice. Moving interrupted this behavior for a male participant.

> Daily exercise, regular exercise (That's something that you weren't doing prior to the class) Right (Okay. And so what happened that you were able to start engaging in regular exercise?) Well, while I was a living very close to the senior center and so during the class I was coming over here and exercising regularly three, three and four times a week if possible, and a then continued that here and at the a Drew Wellness center until about October when I moved to West Columbia and I've not really been exercising regularly since then. (SCT-48Su)

By the time we reached the end of the interview after going over the results, he reflected on the change in his physical activity pattern. (This is the male participant who lost 42 lbs. during the class and 70 lbs. by the interview.) Following is the strategy that he shared with the researcher for resuming physical activity:

> You know what I think I'm going to need to do, I live over in West Columbia now so, even when I wasn't doing regular exercise, you know, I mean vigorous exercise, I was walking a lot more when I was living downtown and using the bus as my primary mode of transportation. And, now, I live over there, the bus service is practically nonexistent. A, you know, it's just not possible for me to use the bus to get anywhere so I'm going to go an distance to speak of, the only way I have of getting around is driving. And a, so now that the weather is getting warmer, a, I think I need to get a bicycle, and start using that more. And a, it'll have 2 benefits it'll save money and get me to work out more. Well, I mean, you know, some people do ride that much. I remember the last time I was in the Netherlands, I a, rode a, to a, see one of the a, Nazi camp sites, that's in the Netherlands, and it was, like 25 km, from where I was staying, and a, I got confused and went the wrong direction the first thing, (laughter) a rode probably about 15 km before I realized I wasn't going to get there and then rode back, and then I rode the right direction the next day. So I, in 2 days did about 40 km, no about 80 km round trip, a so, you know, its something, I know I can do, if I want to do it. I just have to.

For this interviewee exercise was the hardest change for her. She had attended an exercise class, stopped and found it difficult to return. At the time of the interview, pain from arthritis kept her from returning because the exercise class was “too hard on her knees”.

> Exercise (Exercise. Okay. And you had taken some exercise classes before, a that's what you are telling me, a so it was a difficult to get back in to starting exercising again?) Well it was, when I started back with the a arthritis class. And in the beginning I was the only one that Faye had in the class. But it did grow and then I, I did the Strong to the Bone until my knees just wouldn't stand it, I have

> arthritis in my knees, it was, it was too hard on my knees. That, that's a there's a little bit of breathing without that one, a more action in your arms and legs, it's, it would be really good. But I can't do it, my knees hurt too bad. (SCT-73Sp)

In contrast for this participant increasing her physical activity was the easiest thing for her to change:

> …maybe more exercises, I'm kind of (And you a, attend classes here regularly) Yeah, yeah, and I'm trying to start walking again I've been doing a little bit better bout exercise here in the morning. I've been trying to walk at least a mile in the afternoon, sometimes I do and sometimes I don't, but that's one thing I'm trying to do (SCT-31Sp)

In response to the question "What helped you the most in making changes in your life?" a participant shares how sometimes you just need to be told to exercise:

> (A, and so the things that helped you the most from making changes would be learning about exercise) Yes, yes Even though I know I should exercise, you know, sometimes you, you, need to sit down have somebody tell you this is what you need to do (AE-42F)

These next two interviewees responded to the inquiry "Tell me about any changes you noticed in your life after taking this class." The first participant, talks about her increased activity, using the resources she already had at home:

> I do get more exercise. I have my treadmill up and, and I, I hadn't been on it in months, but I have it setup now and I can get on the treadmill a couple times a week, not everyday, but a couple times a week, but now I, I'm working in the yard constantly, all day, everyday. (AE-65F)

While another participant responds by sharing how what she learned about the relationship between bone density and the exercise inspired her to take a different kind of exercise class:

> As I mentioned to you, I am taking that exercise class specifically because of a when the classes we had that was talking about a osteoporosis and other bone structure change what we should be doin. (AE-57F+)

STRESS MANAGEMENT The comments in this sub-theme, stress management, reflect the implementation of the various stress management techniques presented during the class. This participant found stress management to be the hardest thing to change during the class. She had a signification realization, when she gets stressed she eats things that are "not good for me". Her solution was to choose to eat healthier foods when she is stressed.

> Well, as I said earlier, I eat in response to stress, food is, food is comfort for me and it's, it's, before, I would, if I was upset or stressed, I would eat something that I know was not good for me. But now, you know, I have the choice that I can go to the refrigerator and get an apple or celery sticks or carrot sticks or something, instead of something that's deadly. (You're making different choices now when it comes to your response to stress based on a, the choices you're making what you're eating now.) Yes. And I always knew that I had choices, but it just took this class to make me realize it. And of course being retired, it, that makes a difference too. You know, because, your whole focus changes then, and you can even start thinking about your own health instead of everybody else's. But it really, really, helped the class, was just such help, I can't, I just can't tell you how much was. (AE-42F)

These next two participants responded to the inquiry "Tell me about any changes you noticed in your life after taking this class." The strategy that worked for our first respondent was recognizing stressful situations, refocusing and changing direction.

> Stress level, stress level I know now how to really get it down if I know that it's stress and to really refocus on not being stressful….And all it is, it is just your whole lifestyle, just like the title says, you know...getting rid of stress, um getting sleep...I recognize stress now and know how to move away from whatever it is that is getting me stressful (SCT-03Sp)

For participant recognizing the stress and then sitting down to get quiet was the new behavior that she implemented. Her she recalls a recent upset and her response:

> I'm treasurer of our local alumni chapter from a college. I past in my report yesterday… she couldn't find $50 and I think I got my blood pressure up over that $50… 30 minutes later she finally found it …you would have thought it was $500…I'd almost be willing to give her $50 to leave me alone… when I was finished with her well I guess it was 200 (her blood pressure) now got down to

> 135… I just got quiet and sat down and did much of nothing and it went on down to 126. (Before you took the class, would you have known to sit quietly?) No. I would be somewhere ranting and raving (SCT-05Su)

Taking time out to relax and letting go of things she couldn't control are the strategies that this participant now practices:

> Well that stress, okay, a, you know, sometimes that, that's as important as anything, to be able to relax and a, just take time out, for yourself. If you need, you know, that's healthy, for ya, a, trying to not get upset over things you have no control over. A, thinking about grandchildren and letting God take over, hopefully, a, those concerns that you might have, and reading and trying to research things that might be helpful, with family especially. (AE-24Sp)

This interviewee learned to recognize physical tension in her various parts of her body and then to consciously relax her body to release the tension

> Mainly the stress reduction…I became aware of how tense I am. Now most people don't, are not as aware of it as I am, but I am. It's generally my shoulders and my neck, but it's also my hands, I'm trying to think what else, well whatever, even now with my hip, I noticed that I tense it up. Now, that doesn't help so I have to... Consciously relax it Relax, so it, cause otherwise it hurts more, but instinctively, I tighten it up. Now, and I just did it, just now, I noticed that I just let go. Something about that I'm, I tend to be very tense and now my shoulders finally relaxed. I tend to be very tense and so I've been learning about relaxing, my body. (SCT-79Su+AE)

When these two interviewees were asked "Tell me about any changes you noticed in your life after taking this class", this first participant talks about the change in her relationship with her mother:

> My mother used to drive me crazy, she's 92, and a, she's a high maintenance person, but a, and she still, she knows how to push my buttons, but, but, I understand how to deal with it and to turn it off. (Those were skills a, that you learned in the class) They were yes, yes. (AE-11Sp)

This participant learned how to breathe, look at things differently in response to the stress in her life:

> …how I looked at this before, I was stressed out over things, I was just stress, stress, stress, now I know, breathe and you know, look at life differently, take care of me. (You are important now.) Yes I am [laughter] (AE-56F+)

BLOOD PRESSURE CONTROL The third sub-theme, blood pressure control, is the primary objective of this intervention. These participants talked about their success and challenges with controlling their hypertension at various times during the interview process. This first interviewee's response was to the question "What helped you the most in making changes in your life?"

> I think the fact that my blood pressure has finally gotten down to normal and it's still normal. (And a, being an RN you already knew about your blood pressure [laughter] so that was just kind of a reminder again) Yeah, oh yeah. Because until I retired my blood pressure was nowhere near normal so then when I retired, it was still sort of borderline and then when I took this class, then it came down to normal and … it's still normal. (Do you take any medications?) It was high, even with the medications. And we couldn't get it down and my doctor was so exasperated, so she's very pleased now. (AE-42F)

This participant's response to the inquiry "Tell me about any changes you noticed in your life after taking this class"

> My blood pressure is pretty well in, a check it's running right now around 120/75. And of course that's with medicine...And without medicine, that's a different story. (SCT-75Sp)

While discussing the quantitative results with these next three participants, they commented on their hypertension control. This participant was pre-hypertensive and with the changes he made, his blood pressure returned to normal so that he did not have to take any medication, the motivation for his health behavior changes. He starts with sharing the surprising reduction in use of other medications.

> Well I am decreasing my, a asthma medication. A, I'm down to 1 rather than 2 inhalers daily. So and I'm also a not using the a steroid nasal spray everyday, I'm using it intermittently. (Had you been on blood-pressure medication or not?) No (So that was really significant then for your blood pressure to come down because you never had to go on blood-pressure medication then) Right, I think that was

> one of my major motivations to a, to loose the weight a, and to change my diet was because was because I didn't want to have to go on blood pressure medication. I read and heard too many things about side effects and I just didn't want to have to bother with it. (SCT-48Su)

This participant's doctor was pleased with the results from the health behavior changes initiated during this course (see sub-theme unintended benefits). Since monitoring of blood pressure at home was one of the journal activities the researcher asked, "Are you still monitoring your blood pressure?" she replied:

> Oh, I take my blood pressure every day. This morning it, I mean that, not only am I on Diovan but she put me on a, a, diuretic as well, and it drops it real, I mean, it was like 120/78 (AE-08F)

This last comment for this sub-theme is from a participant who was unaware that she had hypertension when she started the course. The important health behavior change for her was going to the doctor to have it treated. Her hypertension wasn't controlled by the time of this interview and was being monitored by her doctor. She was not monitoring her blood pressure at home.

> I'm still having problems bringing my, my a, my blood pressure down Even he changed My medication and sometimes it goes down around 150 and sometimes around 140 (Do you take your blood pressure at home?) No, because I had that thing, that just doesn't work, I don't know how (SCT-62Su)

UNINTENDED BENEFITS This final sub-theme, unintended benefits, represent other health improvements participants noticed that resulted when they made health behavior changes encouraged during this course. The next five quotes are in response to the inquiry "Tell me about any changes you noticed in your life after taking this class." The first interviewee noticed improvements in asthma, arthritis and fatigue.

> Well my a, I guess the main health issues that I've had a, ongoing were my a, asthma and a arthritis and a frequent fatigue. And I think that the main, I've noticed more improvement I think in the areas of the a asthma and a having more energy in general, when I sleep properly, but a I'd say minor improvements in the

> arthritis because I wasn't having a lot of trouble with that anyway (Anything else?) Well, I've lost about 70 pounds (laughter) (And how has that impacted your life?) Well, I think that accounts for the a having more energy and probably the improved a arthritis too (SCT-48Su)

The next two participants experienced lower cholesterol. Interviewee attributes the change to exercise and medication.

> Well I've managed to lose weight some weight. And my cholesterol is lower. Which is a combination of exercise and medicine. (SCT-31Sp)

This participant attributes her lower cholesterol to the changes she made in her diet and exercise.

> I gotta good a, doctors report on March 25. My cholesterol, the, is down tremendously because of the exercise and the change in my diet, that I was, my food regiments has changed and the doctor was very pleased with (Do you know what your cholesterol was before and what was now or even a ballpark?) 300 And now it's 185 (...And were you on blood, a, cholesterol medication?) Yes, I was on Crestor (A, are you still going to have to stay on it or is he) when I go back in July we'll decide (you taking a, blood pressure medication too?) I do, un hu. And a, yes I take Isosorbide, Exforge and when I talked with the pharmacy here during this session and she recommended that I talk to my doctor about Diovan and of course, now they have changed me to that, so that's working good. (AE-08F)

More energy allows this interviewee to be more active. This is the retired RN whose blood pressure is now under control and she also lost weight.

> I think I have a little more energy and that helps me to be more active, to have a huge memory garden, my entire backyard is a garden and I garden every day regardless of the weather. The only thing that makes me go inside is lightning. (laughter) And, and I always do that in the evening after dark so, and I couldn't do that before, you know, I just couldn't do that. I would go out and just kind of, you know, plant a few things, or maybe go out and look at it and say, gee, I need to do that. But now I go out and do what needs to be done, and then I sit down, after I get everything done. (And you said the, a, your blood pressure is normal.) Yes it is... Well, I lost a few pounds. (AE-42F)

This participant was delighted with her weight loss and her doctor is proud of her weight loss and hypertension control.

> I don't know how much I weigh today, but I probably lost at least 22 pounds. My clothes are hanging on me. (laughter) (In order for your clothes to be hanging on you, that means that you've made some changes in your life) And my doctor is very proud of me. (laughter) (I would, I'm proud of you too! I'm proud of you too! And because you continue to go see the doctor and it's been a while since you took the class, how is your blood pressure?) It was very good the last time I went. I don't remember the exact numbers (SCT-71Su)

This final quote is from a participant whose new goal is minimizing her blood pressure medication since her health behavior changes resulted in lower blood pressure.

> Another thing that a, the class made me start thinking about is, trying to find ways of minimizing the medication. A like the blood pressure a my high blood pressure, my pressure's been very good and I haven't talked to my doctor about it and maybe there's some things I might be able to do where I won't have to take the medication. So, so, that's one of the major things that came outa the class. And my blood pressure when I was here very good, okay. And I'm thinkin, when I talk with him, a if they are things that I can do to minimize or eliminate the pressure medication, okay. And that's one of the things that I'm looking at, and that stem from the class. (AE-57F+)

These interviewees shared several unintended benefits; improvements with asthma, arthritis and fatigue, lower cholesterol, increased energy, weight loss and a medication minimization goal.

In summary, perception distinctions between groups reflect the differences in approach with the importance of peer influence in the control (SCT) group and health relationships and personal goals in the experimental (AE) group. Enjoyment was a similar perception theme found in both groups. Health behaviors were similar in both groups with three themes accountability, consumption changes and other changes.

Table 4.1 Repeated Measures Analysis of Systolic and Diastolic Blood Pressure, Weight, BMI, Self-Selected and Fast Gait Speed Completers by Group

	Control (SCT†)							Intervention (AE≈)								
		Pre		Post1		Post2			Pre		Post1		Post2			
Variable	**n**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**n**	**Mean**	**SD**	**Mean**	**SD**	**Mean**	**SD**	**F**	***p*-value**
Systolic blood pressure (mm Hg)	29	142.89	(26.56)	132.15	(21.73)	133.62	(22.53)	13	148.02	(29.23)	130.61	(24.61)	128.40	(20.86)	(2, 80) 2.02	0.140
Diastolic blood pressure (mm Hg)	29	75.68	(11.02)	69.54	(9.54)	69.69	(9.05)	13	78.87	(9.95)	73.40	(8.86)	71.63	(7.20)	(2, 80) 0.26	0.773
BMI (lb/m2)	29	31.34	(6.86)	31.07	(7.05)	30.87	(6.95)	13	28.17	(6.43)	28.05	(6.57)	27.74	(6.63)	(2, 80) 0.86	0.150
Self-selected gait speed (meters/sec)	29	1.20	(0.28)	1.07	(0.19)	1.07	(0.20)	13	1.02	(0.12)	1.12	(0.13)	1.06	(0.14)	(2, 80) 9.80	0.0002*
Fast gait speed (meters/sec)	29	1.54	(0.39)	1.36	(0.32)	1.42	(0.29)	13	1.39	(0.22)	1.42	(0.26)	1.44	(0.30)	(2, 80) 6.67	0.002*

†Social Cognitive Theory (SCT)
≈Appreciative Education (AE)
* significant
Note: all individuals with missing data were dropped from the analysis

Table 4.2 Number of Participants with Increases in Gait Speed of at Least 0.10 meters/sec

	Control (SCT†)				Experimental (AE≈)			
	Pre to Post-test 1		Pre to Post-test 2		Pre to Post-test 1		Pre to Post-test 2	
	n (31)	%	n (31)	%	n (16)	%	n (16)	%
Self-selected gait speed (meters/sec)	5	16%	3	10%	8	50%	2	13%

†Social Cognitive Theory (SCT)
≈Appreciative Education (AE)

Table 4.3 Repeated Measures Analysis of EATS and IPAQ Completers

	Control (SCT†)							Experimental (AE≈)								
		Pre		**Post1**		**Post2**			**Pre**		**Post1**		**Post2**			
Variable	n	Median	Min, Max	Median	Min, Max	Median	Min, Max	n	Median	Min, Max	Median	Min, Max	Median	Min, Max	F	*p*-value
EATS (average daily fruit & vegetable servings)	28	2.32	0.55, 4.17	2.96	1.02, 9.13	2.81	1.18, 6.57	13	2.78	0.14, 6.17	3.69	0.92, 7.53	3.77	1.15, 8.93	(1,80) 0.82	0.37
IPAQ-SF (MET-min/week)	22	895	116, 11466	1956	480, 9096	1965	198, 8868	10	2946	33, 6132	3302	693, 8586	3480	50, 11412	(1.62) 1.05	0.31

†Social Cognitive Theory (SCT)
≈Appreciative Education (AE)
Note: all individuals with missing data and outliers were dropped from the analysis

Table 4.4 Repeated Measures Analysis of Systolic BP, Diastolic BP, Weight, BMI, EATS, Self-selected and Fast Gait Completers Across all Participants

	Pre-test		Post-test 1		Post-test 2			
Variable	n	Mean (SD)	n	Mean (SD)	n	Mean (SD)	F	*p-value*
Systolic blood pressure (mm Hg)	42	144.48 (27.16)	42	131.67 (22.37)	42	132.00 (21.91)	(2, 42) 17.88	<.0001
Diastolic blood pressure (mm Hg)	42	76.67 (10.68)	42	70.73 (9.35)	42	70.29 (8.48)	(2,42) 16.50	<.0001
BMI (lb/m2)	42	30.36 (6.81)	42	30.13 (6.97)	42	29.9 (6.93)	(2, 42) 5.25	0.0071
EATS* (average daily fruit & vegetable servings)	41	2.77 (1.56)	41	3.69 (2.07)	41	3.53 (1.88)	(2, 41) 6.74	0.0132
Self-selected gait speed (meters/sec)	42	1.15 (0.26)	42	1.09 (0.17)	42	1.07 (0.18)	(2, 42) 4.21	0.0182
Fast gait speed (meters/sec)	42	1.49 (0.35)	42	1.38 (0.30)	42	1.42 (0.29)	(2, 42) 7.48	0.0010

*Note: outliers were dropped from the EATS analysis

Table 4.5 Mean and Median* Changes in Outcomes from Pre-test to Post-test 2 for All Completers Across All Participants.

Variable	Range of changes	Changes from pre to post-test2 Mean (SD)
Systolic blood pressure (mm Hg)	(-53.70 - 17.30)	-12.68 (17.83)
Diastolic blood pressure (mm Hg)	(-26.30 - 16.30)	-5.94 (9.04)
BMI (lb/m2)	(-6.6 - 1.3)	-0.45 (1.18)
EATS* (average daily fruit & vegetable servings)	(-2.86 - 6.38)	0.76 (1.88)
Self-selected gait speed (meters/sec)	(-0.48 - 0.25)	-0.08 (0.18)
Fast gait speed (meters/sec)	(-0.59 - 0.30)	-0.08 (0.22)

Table 4.6 Demographic Characteristics of Interview Sample by Group

	Total sample		Control (SCT)†		Experimental (AE)≈	
Variable	***n* (34)**	**%**	***n* (18)**	**%**	***n* (16)**	**%**
Gender						
Male	5	15%	4	22%	1	6%
Female	29	85%	14	78%	15	94%
Race						
White	22	65%	11	61%	11	69%
Non-white	12	35%	7	39%	5	31%
Marital status						
Married	13	38%	8	44%	5	31%
Divorced	12	35%	3	17%	9	56%
Widowed	7	21%	6	33%	1	6%
Single	1	3%	1	6%	~	~
Not reported	1	3%	~	~	1	6%
Income						
<$25,000	10	29%	5	28%	5	31%
$25,000 or more	21	62%	12	67%	9	56%
Not reported	3	9%	1	6%	2	13%
Education						
High school or less	5	15%	3	17%	2	13%
At least some college	29	85%	15	83%	14	88%
Age						
50-59	3	9%	1	6%	2	13%
60-69	10	29%	4	22%	6	38%
70-79	17	50%	11	61%	6	38%
80+	4	12%	2	11%	2	13%
Age (mean ± SD)	70.9 ± 7.5		72.2 ± 6.7		69.5 ± 8.3	

†Social Cognitive Theory (SCT)
≈Appreciative Education (AE)

Table 4.7 Before and After Perception Responses by Group

		Total Sample				Control (SCT)†				Experimental (AE)≈			
Variable	**Response**	**Before**	**%**	**After**	**%**	**Before**	**%**	**After**	**%**	**Before**	**%**	**After**	**%**
Eating Fruits & Vegetables													
	Not at all	2	6%	0	0%	0	0%	0	0%	2	13%	0	0%
	Somewhat	21	62%	0	0%	11	61%	0	0%	10	63%	0	0%
	Very Important	11	32%	34	100%	7	39%	18	100%	4	25%	16	100%
Regular Physical Activity													
	Not at all	4	12%	0	0%	3	17%	0	0%	1	6%	0	0%
	Somewhat	13	38%	3	9%	7	39%	3	17%	6	38%	0	0%
	Very Important	17	50%	31	91%	8	44%	15	83%	9	56%	16	100%
Walking Speed													
	Not at all	12	35%	3	9%	5	28%	1	6%	7	44%	2	13%
	Somewhat	17	50%	12	35%	9	50%	7	39%	8	50%	5	31%
	Very Important	5	15%	19	56%	4	22%	10	56%	1	6%	9	56%
Blood Pressure													
	Not at all	4	12%	2	6%	1	6%	1	6%	3	19%	1	6%
	Somewhat	13	38%	2	6%	9	50%	1	6%	4	25%	1	6%
	Very Important	17	50%	30	88%	8	44%	16	89%	9	56%	14	88%
Lower BMI													
	Not at all	12	35%	3	9%	8	44%	2	11%	4	25%	1	6%
	Somewhat	13	38%	4	12%	7	39%	3	17%	6	38%	1	6%
	Very Important	9	26%	27	79%	3	17%	13	72%	6	38%	14	88%
Diary Recording													
	Not at all	19	56%	0	0%	9	50%	0	0%	10	63%	0	0%
	Somewhat	15	44%	10	29%	9	50%	6	33%	6	38%	4	25%
	Very Important	0	0%	24	71%	0	0%	12	67%	0	0%	12	75%

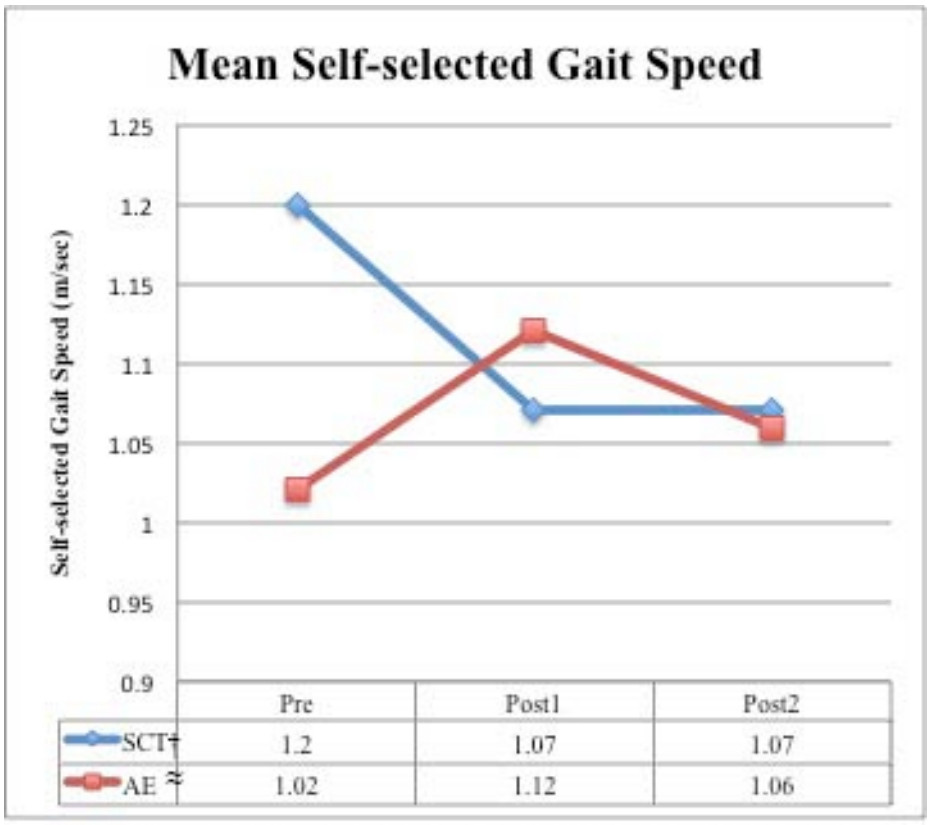
† Social Cognitive Theory (SCT)
≈ Appreciative Education (AE)

Table 4.8 Perception Theme Difference SCT † Control Group

Perception Differences Control (SCT)† Group	
Theme 1	Example Quotes
Peer Influence:	
Advice & Ideas	"some of us had advice… given that some of us, some of us gave each other some advices that what we thought might help us sleep better. (Did you learn anything that helped you sleep better?) Yes" (SCT-03Su)∞ "There were some times when I found out that there were other people that sort of had, not the same thing, but similar problems and we'd talk about different little things that sort of cast good ideas my way." (SCT-84Su)∞
Challenges & Support	"everybody else was struggling too, so it wasn't just you (the social aspect of this was important so you didn't feel quite so alone) Right (some of the people did have good ideas that were helpful for you) Yes" (SCT-31Sp)∞
Successes	"the groups sessions were good to hear about other people's experiences and sometimes if you pick up one little thing from something it helps you. (You liked learning about how other people did things.) Yep (when you heard how other people did things that helped you make changes in your life.) Yep" (SCT-71Su)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	

Table 4.9 Perception Theme Differences Experimental AE≈ Group

Perception Differences Experimental (AE)≈ Group	
Theme 2	Example Quotes
Health Relationships:	
Bucket List	"I had bucket… Oh I wanted to visit every state in the a, in the United States and I have done about 40, close to 40 I believe, I can't remember I have to look at the list. I've done a lot of em… (are you saying that it was helpful to do the Bucket List?) Um hu, very helpful, yeah." (AE-20Sp+)∞
Reflection	"it helped me reflect on what I had done, and, more so organize it" (AE-11Sp)∞ "It made me aware of some things… I hadn't thought of before...my exercise, my diet cause I doin like exercise just because I was with my friend, but now, I do it really for my health." (AE-53F)∞
Taking Action	"I've made some strides now I went to the VA on Monday and the rest of the time I was home. If anybody wanted to come by, wanted me to keep the kids for em, you know, cause I have 2 great grands, 3, yea, 2, and, you know, I said why no, I, I, I've I have to go to the senior center today am goin." (65 AE)∞ "being able to walk, just about every day… since I got somebody, we kinda go to the church, so we're not outside… we go there everyday, even in the bad weather, and everything… that's made a difference.." (AE-08F)∞
Noticing the Connections	"Well making changes in my health will keep me from having a, fifth stage... kidney failure, which means you have to have dialysis, so it would keep me from having to do the dialysis that would be major." (SCT-79+AE)∞ "I even got my daughter doin it now. She's conscious of it… she does Zumba, Zumba instructor, and a cardio instructor… she has lost weight and she looks good by doing the same thing I'm doin." (AE-56F+)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	



*Statistically significant difference between the SCT† and AE≈ (P<0.05)
† Social Cognitive Theory
≈ Appreciative Education

Figure 4.1 Mean Self-Selected Gait Speed

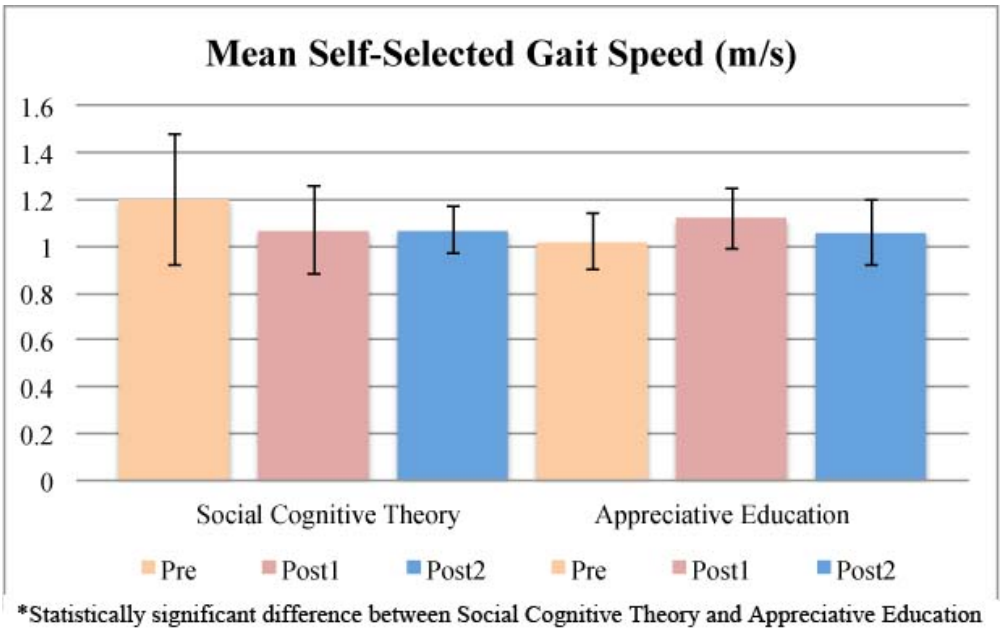
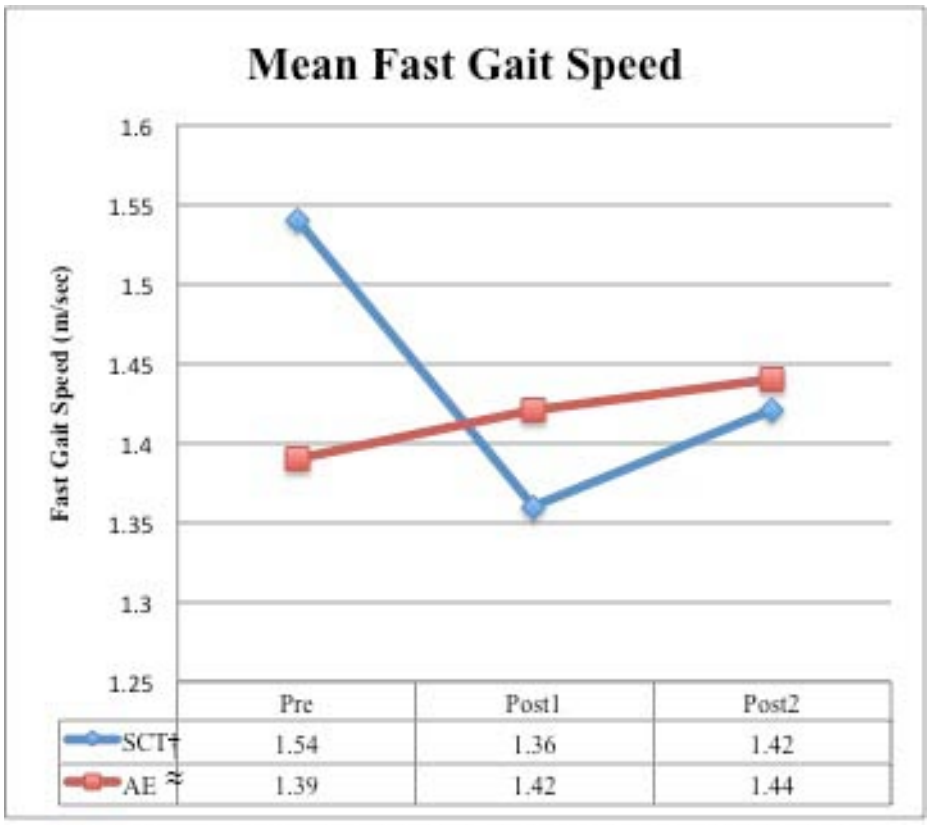


Figure 4.2 Mean Self-Selected Gait Speed with SD



*Statistically significant difference between the SCT† and AE≈ (P<0.05)
† Social Cognitive Theory
≈ Appreciative Education

Figure 4.3 Mean Fast Gait Speed

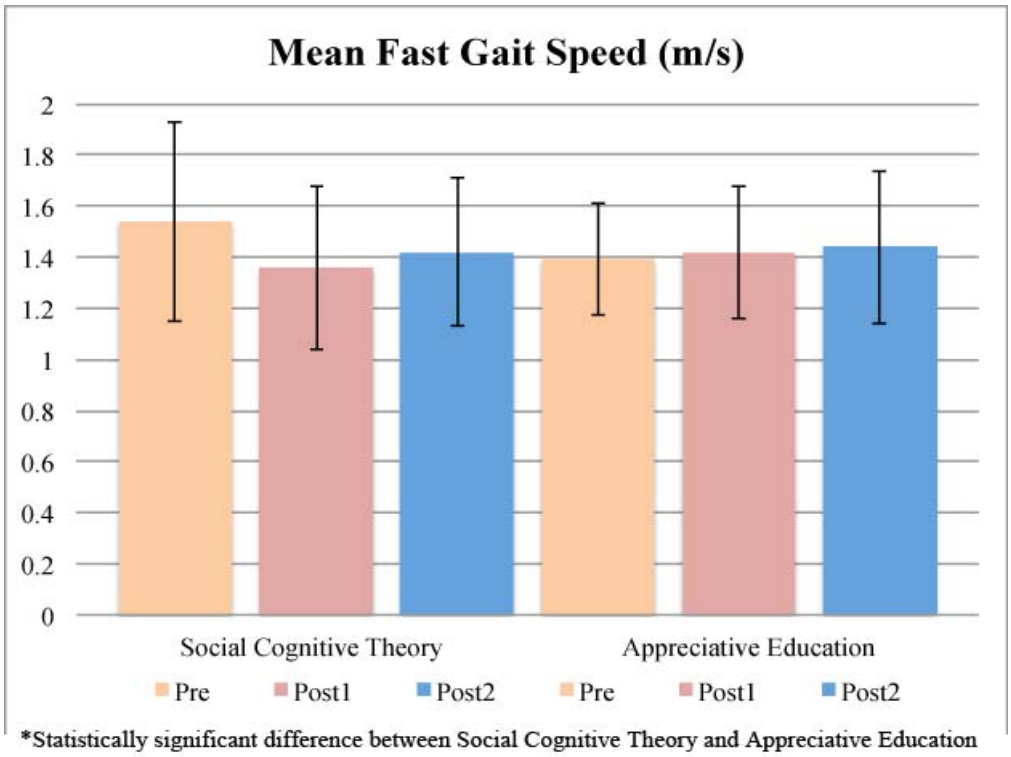


Figure 4.4 Mean Fast Gait Speed with SD

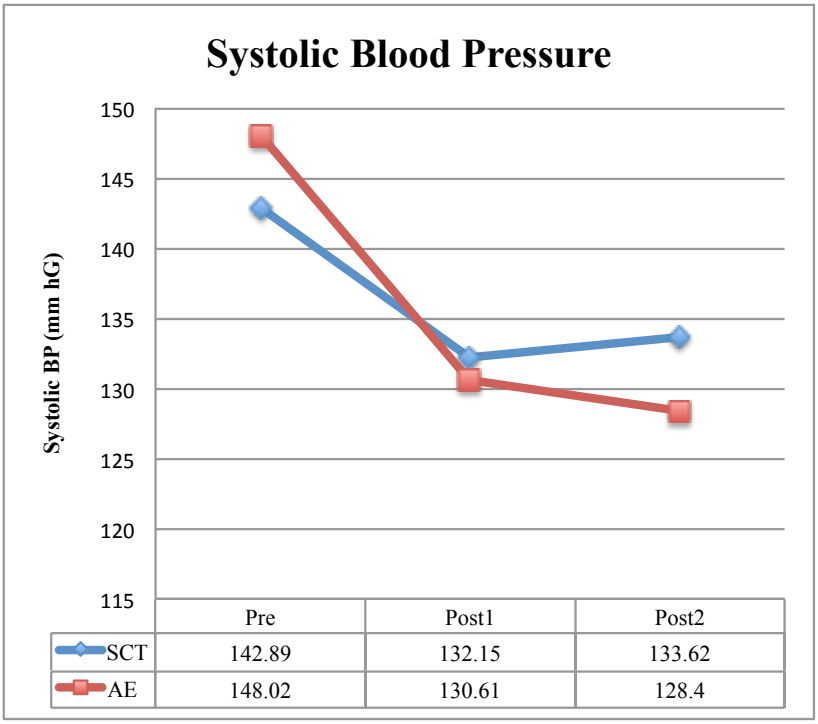


Figure 4.5. Mean Systolic Blood Pressure

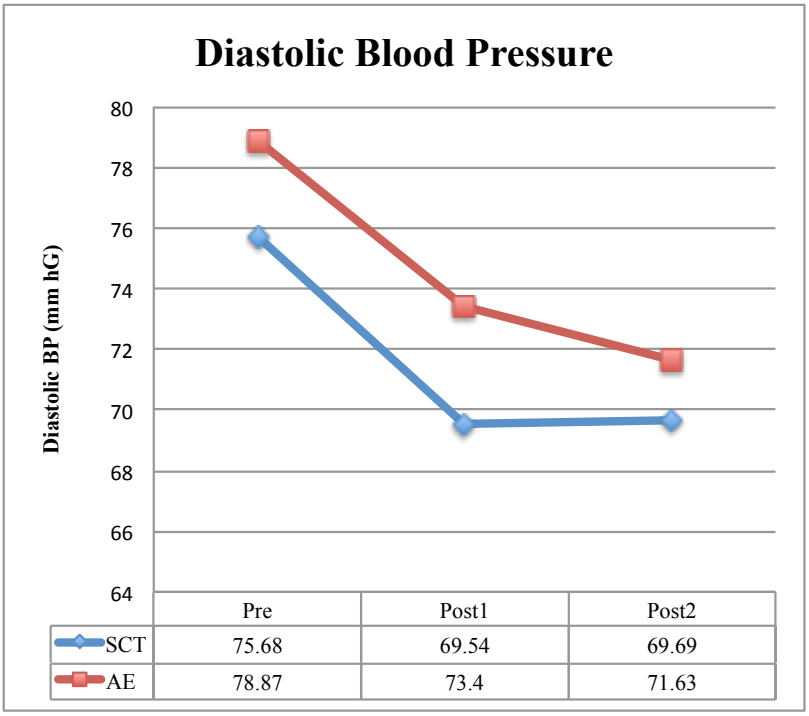


Figure 4.6 Mean Diastolic Blood Pressure

Theme #	*Collapsed Theme*	*Sub-theme*	*Code*	*Description*
Perception Themes				
1	**Peer influence**		7.1.4	Increased socialization
		advice & ideas	8.2.1	Peer perspectives
		challenges & support	8.2.3	Socialization
		successes	9.2.2	Socialization
			9.2.3	Peer perspective
2	**Health relationships & personal goals**		2.2.1	Health Relationships
		bucket list	3.2.9	Relationships
		reflection	8.1.1	Awareness, goals & action
		taking action	8.1.3	Taking action toward goals
		noticing connections	9.2.5	Health awareness
			9.2.6	Making these changes is hard
			10.2.4	Health Awareness
3	**Enjoyment**		2.2.3	Enjoyment
			8.2.5	Enjoyment
			9.2.1	Enjoyment, enthusiasm & encouragement
			10.2.3	Enjoyment
				codes not included in any of the themes
			3.1.7	Good reminders, no changes
			6.1.6	No change or wasn't hard
			7.1.8	No changes
			8.2.4	Little or no impact
			3.1.6	Attendance
			9.1.3	Advertise & encourage class to others
			2.1.99	Other
			2.2.99	Other
			5.1.99	Other
			5.2.99	Other

Figure 4.7 Final Codes Collapsed to Perception Themes and Sub-themes with unused codes

Theme # Collapsed Theme	*Sub-theme*	*Code*	*Description*
Health Behavior Themes			
1 **Accountability**		2.1.7	Monitoring, recording & challenges
	food	3.1.4	Monitoring, recording & challenges
	physical activity	4.1.3	Monitoring, recording & challenges
	blood pressure	5.1.3	Monitoring, recording & challenges
		6.1.2	Monitoring & recording
		7.1.2	Awareness, monitoring & recording
2 **Consumption changes**			
	fruits & vegetables	2.1.0	Eating Awareness
	water	2.1.6	Label reading & Purchase changes
	salt & sugar	3.1.0	Eating Awareness
		3.2.1	Nutrition content
		4.1.1	Nutrition
		5.1.1	Eating Awareness
		6.1.1	Give up or reduce unhealthy food choices
		6.1.3	Healthy food practices
		7.1.1	Eating awareness
		9.1.1	Eating Awareness
		10.1.1	Nutrition
3 **Learning aids & activities**		2.1.4	Learning Aids
	samples & recipes	2.2.2	New concepts
	test-tubes & label reading	3.2.8	Learning aids
	grocery tour	8.2.6	Learning aids
		9.2.9	Learning aids
		9.2.7	Learning new information
4 **Other behavior changes**		2.1.3	Exercise, PA
	physical activity	3.1.5	Exercise
		3.2.3	Physical activity content
		4.1.2	Physical Activity
		5.1.5	Exercise, PA
		6.1.4	Movement
		7.1.3	Movement
		8.1.2	PA, walking
		9.1.2	Exercises, PA
		10.1.2	Movement
	stress management	3.2.4	Stress management content
		5.1.6	Stress management
		5.2.2	Mental, emotional
		6.1.5	Stress management
		7.1.7	Mental health
		8.1.4	Stress & sleep management
		8.1.5	Improved sleep habits
		9.1.4	Stress management skills
		10.1.3	Stress Management
		10.2.2	Mental, emotional
	blood pressure control	3.2.5	Medication content
		5.1.7	Medications & supplements
	unintended benefits	4.1.4	BMI & weight
		5.2.1	Physical
		9.2.8	Physical outcomes
		10.2.1	Physical

Figure 4.8 Final Codes Collapsed to Health Behavior Themes and Sub-themes

CHAPTER 5

DISCUSSION

The purpose of this study was to compare the effectiveness of two health behavior change models, Social Cognitive Theory (SCT) and Appreciative Education (AE), in an established intervention, designed to control hypertension in community-dwelling older adults. This is the first known application of the AE approach to a multi-disciplinary hypertension control intervention. This community based educational intervention, Lifestyle University (LU), is one arm of the Frost-Hajjar model of hypertension control (I.M Hajjar et al., 2005) developed to improve hypertension control using a multidisciplinary health behavior change educational course. This mixed-methods study modified the SCT small group activity segment of the LU intervention by replacing it with an activity component based on the AE approach. This study was able to show that the modified small group activity time in the AE group was successful in increasing both self-selected and fast walking speeds while both of these measures declined in the SCT group (Table 4.1).

5.1 RESEARCH QUESTION 1

The first research question was designed to measure changes over time in seven variables: 1) systolic BP, 2) diastolic BP, 3) BMI, 4) fruit and vegetable consumption (EATS), 5) physical activity (IPAQ), 6) self-selected gait, and 7) fast gait between the control SCT approach and the experimental AE approach. The modest increase in both

self-selected and fast gait speed in the AE groups, the only significant difference between groups over time, could be associated with the positive focus of the AE method. Walking speed, a complex behavior that includes the lungs, heart, circulatory, musculoskeletal and nervous systems, correlates with functional ability in older adults (Fritz & Lusardi, 2009). Reduced gait speed, a modifiable ability (Hardy, Perera, Roumani, Chandler, & Studenski, 2007), has been associated with hypertension and/or cardiovascular disease (I. Hajjar et al., 2009). A 14-year follow-up study of community-dwelling older adults, with good function, found a more rapid decline in gait speed in those with hypertension (Rosano et al., 2011). Yet, it is possible for older adults to increase their gait speed on their own (Hardy et al., 2007) or through intervention (Plummer-D'Amato et al., 2012; Wang et al., 2015).

Positive aging attitudes have been associated with increases in walking speed (Hausdorff, Levy, & Wei, 1999) in older adults who were subconsciously influenced by positive aging stereotypes. A physical activity intervention, designed to include 'views-on-aging' found that positive attitudes towards aging resulted in increased physical activity and walking speed (Wolff, Warner, Ziegelmann, & Wurm, 2014). When individual walking speeds were examined in the AE group, 50% of the participants made substantial meaningful walking speed increases of at least 0.10 meters/sec (Perera, Mody, Woodman, & Studenski, 2006) , between pre-test and post-test 1, while only 16% of the SCT group made meaningful increases (Table 4.2).

The AE group activities were designed to foster a safe environment (disarm) where participants were encouraged to identify (discover): 1) personal dreams and goals 2) strengths that supported the fulfillment of these dreams and goals, 3) and person(s)

who would support (design) the realization (deliver) of these goals. Participants were invited to recall past successes (discover), and be open to new possibilities (don't settle), while unearthing their strengths and passions. Additionally, they were guided in identifying the influence that practicing healthy choices (design) would have on their ability to accomplish their dreams and goals (deliver). The activities in the AE group fostered positive attitudes towards aging (don't settle). This finding suggests that the positive aging messages that participants experienced during the AE approach may have been helpful in increasing self-selected gait speed, at post-test 1, in the LU educational intervention.

While the remaining measures did not show significant differences between groups across time (Table 4.1 and 4.3), changes across all participants were significant (Table 4.5) and illustrate the effectiveness of the LU intervention. Results from repeated measures for all completers from the LU intervention showed significant improvements in systolic BP, diastolic BP, BMI, and EATS measures, with no significant differences between groups in these variables (Table 4.4).

The 12.69 ± 17.83 mm Hg decrease in systolic BP for all completers across all participants (Table 5.1) was similar to the 11.8 ± 2.8 mm Hg results from an earlier LU intervention reported by Hajjar et al. (2007). The results from this current study for all completers across all participants, reported a 5.94 ± 9.04 mm Hg drop in diastolic BP (Table 5.1) whereas the results from the earlier LU study (I. M. Hajjar, Dickson, Blackledge, Herman, & Watkins, 2007) reported no change in diastolic BP. The PREMIER lifestyle intervention trial, reported mean systolic BP decrease of 11.1 ± 9.9 mm Hg and diastolic decrease of 6.4 ± 6.8 mm Hg in their DASH diet group (Appel et

al., 2003) while a decrease of 13.1 ± 21.1 mm Hg for systolic BP and 5.6 ± 11.2 mm Hg for diastolic BP was reported for an African American Senior Center trial (Fernandez, Scales, Pineiro, Schoenthaler, & Ogedegbe, 2008). The reduction in mean (SD) BMI from pre-test to post-test 2 was 0.45 (1.18) for all LU completers across all participants (Table 4.5).

The median (SD) increase in fruit and vegetable consumption, for all LU completers across all participants (Table 5.1), as measured by the EATS was 0.76 (1.88) that is similar to the 2007 LU results of a 1.3 serving increase (I. M. Hajjar et al., 2007) in daily fruit and vegetable consumption. In the PREMIER intervention, the mean increase in daily fruit and vegetable servings in the DASH group was 3.0 (3.6). The DASH intervention group received counseling and instruction on diet changes which set a goal of 9-12 daily servings of fruits and vegetables. In the LU intervention, participants set their own dietary goals.

In summary, the mean self-selected and fast gait speed increase in the AE group were the only significant differences between the groups across time. When looking at changes made by all LU completers across all participants, there were significant changes in systolic BP, diastolic BP, BMI, fruit and vegetable consumption (Table 5.1), illustrating the effectiveness of the LU intervention overall but not necessarily indicating one approach to the intervention is more effective than another.

5.2 Research Question 2

The aim of the second research question was to identify the participant perspectives and health behavior differences between the SCT and AE group after the intervention. Three perspective (Table 4.8, Table 4.9, and Table 5.2) and four behavior

change themes (Table 5.3, Table 5.4, Table 5.5, and Table 5.6) were identified. The relationship between: 1) the LU course content, 2) SCT, AE pilot and AE groups, and 3) the qualitative themes, is illustrated in Figure 5.2.

CHANGES IN PERCEPTION The intent of the intervention was to change perceptions and health behaviors in older adults regarding the importance of monitoring and controlling hypertension. There were changes in before and after perceptions, the differences in responses between groups were not significant. The number of participants and the corresponding percentages of change for each question are reported in Table 4.7. The before and after perceptions changed about the importance of monitoring daily activities by recording food intake, physical activity, stress management, medication management and blood pressure measurement in a journal. All participants (100%) reported that this activity was "not at all important" before the intervention and nearly three quarters (71%) reported this activity being "very important" after the intervention (Table 4.7). This was a difficult activity that was time consuming for those who monitored any of these activities. One participant, who survived a stroke, had difficulty holding a writing implement, making writing a slow and tedious activity. The activity was revealing for the interviewees who chose to keep the journal, as they were often surprised to see all the things that they had eaten during the day, without even thinking about it. Yet, not all participants recorded these daily activities. The before and after perception about the importance of a lower BMI changed by over half (53%) from "not at all or somewhat important" to "very important" (79%) as reported in Table 4.7. This change in perception is in alignment with the mean (SD) decrease in BMI of 0.45 (1.18) from pre-test to post-test 2 as reported in Table 4.5.

It's possible that these changes in perception may have contributed to the lower BP and BMI measures reported in this intervention. Monitoring of BP and food consumption has been reported along with BP and BMI reductions in other research. In a Birmingham general practice intervention, when patients who were instructed how to monitor their blood pressure were compared with controls, mean systolic BP dropped by 4.3 mm Hg and a BMI decrease was reported in the intervention group (McManus, 2005). The intervention group in a dietary study with cooking instructions resulted in a 6 mm Hg decrease in systolic BP, 4 mm Hg decrease in diastolic BP and a 0.5 BMI reduction in the all male intervention group, who monitored their diet as part of the intervention (Kitaoka et al., 2013). Lifestyle changes involving monitoring of BP (McManus, 2005) and food consumption (McManus, 2005; Yu et al., 2014) are important non-pharmacological health behavior change tools.

When participants were asked about the importance of walking speed before and after the intervention, their perceptions of importance increased by over a third (40%) from "not at all or somewhat important" to "very important" (56%) as reported in Table 4.7. This is the only variable where the AE experimental group's increase in both self-selected and fast walking speed was significantly different from the SCT control group. There was a greater change in the "very important" response from the AE group, an increase of half (50%) from before to after the intervention (Table 4.7). The greater perception change in importance of increased walking speed in the AE group reflects the actual difference in behavior change measured in this study. A higher percentage of participants in the AE group (50% verses 16% SCT) made a substantial meaningful increase of at least 0.10 meters/sec (Perera et al., 2006) in self-selected walking speed at

post-test 1. The positive AE activity of recalling past strengths to assist in making health behavior changes combined with setting personal goals fostered a positive attitude toward aging (Hausdorff et al., 1999), which may have contributed to this perception change in walking speed.

After the intervention, all interviewees (100%) reported increasing fruit and vegetable consumption as being "very important". The before class perceptions of "not at all or somewhat important" changed in nearly two-thirds (64%) of those interviewed to "very important" (Table 4.7). This perception change is supported by the EATS quantitative measure, which indicated a 0.76 increase in median fruit and vegetable consumption between pre-test and post-test 2 (Table 4.5). Increasing fruit and vegetable consumption contributes to hypertension control (Appel et al., 2003; James A. Blumenthal et al., 2010; Ignarro, Balestrieri, & Napoli, 2007; Njeri M. Karanja et al., 1999). When older Japanese men were taught how to self-monitor their diets, they reduced their systolic BP, diastolic BP and sodium-to-potassium ratio (Kitaoka et al., 2013).

The perceptions about regular physical activity before and after the intervention changed by nearly half (41%) from "not at all or somewhat important" to "very important" (91%). The physical activity results measured by the IPAQ did increase between pre-test to post-test 2 (Table 4.5) yet this median increase was not significant. Challenges with use of the IPAQ are discussed under study limitations. Physical activity was an important sub-theme in the qualitative analysis. Increasing levels of physical activity in hypertensive older adults is a health behavior that can contribute to hypertension control (Ignarro et al., 2007; Stewart et al., 2005; Yu et al., 2014)

Perceptions about the importance of stabilizing or lowering blood pressure increased by over one third (38%) as 88% of the interviewees found this perception to be "very important" after the intervention (Table 4.7). As participants changed their perceptions about the importance of lowering or stabilizing their BP during the LU course, their health behaviors changed as illustrated in Figure 5.1. The health behavior change associated with successful hypertension control was evident as the mean changes in systolic and diastolic BPs decreased from pre-test to post-test 2 for all completers across all participants (Table 4.5). Since the same blood pressure educational content was presented to both groups it is not surprising that the reported perception and health behavior changes were similar between groups. All interviewees had their BP taken at each class. For those participants who did not monitor their BP at home, they could see how their BP changed as their bi-weekly readings were recorded. The RN, who completed these measures, talked with the participants about their BP at each class. This was a big change for one interviewee who commented that in the past, her BP was taken annually. The participant 'before perception' about hypertension control may have been influenced by a change in attitude (based on new information from LU course) toward this monitoring health behavior. The LU course experience supported an intention to change and the behaviors led to new 'after perception' and behavior change (Figure 5.1). In the sufficiency assumption, part of the theory of planned behavior (Ajzen, 1991, 2011), when an attitude toward a behavior changes, this leads to an intention to change the behavior, with the resulting behavior change being more likely.

PEER INFLUENCE Theme one from the qualitative results, highlighted the importance that interviewees attributed to the external influence of social support when

attempting challenging health behavior change (Table 4.8). When we look at the SCT approach, three of the four sources of self-efficacy involve social support. The LU intervention was designed to use CHAs to provide health behavior modeling for the participants by sharing: 1) vicarious experiences, 2) social persuasion, and 3) successful strategies for controlling physiological and affective states (Bandura, 1989). This modeling was intended to assist participants in making health behavior changes in the SCT group. The responses reported by the SCT interviewees indicate that the small group activities accomplished what they were intended to achieve. Some participants examined the barriers and benefits (Bandura, 1998) to the health behavior goals that they identified for themselves. In addition to the modeling from the CHAs, group participants the shared vicarious experiences and social persuasion (Bandura, 1998) with each other. The members of the small groups supported each other when they shared their strategies for making health behavior changes. Peer influence is a double-edged sword as it can both assist and deter health behavior change. Negative peer influence (Khan et al., 2014) was found to significantly influence compliance in hypertensive patients whose peers continued to discourage the recommended dietary changes. The peer influence reported in these qualitative findings generally served as an encouragement that supported health behavior change.

HEALTH RELATIONSHIPS In the AE group findings, the six phases of the appreciative cycle: 1) disarm, 2) discover, 3) dream, 4) design, 5) deliver and 6) don't settle, were evident as interviewees made behavior changes based on personal internal guidance. Participants in the AE group found value in resurrecting (discover) personal goals (dreams) and the role of their health (design) in achieving goals (deliver) as part of

theme two (Table 4.9). Many participants from the AE small groups, established new (don't settle) or resurrected forgotten (discover) personal dreams (Bloom et al., 2013) and then acknowledged the influence that their personal health had on their ability (design) to fulfill those goals (deliver). This awareness (discover) provided the inspiration to change their perceptions about the importance of taking action (design) to initiate (deliver) and sustain new health behaviors (don't settle). For example, participants who were willing to examine (discover) the impact that current behaviors had on their health, (i.e., when I exercise or walk my blood pressure goes down, when I don't walk or exercise, my blood pressure goes up), changed their perceptions (design) about the importance of daily exercise. This new perception led to making new connections (Bloom et al., 2013) between their behaviors and health (don't settle). These connections may have provided the fuel needed to sustain (deliver) beneficial health behavior changes.

When participants identified their dreams and goals, what they still wanted out of life (discover and dream), there was a reason to make the health behavior changes (design) presented during the class so that they could do (deliver) what they wanted to do, (i.e. visit all 50 states or be a movie extra). The idea of engaging older adults in a way that encourages them to realize their visions, dreams and goals was proposed in the Empowerment Paradigm (Haber, 2009). Responses from AE group interviewees, described activities that they still wanted to engage in, that aligned with segments of Haber's description of how retiring boomers are different from previous geriatric cohorts. Once AE participants realized that their life wasn't over yet (dream), they were interested in learning how to apply course content (design) to improve their current limiting health conditions (deliver). They had a reason to: 1) modify intake of various foods, 2) manage

stress, and 3) increase physical activity and walking speed. Personal dreams and goals provided the fuel for these changes.

The AE health relationship theme two, was characterized by: 1) self- reflection, 2) identification of strengths, dreams, and goals, and 3) relationships between functional ability, health and quality of life. These characteristics were personal and generated from internal sources. This was fundamentally different from the peer influence SCT group theme that was externally influenced by CHAs and other participants whose focus was on social influences (vicarious experience, social persuasion, and successful strategies for controlling physiological and affective states). Their objective was to learn how to overcome barriers in order to be successful in make health behavior changes. The AE approach built on: 1) past personal successes, 2) affirmative thinking, 3) new possibilities, 4) personal strengths and passions, and 5) individual plans of action. The SCT approach is based in: 1) changing problem behavior, 2) deficit thinking, 3) limited vision, 4) overcoming obstacles, and 5) adoption strategies that work for others.

The differences between these two theoretical approaches were clearly reflected in the responses from the interviewees. These two themes, peer influences (SCT) and health relationships (AE) approach health behavior change from different perspectives. The external perspective of the SCT group is largely based in social modeling and persuasion whereas the internal perspective of the AE group comes from personal dreams, goals, and strengths within each individual.

ENJOYMENT Theme three revealed that interviewees in both the SCT and AE courses identified enjoyment (Table 5.2) as an important element that supported learning during these LU courses. Several aspects of this course were identified as enjoyable; 1)

class structure, 2) learning new information, 3) companionship, and 4) food samples. Enjoyment as component of a health behavior change intervention is a novel theme, largely absent in the literature. Enjoyment was identified as a motivation for walking during the maintenance phase of an intervention for hypertensive older adults (Lee, Avis, & Arthur, 2007). Since the qualitative data indicates that LU participants enjoyed the learning process, they may be more likely to apply this new information, which could result in further or sustained health behavior change regardless of the model used (Figure 5.2).

ACCOUNTABILITY As part of theme adults who monitored their own behaviors, i.e., food consumption, physical activity and blood pressure, were more likely to engage in behavior change because they became aware of how their actions contributed to their current chronic health conditions (Table 5.3). The participants learned that the typical American diet and sedentary lifestyle (I. Hajjar et al., 2006; Pescatello, 2005) contributed to hypertension (Appel et al., 2003; Chobanian et al., 2003; Sacks et al., 2001). Those who monitored their behaviors were able to recognize how their current health behaviors impacted their hypertension control. When they modified these behaviors (i.e., reduced sodium, increased fruit and vegetables), they experienced physical changes (i.e., reduction in BMI, systolic and diastolic BP).

CONSUMPTION CHANGES, LEARNING AIDS AND ACTIVITIES Theme three also uncovered that older adults can make beneficial dietary changes and that multi-sensory learning opportunities might make these changes more likely (Table 5.4 and Table 5.5). These learners didn't just hear new nutrition information, all senses were engaged (i.e., taste, smell, sight and touch) as they: 1) smelled, tasted, and touched new foods; 2) saw

(test-tubes) and heard how much salt, fat and sugar were in the foods they ate; and 3) visited a grocery store to read and compare prepared food labels, and learn about various fruits and vegetables. These multi-sensory activities brought the nutrition content to life for these older adults. For example, when participants were willing to sample foods that they may have never tasted before, they were often surprised at how good food could taste that was not prepared with salt. They were exposed to new vegetables, fruits, whole grains, nuts, seeds, herbs, spices, flavored waters and teas. In a novel study, older adults participated in food tasting activities at a Canadian recreation center for seniors. Nearly half (42.6%) reported that they would not have prepared the foods if they had not tasted them (Manilla, Keller, & Hedley, 2010). The older Japanese men who learned to cook foods that were low in sodium and high in potassium (Kitaoka et al., 2013) experienced multi-sensory learning that may have contributed to their reduced sodium-to-potassium excretion ratios, systolic and diastolic BP. During the LU courses, the food samples featuring vegetables, fruits and no salt recipes along with other multi-sensory activities, may have contributed to the mean increase in fruit and vegetable consumption for all LU completers across all participants (Table 4.5).

OTHER HEALTH BEHAVIOR CHANGES A final idea that surfaced in theme three was that as result of the class (Table 5.6), participants began to evidence a range of health behavior changes including: 1) increased physical activity, 2) successful stress management, 3) hypertension control, and 4) unintended benefits (Table 5.9). Interviewees recognized the impact that participation in physical activity had on other chronic health conditions i.e., hypertension (Chodzko-Zajko et al., 2009), cholesterol levels (Morgan, Tobar, & Snyder, 2010) and bone density (Chastin, Mandrichenko,

Helbostadt, & Skelton, 2014). They were able to incorporate stress management techniques learned in class, into their daily lives: 1) getting quiet and breathing; 2) substituting healthy foods for comfort foods; and 3) letting go of the small stuff. These changes had a positive impact on hypertension control. Some participants experienced the primary objective of this intervention, hypertension control. Participants and their doctors were delighted when previously uncontrolled hypertension was under control. Some interviewees were able to reduce medications (Ziv et al., 2013). Several participants attended a subsequent LU course (offered after the last courses that were part of this research) because they were so pleased with the results achieved during the first course.

Recognition of the significance of practicing healthy lifestyle behaviors (nutrition, weight control, physical activity and stress management) was an important participant realization, since hypertension is often a precursor to other chronic conditions i.e., diabetes, stroke, urinary, and other cardiovascular diseases (Dagogo-Jack et al., 2010; I. Hajjar et al., 2006). Participants reported reducing medication usage for other chronic conditions in addition to having more energy and stamina to do the things they enjoyed doing.

In summary, interviewees experienced positive changes from participation in the LU intervention. Those who engaged in the health behavior changes that were presented during this multi-faceted lifestyle intervention reaped a variety of benefits; 1) systolic BP reductions, 2) diastolic BP reductions, 3) lower weight and BMI (new clothes), 4) increased walking speed, 5) stress relief, 6) healthy eating practices, 7) increased physical activity, 8) companionship and social support, 9) medication reduction, and 10)

reawakening of dreams and goals resulting in a new lease on life. Overall the results of this study indicate the use of lifestyle interventions, with older adults, can be effective in reducing and controlling hypertension (Appel et al., 2003; Fernandez et al., 2008; Yu et al., 2014; Ziv et al., 2013). Interventions like the two models used here should be using them more extensively. The qualitative results of this study do not suggest that one model of LU is more effective than the other. The qualitative results, however do suggest participants reaped slightly different benefits depending on the model.

5.3 Study Limitations

Internal validity As described in Chapter three, individuals were not randomly assigned to the control or experimental group. Participants self-selected their intervention group based on the day of the week during the first set of LU courses with the SCT control classes on Tuesday and the AE experimental classes on Thursday. The offering of the next four courses was changed to two concurrent SCT courses offerings during the summer, and two concurrent AE courses during fall. To minimize the drop out rate, this course arrangement allowed participants to attend class on either course day. Participants were unaware of any differences between the courses. At pre-test, there was no significant difference between groups for age, gender, race, marital status, education or income. The rate for completers was similar for both groups and not statistically significant.

There may have been an effect from the time of year when these courses were offered, as enrollment was highest during the summer (n = 41) and spring (n = 36) courses when compared to the course enrollment for the fall courses (n = 19). During the two spring course offerings, both the SCT control (n = 19) and AE experimental (n = 17)

intervention were both presented. Both summer courses were SCT control (n = 40) while the both fall courses were AE experimental (n = 16) intervention. Another limitation could be the difference between the SCT control and AE experimental sample sizes and resulting class sizes as the SCT control (n = 60) had nearly double the number of participants as the AE experimental (n = 33) group.

Using a control group controls for threats due to history, maturation and testing. It does not control for instrumentation or attrition. To reduce the threat due to instrumentation, standard questionnaires were used during all data collections. Vision and comprehension were problems for some participants. The researcher, CHAs and graduate students present during each data collection, assisted individuals by answering questions about the various instruments. An effort was made to repeat and explain the instruments consistently during all data collections.

EXTERNAL VALIDITY To simplify recruiting, this study used a convenience sample, which limits the generalizability of the results. This study would have to be replicated with a sample, representative of the older adult population in the southeastern United States in order to generalize beyond this population.

INSTRUMENTS Participants appeared to have difficulty estimating their physical activity on the IPAQ and fruit and vegetable consumption on the EATS. This incomplete measurement, resulted in removal of participants with missing values from the analysis, this reduced n limited power since reporters activity may be higher than those who were dropped. Modifications to improve the collection of this data include: 1) checking each instrument for completion then providing assistance for incomplete entries; 2) providing group training on instrument completion prior to administration; 3) having one-on-one

administration of the instruments with a trained researcher; or 4) using other data collection methods, i.e. pedometer or accelerometer for physical activity, journal or dairy for fruit and vegetable consumption.

USE OF COMMUNITY HEALTH ADVISORS CHAS AND CONTENT PRESENTERS

The use of CHAs was an important component of the original LU intervention. The researcher used the CHAs and presenters who had been involved with earlier courses that were trained to: 1) present course content, 2) provide guidance for participants, and 3) lead small group discussions. There was a wide range of variance in the ability of the CHAs, who contributed to the presentation of this intervention, in providing the necessary services listed above to present this course. There were CHAs and presenters who did not model use of the content taught in their personal behaviors during classes. The results of this study could be improved with the following modifications: 1) providing specific training for CHAs involved in future studies, and 2) choosing CHAs and presenters who incorporate the healthy behaviors they present during LU in their daily lives.

ATTENDANCE AT MULTIPLE COURSES Since this intervention had been previously offered, there were three interviewed participants, who acknowledged taking the LU course prior to those offered during this research. There were also participants who enjoyed taking the course for the first time during this study, who then returned to attend subsequent courses. The LU intervention was offered to participants, at no charge, by the local senior center, funded by a local United Way grant. For this reason, all persons who registered for the course were permitted to attend. The course was presented under the same grant, by the researcher, before and after the end of this study.

As a result, some interviewees participated in the course multiple times prior to the scheduled interviews for this study. Attending multiple courses may have favorably impacted the perceptions and health behaviors of the interviewees who attended multiple courses. This was not true for all multiple class interviewees. The health behavior changes of two participants, who attended earlier courses, were not sustained over time. Regarding the participants who attended multiple courses, data from only the first course attended was included in the quantitative analysis. This research could have been improved by not interviewing participants who attended multiple courses.

MEDICATIONS This study did not track medication use or change, as this was a community based educational intervention. Some participants did acknowledge medication changes and reductions as directed by their health care provider. The results from this study could have been improved if BP medication changes had been tracked.

5.4 CONCLUSION AND RECOMMENDATIONS FOR FUTURE RESEARCH

This study sought to answer two research questions. The first question investigated whether the AE approach was more effective than the SCT approach in promoting health behavior change when applied to an educational intervention in older adults to control hypertension. The primary value in this study is that it is the first to apply the AE approach to a health behavior change intervention. The small group segment of the established LU intervention, based on the SCT approach (goal setting, benefits and barriers, successes and solutions, and staying on track), was modified to incorporate use of the novel AE approach. This experimental AE approach linked personal goals with health behavior goals in the Appreciative Cycle (Bloom, 2008) (disarm, discover, dream, design, deliver and don't settle). The AE approach was more

effective than the SCT approach in improving the functional ability of gait speed, a complex activity (Fritz & Lusardi, 2009), which has been found to decrease with hypertension (Rosano et al., 2011) and advancing age (Ostchega, et al. 2004). It appears that older adults benefit from the identification of personal goals in conjunction with health behavior goals. When AE participants understood how their functional ability was associated with their ability to accomplish their personal goals, it became more important to sustain positive health behavior changes.

The AE approach was only used during the small group segment of the course and was found to be no more effective than the SCT approach in reducing BMI, systolic and diastolic BP or increasing physical activity and fruit and vegetable consumption in community-dwelling adults aged 50 and older. Future research using the AE approach with this or other interventions could examine the impact of positive health behavior change methods on hypertension control in association with gait, physical activity, stress management, fruit and vegetable consumption. An important question remains concerning how long these changes last and how they influence long-term hypertension control. A similar study with a follow-up protocol would be beneficial to determine the long term effects of the intervention.

The second research question sought to understand how participant perspectives and health behaviors after the intervention differed between the AE approach and SCT approach. When AE participants were encouraged to identify dreams and set goals, based on their strengths and prior successes, it became easier to develop plans of action (Bloom et al., 2013) than focusing on developing strategies to overcome barriers to change (Bandura, 1998). It appears that older adults benefit from the identification of

personal goals (Bloom et al., 2013) in conjunction with health behavior goals. When AE participants understood how their functional ability was associated with their ability to accomplish their personal goals, it became more important to sustain positive health behavior changes. The participants in this study enjoyed tasting samples of new foods, which was a multi-sensory educational aid that may have increased the likelihood of preparing new foods at home (Manilla et al., 2010) and fruit and vegetable consumption (Kitaoka et al., 2013). These are important findings that could not be gleaned from quantitative data. The rich detail of this qualitative research provided valuable insights about retirement and health behavior change possibilities awaiting older adults. Future research in the form of long-term case studies that track older adults might also be an important contribution to the literature.

Table 5.1 Mean Changes in Outcomes from Pre-test to Post-test 2 for All Completers

Variable	Range of changes	Changes from pre to post-test2 Mean (SD)
Systolic blood pressure (mm Hg)	(-53.70 - 17.30)	-12.68 (17.83)
Diastolic blood pressure (mm Hg)	(-26.30 - 16.30)	-5.94 (9.04)
BMI (lb/m2)	(-6.6 - 1.3)	-0.45 (1.18)
EATS* (average daily fruit & vegetable servings)	(-2.86 - 6.38)	0.76 (1.88)
Self-selected gait speed (meters/sec)	(-0.48 - 0.25)	-0.08 (0.18)
Fast gait speed (meters/sec)	(-0.59 - 0.30)	-0.08 (0.22)

*Note: outliers were dropped from the EATS analysis

Table 5.2 Enjoyment Perception Similarities Between SCT† and AE≈ Groups

Perception Similarities	
Theme 3	Example Quotes
Enjoyment	"I really enjoyed doing it, it was fun and I learned a lot." (SCT-59Su)∞ "I loved takin that class, I mean I, you know, had so much fun and I always get something out of it" (AE-39F)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	

Table 5.3 Health Behaviors Similarities Between Groups: Accountability

Health Behaviors	
Theme 1	Example Quotes
Accountability:	
Food	"For me to record everything was difficult. To keep track of everything, each meal that I tried to eat. But it was informative and it helped me to see how I needed to improve some areas" (SCT-45Sp)∞ "I, realize I watch it cause if I write down today, oh God, I, I didn't know I ate all that much, cause a cookie this morning and some toast with jelly and, later on and, cause I eat and I munch and eat all day." (AE-65F)∞
Physical Activity	"(Regular physical activity,) It's important but sometimes it's hard for me to work it in" (SCT-71Su)∞ "It also keeps a record of your activities, the exercise, and it makes you stop and look and say okay, what did I do today? Okay, did I exercise?" (AE-57F+)∞
Blood Pressure	"One thing I liked was keeping up with my weight and my blood pressure, which I'm kind of erratic about at home, but that was, that was constant." (SCT-73Sp)∞ "Writing down my blood pressure everyday and my sugar level everyday. I keep a record of that." (AE-53F)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	

Table 5.4 Health Behaviors Similarities Between Groups: Consumption Changes

Health Behaviors	
Theme 2	Example Quotes
Consumption Changes:	
Fruits & Vegetables	"(I've) always eaten vegetables and fruits all of my life but maybe not as much as I started eating after these classes...It was important but sometimes I got slack." (71 SCT)∞ "As I said earlier, in the beginning eating the fruit I really it's like I tried to hone in on that, I eat a piece of fruit before I eat breakfast, at least do it before lunch, at least I'm eating 2 pieces a day" (AE-85Sp)∞
Water	"I think the hardest thing for me to do was to drink more water (laughter) I don't like water! But I try and to drink it, before meals, I just really don't like water. But I need, I've just got to do that." (45 SCT)∞ "Yeah I'm drinking a lot more water than I ever have" (AE-24Sp)∞
Salt and/or Sugar	"Well, and decreasing my salt. I mean I no longer buy potato chips, I no longer buy those a, something that I liked a, goldfish, I don't buy those anymore. And I liked them. But they have salt in them, so I can't, I can't, they're more, I mean, if I had those, I'd exceed my, because I don't just eat a little bit, I eat the whole bag." (SCT-79+AE)∞ "eliminating some of those things that have found more enjoyable…some of the sweets that …I love cookies and I start restricting the amount of cookies that I eat. I start looking at the ones. I also started trying to look at well healthier ones and then I started looking at substitutes. And I found apples help a lot. Grapes help a lot, with the cookies…I also found myself trying to eat things that take my mind or my thoughts of food, a taste buds out of sugar. I found myself eating more yogurt" (AE-57F+)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	

Table 5.5 Health Behaviors Similarities Between Groups: Learning Aids and Activities

Health Behaviors	
Themes 3	Example Quotes
Learning Aids And Activities:	
Samples & Recipes	"you taught us by all the samples you gave us, how you could get the same flavor by using herbs, or honey, or nuts, you know, good nuts, or avocado" (SCT-75Sp)∞ "the samples that you gave us…I think that… was beneficial along with the cookbooks that you provided. I … made that… it was a, almond flour, little things, I have made those cakes and everybody has loved it." (AE-51Sp)∞
Test-tubes & Label reading	"Because I've carried high blood pressures since 1962, and on medication, seeing the physical results of how much salt was measured by one of our presenters, a it helped me tremendously to cut down on my salt intake" (SCT-71Su)∞ "I didn't know so, when, when that lady showed us in the little containers that the salt that was in different items I had no idea there was that much salt. Have mercy, tried to cut back on salt, and some of the sugar. I like sweets." (AE-65F)∞
Grocery Tour (optional activity)	"when I buy groceries I do…look and see… what's, what's in the stuff that, that I buy. (what helped you a, in making this change?) Well, I think it was… that tour we took, yeah the grocery tour (AE-27Sp)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	

Table 5.6 Health Behaviors Similarities Between Groups: Other Behavior Changes

Health Behaviors	
Theme 4	Example Quotes
Other Behavior Changes:	
Physical Activity	"my cholesterol is lower. Which is a combination of exercise and medicine. " (SCT-31Sp)∞ "we had one a discussion about exercise and what I've included now, as you get older, you know, your bone changes. So now I'm taking a class specifically as a result that, Body Pump, a because of it" (AE-57F+)∞
Stress Management	"I think I, that I'm stronger and I'm more assured with what I'm doing since when you get to be just a one, one and only person you gotta pay more attention. I have, there's things that it didn't help, I mean, except stress management. I never had stress but now I have money stress (That was helpful for you) Yes" (SCT-05Su)∞ "I eat in response to stress, food is, food is comfort for me and it's, it's, before, I would, if I was upset or stressed, I would eat something that I know was not good for me. But now, you know, I have the choice that I can go to the refrigerator and get an apple or celery sticks or carrot sticks or something, instead of something that's deadly." (AE-42F)∞
BP Control	"I did lower my blood pressure… that was one reason why…I wanted to come back, the second time, cause… it did lower" (SCT -34+AE)
Unintended Benefits	"I feel like I have a little bit more energy, with housework, and then trying not to get too tired at one time when I do things, to break it up, to have a break in between things. (So when you mentioned before moderation that's something that probably applies in here, so moderating your activities?) Some days (laughter), but not everyday. Some days have more in it than others. (Moderating activities some days.) Well it seems like I have more stamina, to do what I think I need to take care of." (SCT-71Su)∞ "I'm more conscious of what I eat, and I have lost 6 pounds. And so that's big for me. So I'm trying to stay on track by eating the right thing everyday. I'm very conscious of what I eat now. (And what's the timeframe been from when you start loosing this, reducing your weight?) A, it's been maybe about a month now, about a month." (AE-56F+)∞
† Social Cognitive Theory (SCT) ≈ Appreciative Education (AE) ∞ Participant number and group + Attended multiple courses	

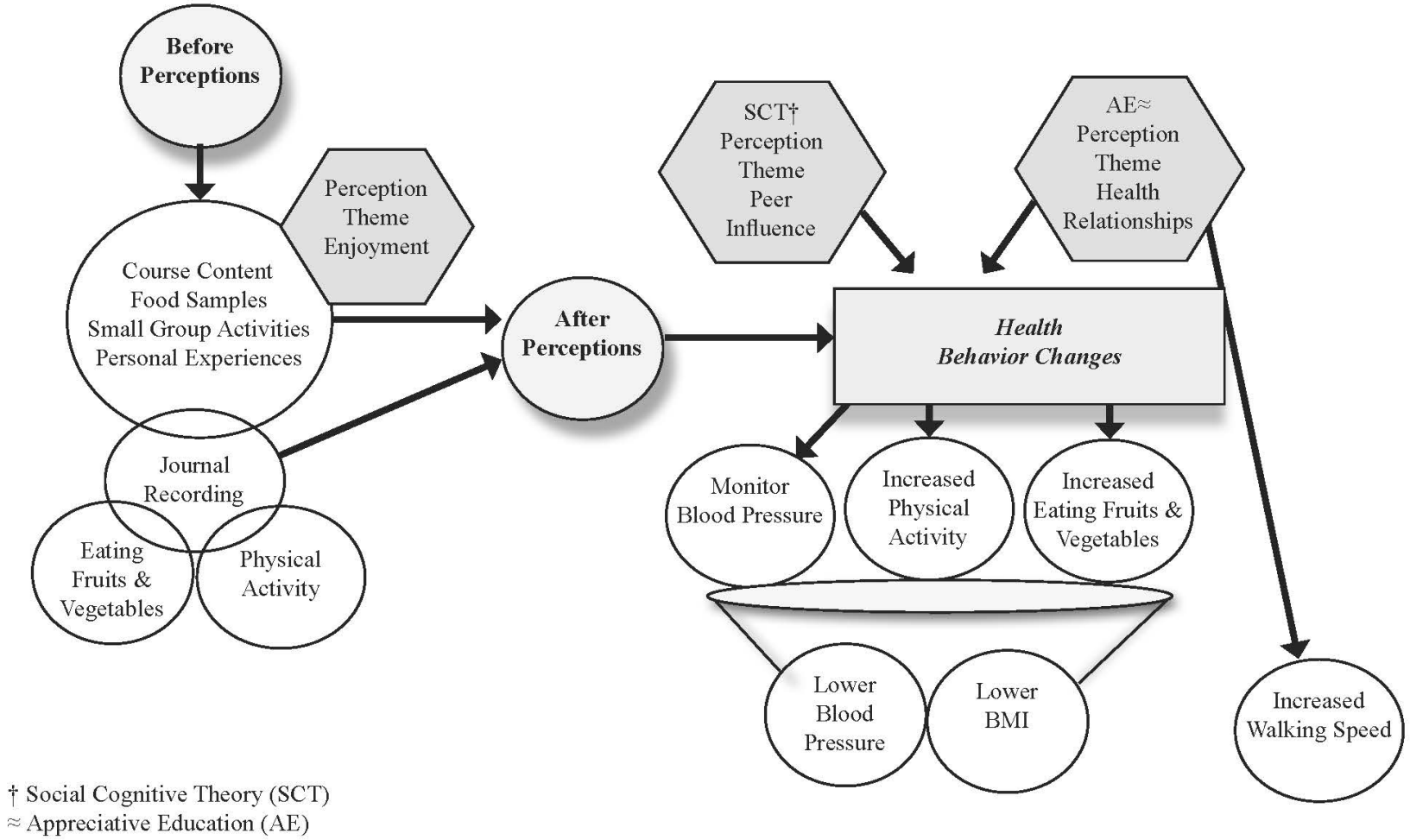


Figure 5.1 Relationship between changes in perceptions and health behavior changes..

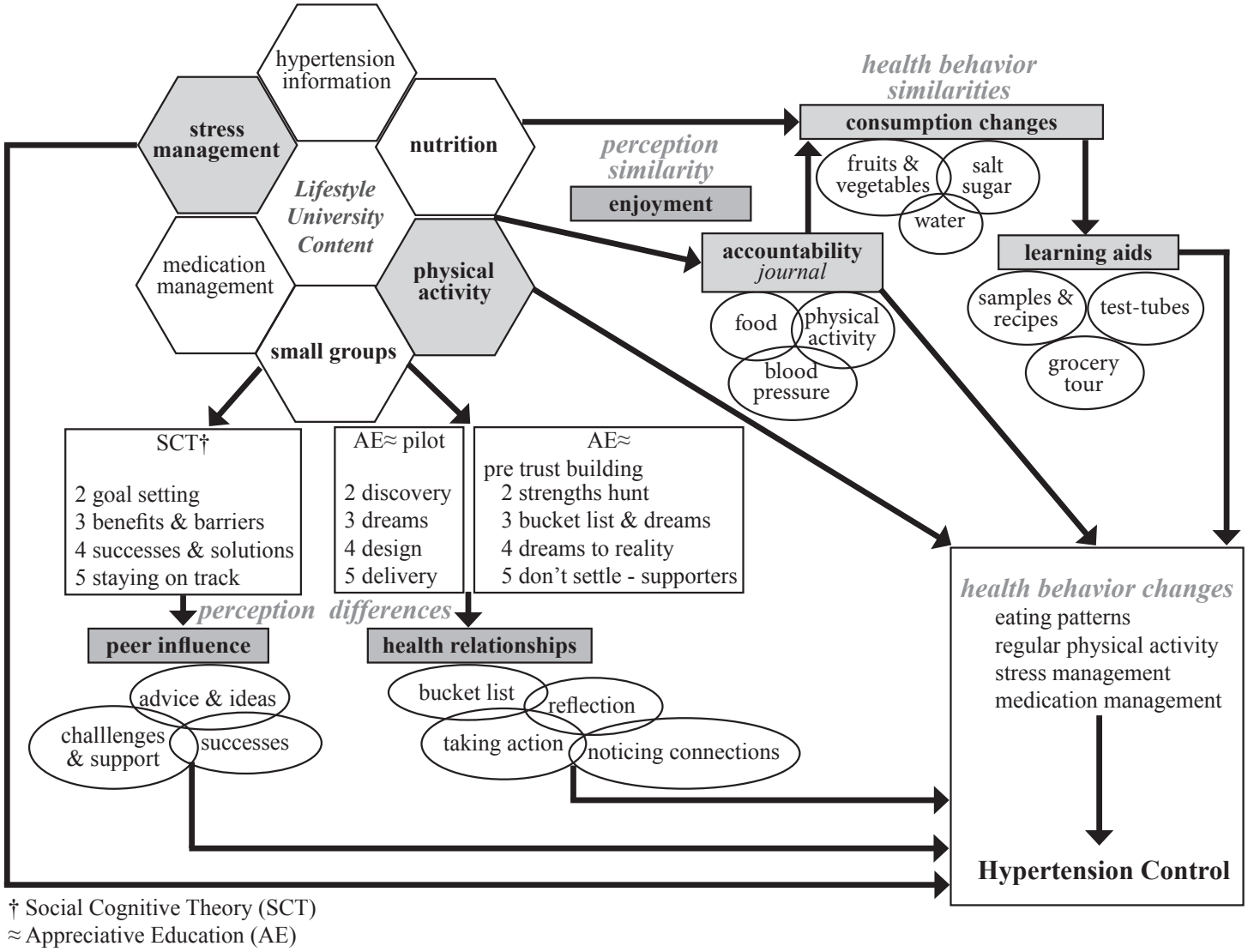


Figure 5.2 Lifestyle University Qualitative Theme Model

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PALMETTO HEALTH

Lifestyle University

It's never too late to learn about:
Weight Management * Nutrition * Physical Activity * Stress Management

Through six classes*, Lifestyle University will help you to learn how to make positive changes through hands-on activities and group discussions. Blood pressure and weight are measured before each class to track progress. Adults age 50 years and older are encouraged to attend! **Lifestyle University is FREE to all participants.** Enroll today and get the support you need for a healthier future!!!

Here is our class schedule*
Orientation Tuesday, March 6
Class 1 – Tuesday, March 13
Class 2 – Tuesday, March 27
Class 3 – Tuesday, April 10
Class 4 – Tuesday, April 24
Class 5 – Tuesday, May 8
Class 6 – Tuesday, May 22

**Attendance at orientation & all six classes is strongly recommended*

Classes will be held from 9:30 a.m.-12:00 p.m. with blood pressure and weight screenings open from 8:45 a.m.-9:30 a.m.
To register, please call Capital Senior Center at 803-779-1971

Lifestyle University Classes will be held at Bethel United Methodist Church
4600 Daniel Drive, Columbia, SC, 29206 in their Fellowship Building

PALMETTO HEALTH

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Here is our class schedule*
Orientation Thursday, March 8
Class 1 –Thursday, March 15
Class 2 –Thursday, March 29
Class 3 –Thursday, April 12
Class 4 –Thursday, April 26
Class 5 –Thursday, May 10
Class 6 –Thursday, May 24

**Attendance orientation & at all six classes is strongly recommended*

Classes will be held from 9:30 a.m.-12:00 p.m. with blood pressure and weight screenings open from 8:45 a.m.-9:30 a.m.
To register, please call Capital Senior Center at 803-779-1971

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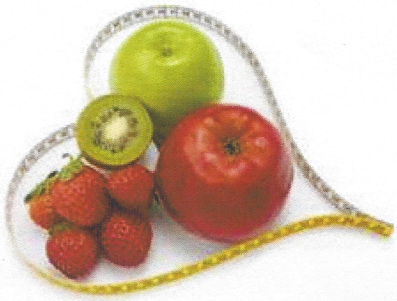
PALMETTO HEALTH

Lifestyle University

It's never too late to learn about:
Weight Management * Nutrition *
Physical Activity * Stress Management



CLASSES AVAILABLE TUESDAYS **OR** THURSDAYS

Through six classes*, Lifestyle University will help you to learn how to make positive changes through hands-on activities and group discussions. Blood pressure and weight are measured before each class to track progress. Adults age 50 years and older are encouraged to attend! **Lifestyle University is FREE to all participants.** Enroll today and get the support you need for a healthier future!!! All Classes begin at **8:45AM-12:00PM** and include blood pressure and weight screenings.

Choose a Tuesday OR Thursday Schedule:

Class Schedule **1***	Class Schedule **2***
ORIENTATION-	**ORIENTATION-**
Tuesday, March 6	**Thursday, March 8**
Class 1 – **Tuesday**, March 13	Class 1 –**Thursday**, March 15
Class 2 – **Tuesday**, March 27	Class 2 –**Thursday**, March 29
Class 3 – **Tuesday**, April 10	Class 3 –**Thursday**, April 12
Class 4 – **Tuesday**, April 24	Class 4 –**Thursday,** April 26
Class 5 – **Tuesday**, May 8	Class 5 –**Thursday**, May 10
Class 6 – **Tuesday**, May 22	Class 6 –**Thursday**, May 24

**Attendance at all six classes is strongly recommended*

To register, please call the Capital Senior Center at 803-779-1971.

Lifestyle University Classes will be held at Bethel United Methodist Church 4600 Daniel Drive, Columbia, SC, 29206 in their Fellowship Building.

Capital Senior Center Email to Members

Sign Up NOW for Lifestyle University- Spring Session

Hurry! Deadline to sign up is Mon. March 5, 5PM.

Orientations are March 6 OR March 8, 8:45AM. Classes begin the following week, Tuesdays OR Thursdays.

Through six classes*, Lifestyle University will help you to learn how to make positive changes through hands-on activities and group discussions. Blood pressure and weight are measured before each class to track progress. Adults age 55 years and older are encouraged to attend! **Lifestyle University is FREE to all participants.** Enroll today and get the support you need for a healthier future!!! All Classes begin at 8:45AM-12:00PM and include blood pressure and weight screenings.

To register, CLICK HERE

Lifestyle University Classes will be held at
Bethel United Methodist Church
4600 Daniel Drive, Columbia, SC, 29206 in their Fellowship Building.

Press Release

Lifestyle University

Starting Tuesday, March 6th, the Capital Senior Center is presenting Lifestyle University, a program designed specifically for seniors to help them form healthy habits effective at reducing hypertension and other conditions related to aging.

Developed by researchers from the University of South Carolina and Palmetto Health, Lifestyle University teaches simple, effective tools and techniques to help older adults, including those with chronic diseases, remain vital and self-sufficient.

Although aging is inevitable, engaging in an active lifestyle that focuses on stress management, proper medication management, diet, and physical activity can deter the onset of chronic illness.

The benefits of physical activity and lifestyle habits targeted by the program include reducing blood pressure, managing weight, and controlling diabetes. Further, research indicates that regular physical activity also reduces the occurrence of colon, uterine, breast, and prostate cancer.

Hands-on activities, group discussions, weekly goal setting, journaling, demonstrations and occasional field trips provide an environment for positive lifestyle changes. The instructor is Mary Katherine Benya, MA, Doctoral Teaching and Research Assistant, University of South Carolina.

Lifestyle University will be held at Bethel United Methodist Church, 4600 Daniel Dr., Columbia, from 9:30 a.m. to Noon every other Tuesday or Thursday from March 13th through May 24th with an orientation on Tuesday March 6 and Thursday March 8.

Blood pressure and weight screenings are open from 8:45 a.m. – 9:30 a.m. before each class.

Lifestyle University is free and open to the public, but participants must be over the age of fifty. Class size is limited to 20 persons. Please indicate if you wish to be in the Tuesday or the Thursday class.

To register, or for more information, call the Capital Senior Center at 803-779-1971.

Email to Bethel United Methodist Church Members

Hi everyone,

I hope that you are doing well! Bethel is working with the Capital Senior center to offer a new program this spring for Older Adults called Lifestyle University. Lifestyle University is a program designed specifically for seniors to help them form healthy habits effective at reducing hypertension and other conditions related to aging. Lifestyle University will be held at Bethel United Methodist Church, 4600 Daniel Dr. in Forest Acres. Please share the information in the attached document with your members concerning spring schedule. Lifestyle University is free and open to the public, but participants must be over the age of fifty. Class size is limited to 20 persons. To register, or for more information, call the Capital Senior Center at 803-779-1971.

APPENDIX B - REGISTRATION SIGN-UP SHEETS

It's never too late to learn about:

Weight Management * Nutrition * Physical Activity * Stress Management

Through six classes*, **Lifestyle University** will help you to learn how to make positive changes through hands-on activities and group discussions. Blood pressure and weight are measured before each class to track progress. Adults age 55 years and older are encouraged to attend!

Classes meet every Tuesday

Orientation: March 6, 8:45 a.m.-12:00 p.m

Classes: March 13 - May 22,8:45 a.m.-12:00 p.m.

Lifestyle University is FREE to all participants.

Enroll today and get the support you need for a healthier future!!!

Lifestyle University Classes will be held at Bethel United Methodist Church

4600 Daniel Drive, Columbia, SC, 29206 in their Fellowship Building

Name/Email/Phone

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It's never too late to learn about:

Weight Management * Nutrition * Physical Activity * Stress Management

Through six classes*, **Lifestyle University** will help you to learn how to make positive changes through hands-on activities and group discussions. Blood pressure and weight are measured before each class to track progress. Adults age 55 years and older are encouraged to attend!

Classes meet every Thursday

Orientation: March 8, 8:45 a.m.-12:00 p.m

Classes: March 15 - May 24,8:45 a.m.-12:00 p.m.

Lifestyle University is FREE to all participants.

Enroll today and get the support you need for a healthier future!!!

Lifestyle University Classes will be held at Bethel United Methodist Church 4600 Daniel Drive, Columbia, SC, 29206 in their Fellowship Building

Name/Email/Phone

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Lifestyle University
Bethel United Methodist Church

Name_____ Date _____

1. Health History _____
2. Palmetto Survey _____
3. EATS Survey _____
4. IPA questions _____
5. Height _____
6. Weight _____
7. Blood Pressure _____
8. Normal Walk _____
9. Fast Walk _____

Palmetto Health Lifestyle University at
Bethel United Methodist Church
LU Biweekly Weight and Blood Pressure Screening Form

Participant Name _____ Height _____

Orientation – **March 6, 2012** Weight _____ Blood Pressure _____

Class 1 – **March 13, 2012** Weight _____ Blood Pressure _____

Class 2 – **March 27, 2012** Weight _____ Blood Pressure _____

Class 3 – **April 10, 2012** Weight _____ Blood Pressure _____

Class 4 – **April 24, 2012** Weight _____ Blood Pressure _____

Class 5 – **May 8, 2012** Weight _____ Blood Pressure _____

Class 6 – **May 22, 2012** Weight _____ Blood Pressure _____

Lifestyle University Health History

Name:_____

Address: _____

_____

_____

Phone Number: _____

Emergency Contact: _____

Primary Care Physician: _____

Physician's Contact Information: _____

_____

_____

_____

Current Health Concerns:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Past/Family Health Concerns:

1. _____
2. _____
3. _____
4. _____
5. _____
6. _____
7. _____
8. _____
9. _____
10. _____

Pre-test

Lifestyle University Evaluation Form

For staff use only:
Subject # _____ Location: Capital Senior Center Date: 06/21/2012

Name: _____

Age: _____

Ethnic Background: __ Caucasian __ African American __ Other: _____

Sex: ___ Male ___ Female

Family Income: __ Less than $10,000 __ $10,000-$24,999 __ $25,000-$49,999

__ $50,000-$74,999 __ $75,000 or more

Education: __ Less than high school __ High school __ Some college

__ College graduate __ Graduate school or more

Marital Status: __ Married/Living with Partner __ Divorced/Separated __ Widowed

__ Single/Never Married

Height: _____ Weight: _____ **For staff use only:** BMI: _____

1. How many servings of fruits and vegetables do you eat on a typical day?
__ 0 __ 1-2 ___3-4 ___5-6 ___ 7 or more

2. How many servings of low-fat dairy (skim, fat free, 1% dairy foods) do you eat on a typical day?
__ 0 __ 1-2 ___3-4 ___5-6 ___7 or more

3. How many packaged foods (canned items, frozen or boxed meals) do you eat on a typical day?
__ 0 __ 1-2 ___3-4 ___5-6 ___7 or more

4. In a usual week, what is your physical activity level? **(Choose only one)**
   - □ **Not physically active**
   - □ **Light** (such as leisure walking)
     On average: _____ times per week
     On average: _____ minutes per time
   - □ **Moderate** (such as brisk walking, bicycling, gardening, or anything else that causes small increases in breathing or heart rate)
     On average: _____ times per week
     On average: _____ minutes per time
   - □ **Vigorous** (such as running, aerobics, or anything else that causes large increases in breathing or heart rate)
     On average: _____ times per week
     On average: _____ minutes per time

5. Have you ever been told by a doctor, nurse, or other health professional that you have high blood pressure?
___Yes ___No* ___Don't know / Not sure
**If no, skip question #6.*

6. If you do have high blood pressure, are you currently taking medicine for this?
___Yes ___No ___Don't know / Not sure

7. Have you ever been told by a doctor, nurse, or other health professional that you have diabetes?
___Yes ___No ___Don't know / Not sure

8. To date are you successfully controlling your blood pressure below 140/90, or 130/80 with diabetes?
___Yes ___No ___Don't know / Not sure

9. Have you EVER been told by a doctor, nurse or other health professional that your blood cholesterol is high?
___Yes ___No ___Don't know / Not sure
**If no, skip to #12.*

10. If yes, to date are you successful controlling your blood cholesterol?
___Yes ___No ___Don't know / Not sure

11. If you do have high blood cholesterol, are you currently taking medicine for this?
___Yes ___No ___Don't know / Not sure

12. Do you currently use any of the following tobacco products? (If you do, please specify quantity used per week)
__ I do not use tobacco products
__ Cigarettes (per week)
__ Cigars (per week)
__ Smokeless tobacco products such as chewing tobacco, snuff (tins per week)
__ Other (ex. new and emerging tobacco products such as e-cigarettes, etc.)

13. How often do you use tobacco products?
__ Not at all
__ on average: _____ days per week
__ on average: _____ times per day

14. If you have stop using tobacco products, how long has it been since you last used tobacco regularly? (regularly = everyday use)
__ Not at all
__ less than 1 month ago
__ less than 3 months ago
__ less than 6 months ago
__ less than 1 year ago
__ less than 5 years ago
__ less than 10 years ago
__ more than 10 years ago

Physical Health Status

1. Would you say that in general your health is: (circle number)

   1 Excellent
   2 Very Good
   3 Good
   4 Fair
   5 Poor

2. About how long has it been since you last visited a doctor?

   1 Within the past year
   2 Within the past 2 years
   3 Within the past 5 years
   4 Five or more years ago
   5 Don't know/Not sure
   6 Never

Pre-test

Perceived Stress Scale

The questions in this scale ask you about your feelings and thoughts **during the last month**. In each case, you will be asked to indicate by circling *how often* you felt or thought a certain way.

0 = Never 1 = Almost Never 2 = Sometimes 3= Fairly Often 4 = Very Often

1. In the last month, how often have you been upset because of something that happened unexpectedly? 0 1 2 3 4
2. In the last month, how often have you felt that you were unable to control the important things in your life? 0 1 2 3 4
3. In the last month, how often have you felt nervous and "stressed"?.....0 1 2 3 4
4. In the last month, how often have you felt confident about your ability to handle your personal problems? 0 1 2 3 4
5. In the last month, how often have you felt that things were going your way?..... 0 1 2 3 4
6. In the last month, how often have you found that you could not cope with all the things that you had to do?..... 0 1 2 3 4
7. In the last month, how often have you been able to control irritations in your life?..... 0 1 2 3 4
8. In the last month, how often have you felt that you were on top of things?..... 0 1 2 3 4
9. In the last month, how often have you been angered because of things that were outside of your control?..... 0 1 2 3 4
10. In the last month, how often have you felt difficulties were boiling up so high that you could not overcome them?..... 0 1 2 3 4

Thank you for completing this important survey.

5

10-Meter Walk Test

This test examines gait speed. Gait speed is important for safe community mobility (e.g. crossing a street before the light changes).

Administering the test:

Measure a 10 meter (33 foot) course and mark its ends with tape on the floor.

Position the subject approximately 3 feet behind the tape line.

Instruct the subject to walk at a comfortable rate until s/he is approximately 3 feet past the tape line. (Distance before and after the course minimizes the effect of acceleration and deceleration).

Repeat 3 times and average the times.

Instruct the subject to walk as above, but as fast as possible.

Repeat 3 times and average the times.

Convert to m/min: divide walking distance of 10 meters by elapsed time, then multiply by 60.

Compare the times to the reference values in the table below (or for quick reference can use 82m/min norm).

	Comfortable (m/min)		Maximum (m/min)	
Gender/Decade	Men	Women	Men	Women
20s	83.6	84.4	151.9	148.0
30s	87.5	84.9	147.4	140.5
40s	88.1	83.5	147.7	127.4
50s	83.6	83.7	124.1	120.6
60s	81.5	77.8	115.9	106.4
70s	79.8	76.3	124.7	104.9

OR

1.2-1.5 m/sec	healthy young adult
0.9-1.3 m/sec	older adult

5,6

Last name First name Date

10-Meter Walk Test: Pre-test _____ Post-test_____

Normal Rate

Trial 1 _____

Trial 2 _____

Trial 3 _____

Fast Rate

Trial 1 _____

Trial 2 _____

Trial 3 _____

Convert to m/min: divide walking distance of 10 meters by elapsed time, then multiply by 60.

Compare the times to the reference values in the table below (or for quick reference can use 82 m/min norm).

	Comfortable (m/min)		Maximum (m/min)	
Gender/Decade	Men	Women	Men	Women
20s	83.6	84.4	151.9	148.0
30s	87.5	84.9	147.4	140.5
40s	88.1	83.5	147.7	127.4
50s	83.6	83.7	124.1	120.6
60s	81.5	77.8	115.9	106.4
70s	79.8	76.3	124.7	104.9

OR

0.9-1.3 m/sec older adult

8 Name _____ Date _____

Eating At America's Table
Instructions

- Think about what you usually ate last month.
- Please think about all the fruits and vegetables that you ate last month.
  Include those that were:
  raw and cooked,
  eaten as snacks and at meals,
  eaten at home and away from home (restaurants, friends, take-out), and
  eaten alone and mixed with other foods.
- Report how many times per month, week, or day you ate each food, and if you ate it, how much you usually had.
- If you mark "Never" for a question, follow the "Go to" instruction.
- Choose the best answer for each question. Mark only one response for each question.

1. Over the last month, how many times per month, week, or day did you drink **100% juice** such as orange, apple, grape, or grapefruit juice? Do not count fruit drinks like Kool-Aid, lemonade, Hi-C, cranberry juice drink, Tang, and Twister. Include juice you drank at all mealtimes and between meals.

☐	☐	☐	☐	☐	☐	☐	☐	☐	☐
Never **(Go to Question 2)**	1-3 times last month	1-2 times per week	3-4 times per week	5-6 times per week	1 time per day	2 times per day	3 times per day	4 times per day	5 or more times per day

1a. Each time you drank **100% juice**, how much did you usually drink?

☐	☐	☐	☐
Less than 3/4 cup (less than 6 ounces)	3/4 to 1 1/4 cup (6 to 10 ounces)	1 1/4 to 2 cups (10 to 16 ounces)	More than 2 cups (more than 16 ounces)

2. Over the last month, how many times per month, week, or day did you eat **fruit**?
Count any kind of fruit-fresh, canned, and frozen. **Do not count** juices.
Include fruit you ate at all mealtimes and for snacks.

☐ Never **(Go to Question 3)**	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

2a. Each time you ate **fruit**, how much did you usually eat?

☐ Less than 1 medium fruit ☐ 1 medium fruit OR ☐ 2 medium fruits ☐ More than 2 medium fruits

☐ Less than 1/2 cup ☐ About 1/2 cup ☐ About 1 cup ☐ More than 1 cup

3. Over the last month, how often did you eat **lettuce salad** (**with or without other vegetables**)?

☐ Never **(Go to Question 4)**	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

3a. Each time you ate **lettuce salad**, how much did you usually eat?

☐ About 1/2 cup ☐ About 1 cup ☐ About 2 cups ☐ More than 2 cups

4. Over the last month, how often did you eat **French fries** or **fried potatoes**?

☐ Never **(Go to Question 5)**	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

4a. Each time you ate **French fries** or **fried potatoes**, how much did you usually eat?

☐ Small order or less (About 1 cup or less)
☐ Medium order (About 1 ½ cups)
☐ Large order (About 2 cups)
☐ Super Size order or more (About 3 cups or more)

5. Over the last month, how often did you eat **other white potatoes?**
Count **baked, boiled**, and **mashed potatoes, potato salad**, and **white potatoes that were not fried**.

☐ Never **(Go to Question 6)**
☐ 1-3 times last month
☐ 1-2 times per week
☐ 3-4 times per week
☐ 5-6 times per week
☐ 1 time per day
☐ 2 times per day
☐ 3 times per day
☐ 4 times per day
☐ 5 or more times per day

5a. Each time you ate **these potatoes**, how much did you usually eat?

☐ 1 small potato or less (1/2 cup or less)
☐ 1 medium potato (1/2 to 1 cup)
☐ 1 large potato (1 to 1 1/2 cups)
☐ 2 medium potatoes or more (1 ½ cups or more)

6. Over the last month, how often did you eat **cooked dried beans?**
Count **baked beans, bean soup, refried beans, pork and beans** and **other bean dishes**.

☐ Never **(Go to Question 7)**
☐ 1-3 times last month
☐ 1-2 times per week
☐ 3-4 times per week
☐ 5-6 times per week
☐ 1 time per day
☐ 2 times per day
☐ 3 times per day
☐ 4 times per day
☐ 5 or more times per day

6a. Each time you ate these beans, how much did you usually eat?

☐ Less than 1/2 cup
☐ 1/2 to 1 cup
☐ 1 to 1 1/2 cups
☐ More than 1 1/2 cups

7. Over the last month, how often did you eat **other vegetables**?

DO NOT COUNT:
- Lettuce salads
- White potatoes
- Cooked dried beans
- Vegetables in mixtures, such as in sandwiches, omelets, casseroles, Mexican dishes, stews, stir-fry, soups, etc.
- Rice

COUNT:
- All other vegetables-raw, cooked, canned, and frozen

☐ Never **(Go to Question 8)**	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

7a. Each of these times that you ate other vegetables, how much did you usually eat?

☐ Less than 1/2 cup ☐ 1/2 to 1 cup ☐ 1 to 2 cups ☐ More than 2 cups

8. Over the last month, how often did you eat **tomato sauce**?
Include tomato sauce on pasta or macaroni, rice, pizza and other dishes.

☐ Never **(Go to Question 9)**	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

8a. Each time you ate **tomato sauce**, how much did you usually eat?

☐ About 1/4 cup ☐ About 1/2 cup ☐ About 1 cup ☐ More than 1 cup

9. Over the last month, how often did you eat vegetable soups? Include tomato soup, gazpacho, beef with vegetable soup, minestrone soup, and other soups made with vegetables.

☐ Never **(Go to Question 10)**	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

9a. Each time you ate **vegetable soup**, how much did you usually eat?

☐ Less than 1 cup ☐ 1 to 2 cups ☐ 2 to 3 cups ☐ More than 3 cups

10. Over the last month, how often did you eat **mixtures that included vegetables**? Count such foods as sandwiches, casseroles, stews, stir-fry, omelets, and tacos.

☐ Never	☐ 1-3 times last month	☐ 1-2 times per week	☐ 3-4 times per week	☐ 5-6 times per week	☐ 1 time per day	☐ 2 times per day	☐ 3 times per day	☐ 4 times per day	☐ 5 or more times per day

Thank you very much for completing this questionnaire.

3 Name _____ Date _____

International Physical Activity Questionnaire

We are interested in finding out about the kinds of physical activities that people do as part of their everyday lives. The questions will ask you about the time you spent being physically active in the **last 7 days**. Please answer each question even if you do not consider yourself to be an active person. Please think about the activities you do at work, as part of your house and yard work, to get from place to place, and in your spare time for recreation, exercise or sport.

Think about all the **vigorous** activities that you did in the **last 7 days**. **Vigorous** physical activities refer to activities that take hard physical effort and make you breathe much harder than normal. Think *only* about those physical activities that you did for at least 10 minutes at a time.

1. During the **last 7 days**, on how many days did you do **vigorous** physical activities like heavy lifting, digging, aerobics, or fast bicycling?

   ____**days per week**

   ☐ No vigorous physical activities ***Skip to question 3***

2. How much time did you usually spend doing **vigorous** physical activities on one of those days?

   ____**hours per day**

   ____**minutes per day**

   ☐ Don't know/Not sure

Think about all the **moderate** activities that you did in the **last 7 days**. **Moderate** activities refer to activities that take moderate physical effort and make you breathe somewhat harder than normal. Think only about those physical activities that you did for at least 10 minutes at a time.

3. During the **last 7 days**, on how many days did you do **moderate** physical activities like carrying light loads, bicycling at a regular pace, or doubles tennis? Do not include walking.

   ___ **days per week**

   ☐ No moderate physical activities ***Skip to question 5***

4. How much time did you usually spend doing **moderate** physical activities on one of those days?

____**hours per day**

____**minutes per day**

☐ Don't know/Not sure

Think about the time you spent **walking** in the **last 7 days**. This includes at work and at home, walking to travel from place to place, and any other walking that you have done solely for recreation, sport, exercise, or leisure.

5. During the **last 7 days**, on how many days did you **walk** for at least 10 minutes at a time?

____**days per week**

☐ No walking ***Skip to question 7*** →

6. How much time did you usually spend **walking** on one of those days?

_____ **hours per day**

____ **minutes per day**

☐ Don't know/Not sure

The last question is about the time you spent **sitting** on weekdays during the **last 7 days**. Include time spent at work, at home, while doing course work and during leisure time. This may include time spent sitting at a desk, visiting friends, reading, or sitting or lying down to watch television.

7. During the **last 7 days**, how much time did you spend **sitting** on a **week day**?

_____ **hours per day**

_____ **minutes per day**

☐ Don't know/Not sure

This is the end of the questionnaire, thank you for participating.

Palmetto Health's Lifestyle University
Sponsored by Capital Senior Center
Hosted by Bethel United Methodist Church

Commitment

I, _____, recognize that improving my
(print name)
health is a priority in my life. I agree to mark into my calendar the date of each Lifestyle University class. I will make every effort to attend all 6 classes. I understand that filling out the Lifestyle Journal on a daily basis is an important part of this process of changing my habits.

I accept these Lifestyle University books as a gift from the United Way and will do my best to put what I am learning into practice in my daily life.

I understand that in order to gain the full benefit of changes that can result from these classes, in which each week builds on the prior weeks, I commit to practicing these health principles every day. Small daily changes can add up to big changes that can improve my long-term health.

_____ _____
Signature Date

_____ _____
Witness Date

APPENDIX E - FLYER WITH DATES FOR STUDENTS

PALMETTO HEALTH

Lifestyle University

It's never too late to learn about:
Weight Management * Nutrition *
Physical Activity * Stress Management

CLASSES AVAILABLE TUESDAYS **OR** THURSDAYS

Through six classes*, Lifestyle University will help you to learn how to make positive changes through hands-on activities and group discussions. Blood pressure and weight are measured before each class to track progress. Adults age 50 years and older are encouraged to attend! **Lifestyle University is FREE to all participants.** Enroll today and get the support you need for a healthier future!!! All Classes begin at **8:45AM-12:00PM** and include blood pressure and weight screenings.

Choose a Tuesday OR Thursday Schedule:

Class Schedule **1***	Class Schedule **2***
ORIENTATION-	**ORIENTATION-**
Tuesday, March 6	**Thursday, March 8**
Class 1 – **Tuesday**, March 13	Class 1 –**Thursday**, March 15
Class 2 – **Tuesday**, March 27	Class 2 –**Thursday**, March 29
Class 3 – **Tuesday**, April 10	Class 3 –**Thursday**, April 12
Class 4 – **Tuesday**, April 24	Class 4 –**Thursday,** April 26
Class 5 – **Tuesday**, May 8	Class 5 –**Thursday**, May 10
Class 6 – **Tuesday**, May 22	Class 6 –**Thursday**, May 24

**Attendance at all six classes is strongly recommended*

To register, please call the Capital Senior Center at 803-779-1971.

Lifestyle University Classes will be held at Bethel United Methodist Church 4600 Daniel Drive, Columbia, SC, 29206 in their Fellowship Building.

APPENDIX F - JOURNAL LOWER YOUR RISK PLEDGE

Lower Your Risk Pledge

I,_____, pledge to do **1-2** of these action items this week to help lower my high blood pressure and my risk for heart disease and stroke:

- ❒ To know what my blood pressure should be and try to keep it at goal.
- ❒ To regularly take my blood pressure and track my numbers.
- ❒ To read food labels at the grocery store and to buy foods that are low in sodium and fat.
- ❒ To increase the number of fruits, vegetables and low-fat dairy foods I eat each day.
- ❒ To participate in moderate physical activity (like brisk walking) for at least 30 minutes 5 days a week.
- ❒ To stop using tobacco.
- ❒ To limit my alcohol to no more than two drinks a day (for men) or one drink a day (for women).
- ❒ To do one thing every day to manage my stress.
- ❒ To take my medicine as the doctor prescribed.
- ❒ To consult with my doctor/pharmacist before taking any over the counter medicine.
- ❒ To get refills before my medication runs out.
- ❒ Other: _____

I will recruit the following people to help me in the ways I checked above.

Helper's Name	What I Will Ask Him/Her To Do
_____	_____
_____	_____

I will reward myself and my helpers by (be specific):

_____

_____ _____

Your Signature Witness Signature

_____

Date

APPENDIX G - DAILY JOURNAL PAGES

Date: _____

Blood Pressure - AM and PM Check - Take your blood pressure before breakfast and dinner and anytime you feel bad.		
Time	BP Reading	Comments

Stress Management - Relaxation Technique Used Briefly describe what actions you took to manage your stress.

Physical Activity List the activities you did to get 30 minutes of activity.	
Type of Activity	Minutes

Medication List all the medication you took. Include the dosage and time.			
Drug	Dosage	Time	Missed

Date: _____

Food Journal - Record each item you eat or drink today.
Check off one square every time you eat a fruit, vegetable, or low-fat dairy food.

Serving Size	Food	Sodium (mg)
		1500 - 2400 mg

Fruits (4 - 5 servings daily)
☐ ☐ ☐ ☐ ☐ ☐ ☐

Vegetables (4 - 5 servings daily)
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

Low-Fat Dairy (2 - 3 servings daily)
☐ ☐ ☐ ☐ ☐ ☐ ☐

Water (8 servings daily)
☐ ☐ ☐ ☐ ☐ ☐ ☐ ☐

LU CLASS 1

9:30-9:45 - Welcome *Mary Katherine*
(15 min) Introductions students & staff
why taking class

9:45-9:55 - Manual Review - schedule *Roni*
(10 min) content division
HIPPA statement

9:55-10:10 - Hypertension & other chronic diseases
(15 min) pgs 5-7 **Pat**
10:10-10:25- Diabetes & Hypertension & Carbohydrate
(15 min) Management pgs 8-15 **Pat**
10:25-10:35 - Snack & stretch Break
(10 min)
10:35-10:40 - Stress Reduction pg 16 **Roni**
(5 min)
10:40-11:00 - Diet Healthy Eating 101 pgs 17-26
(20 min) Nutrition Expert **Kelsey Knasel**

11:00-11:15 - PhysicalActivity pgs 27-29 MaryKatherine
(15 min) chair stands & seated leg stretches
11:15-11:20 -Stretch Break
(5 min)
11:20-11:30 - Pharmacy pg 30 **Pat**
(10 min)
11:30-12:00 - Journal Review-Go over directions MaryKatherine
(30 min) Explain pledge & logs, 5 min setting week 1 goals
Resource Manual-Explain divisions & contents
Complete Feedback form & door prize award
Bring List of Meds to next Class

LU CLASS 2

9:30-9:35 - Welcome *Mary Katherine*
(5 min) Answer questions from last week
Introduction of Pharmacy Expert *Ivy Coleman*

9:35-9:55 - Pharmacy pgs 46-48 **Ivy Coleman**
(20 min) Did you forget something today?
Remembering your meds

9:55-10:15 - Stress Reduction pgs 32-36 *Roni*
(20 min) Handling stress the healthy way

10:15-10:25 - Snack & stretch Break
(10 min)

10:20-10:35- Diet pgs 37-42 *Nutrition Expert*
(15 min) Eating more fruits, vegetables &
low-fat dairy; eating less sodium

10:35-11:00 - Physical Activity pgs 43-45 *MaryKatherine*
(15 min) Is your day an active day? Pedometers

11:00-11:05 - Stretch Break
(5 min) Set up for Small Groups

11:05-11:50 - Small Groups Work, Goal setting or discovery
(45 min) (Pat leaves early March 27, 2 groups)

11:50-12:00 -Wrap-up
(10 min) Review what was learned & door prize award
Complete feedback form
Talking with their Physician

LU CLASS 3

9:30-9:35 - Welcome
(5 min) Answer questions from last week
Show copy of manual
Do not look at boxes under chairs/on tables
Introduce Experts: Dr. JoAnne Herman from USC College of Nursing &

9:35-10:15 - Stress Reduction ***Dr. Herman***
(40 min) Relax, don't stress & Imagery exercise

10:15-10:35 - Diet - Label Reading exercise ***Nutrition Expert***
(20 min) To supersize or not to supersize

10:35-10:45 - Stretch Break and Snacks
(10 min)

10:45-10:50 - Physical Activity pg 56 ***Mary Katherine***
(15 min) Key to staying active, make it a habit
Balance exercises, tandem stance, ankle rotations, toe point and flex

10:50-11:15 - Pharmacy pg 57 ***Pat***
(15 min) One pharmacy stop is better than two

11:15-11:55 - Small Group Work
(40 min) Problems & Solutions or Dream

11:55-12:00 -Wrap Up ***Mary Katherine***
(5 min) Review what was learned & door prize award
Complete feedback form
Talking with their Physician
Wear comfortable clothes to the next class

Bring a recipe to be modified to the next class

LU CLASS 4

9:30-9:40 - Welcome *Mary Katherine*
(10 min) Answer questions from last week
Introduce Nutrition Expert

9:40-10:10 - Diet Recipe Modification Discussion pgs 63-65
(30 min) Cooking for health *Nutrition Expert*

10:10-10:25 - Stress Reduction pgs 59-62 *Roni*
(15 min) Changing your outlook

10:25-10:35 - Snacks & Stretch Break - "modified recipes"
(10 min)

10:35-11:05 - Physical Activity Balance & Flexibility pgs 66-70
(30 min) What your workout may be missing *Mary Katherine*
Balance & Flexibility from book: heel to toe walking, ankle raises, front & back knee raises, upper body stretches

11:05-11:10 - Break
(5 min) Set Up for Small Groups

11:10 - 11:50 - Small Group Work
(40 min) Successes & Barriers or Design

11:50 - 12:00 -Wrap Up *Mary Katherine*
(10 min) Review what was learned & door prize award
Complete feedback form
Talking with their Physician
Wear comfortable clothes to the next class

LU CLASS 5

9:30-9:40 - Welcome
(10 min) Answer questions from last week
Show copy of manual
Introduce Physical Activity Expert
Joyce Gossard & Nutrition Expert

9:40-10:00 - Stress Reduction - pgs 72-73 *Roni*
(20 min) Making life less stressful

10:00-10:20 - Diet Restaurant Menu Discussion
(20 min) Mastering restaurant eating Nutrition Expert

10:20-10:30 - Stretch & Snack Break
(10 min)

10:30-11:00 - Physical Activity Staying Strong pgs 76-68
(30 min) Strength Training Expert *Joyce Gossard*
Side-leg raise, Chair dips,

11:00-11:10 - Break
(10 min) Set up for Small Groups

11:10-11:50 - Small Group Work
(40 min) Staying On Track or delivery.

11:50-12:00 - Wrap Up
(10 min) Review what was learned & door prize award
Complete Feedback form
Talking with their Physician

LU CLASS 6

9:30-9:40 - Welcome *Mary Katherine*
(10 min) Answer questions from last week
Explain today's set up

9:40-10:00 - Complete EATS Survey &
(20 min) Diet Discussion *Delores*

10:00-10:20 - Complete International Physical Activity
(20 min) Survey & Stress Management Discussion *Roni*

10:20-10:40 -Physical Activity 10 meter Walk Test
(20 min) *Melanie*

10:40-11:00 - Snack Break
(10 min)

11:00-11:20 - Complete of Post-test Palmetto Survey &
(20 min) Pharmacy Discussion *Pat*

11:20-11:40 - Focus Group questions about class
(20 min) *Mary Katherine*

11:40-12:00 - Review what was learned
(20 min) Answer Final Questions
Graduation *Mary Katherine*

APPENDIX I - WEEKLY FEEDBACK FORM

Lifestyle University
Feedback Form Class 5

Session Date: Tuesday November 13, 2012

To make sure the sessions are meeting your needs, we would like you to answer the following questions. Please do not put your name on these forms.

1. Was the information presented easy to understand? (circle one)
   Yes Somewhat No
   Comments:_____
   _____

2. Did you find the **information** useful? (circle one on each line)

Nutrition (Brooke)	Yes	Somewhat	No
Stress Management (Roni)	Yes	Somewhat	No
Physical Activity (Joyce)	Yes	Somewhat	No
Group Activity (Mary Katherine)	Yes	Somewhat	No

   Comments:_____
   _____
   _____

3. Were the **presenters** easy to understand? (circle one on each line)

Nutrition (Brooke)	Yes	Somewhat	No
Stress Management (Roni)	Yes	Somewhat	No
Physical Activity (Joyce)	Yes	Somewhat	No
Group Activity (Mary Katherine)	Yes	Somewhat	No

   Comments:_____
   _____
   _____

4. Regarding the food, how likely are you to prepare it for yourself?

Kiwi Water	Yes	Somewhat	No
Hibiscus Agua Fresca	Yes	Somewhat	No
Potato Leek Soup	Yes	Somewhat	No
Spinach Walnut Salad	Yes	Somewhat	No
Pear Clafoutis	Yes	Somewhat	No

   Comments:_____
   _____

5. What was your favorite thing about today's session?

_____

_____

6. What did you **not like** about today's session?

_____

_____

7. What would you **change or add** to today's session?

_____

_____

APPENDIX J - DISCUSSION INSTRUCTIONS SCT GROUP

Small Group Instruction
Class 2: Goal Setting
50 Minutes

Purpose:

1. To allow participants an opportunity to discuss personal successes and barriers regarding setting goals and record keeping.
2. To allow participants the opportunity to create and commit to goals and a plan of action for the upcoming week.
3. To allow the group facilitator an opportunity to listen and assess participants' understanding of past discussions, their readiness to make changes and to determine an appropriate discussions for moving forward.

Instructions:

1. Have participants divide into groups of 8-9 people with 1 facilitator for each group.
2. Begin this first small group session with 10 min of self-introduction. Allow each participant 1-2 min. Ask the participants to share a little about their experiences with having health concerns and their experiences with behavior change. Share your experiences as well – you may want to start off the introductions.
3. After each person has had a chance to speak, ask everyone to take out their journal.
4. Open conversation with a question that focuses the group on goal setting:
    a. How is everyone doing meeting their goals?
    b. Would someone like to share their goals for this past week?
5. Encourage each participant to share the goals they set in the previous weeks as well as their successes and problems in achieving these goals. (20-25 min)
    a. Remind participants the more specific and smaller the goal (ie lose 10 lbs in the next 2 months versus losing 20 lbs) the better.
    b. Discuss how journaling helps in setting and meeting goals.
    c. Keep the conversation on track and offer suggestions when the conversation gets stuck.
6. Finish the discussion on a positive note. (10 min)
    a. Have participants share what they are proud of accomplishing in the past week.
7. Wrap up with a 1-2 minute summary of the conversation and allow participants a chance to set goals for the next week. (5-10 min)

Small Group Instruction
Class 3: Benefits & Barriers
40 Minutes

Purpose:

1. To allow participants an opportunity to discuss personal successes and barriers regarding setting goals and record keeping.
2. To allow participants the opportunity to create and commit to goals and a plan of action for the upcoming week.
3. To allow the group facilitator an opportunity to listen and assess participants' understanding of past discussions, their readiness to make changes and to determine an appropriate discussions for moving forward.

Instructions:

1. Have participants divide into groups of 8-9 people with 1 facilitator for each group.
2. When participants have divided into small groups, hang a large piece of easel paper up so your group can see.
3. Choose a goal (increasing physical activity, eating more fruits and vegetables, losing weight) and write it at the top of the paper you are given. Divide the sheet into two columns. Label one column "Pros" and the other column "Cons."
4. Have participants tell you the "pros" or benefits of working towards the goal listed. You will write each thought down in the "Pros" column. Do the same thing for "cons" or barriers to the goal listed.
5. After all pros and cons have been listed, discuss as a group how to overcome the barriers listed and how they feel about the balance between the benefits and barriers listed.
    a. Ideally, the group will come to the conclusion that the pros outweigh the cons. However, if they do not, discuss how the goal could be modified to make it one that is beneficial.
    b. Encourage each participant to share.
    c. Keep the conversation on track and offer suggestions when the conversation gets stuck.
6. If time, finish the discussion on a positive note and provide time for setting next week's goals.
    a. Have participants share what they are proud of accomplishing in the past week.
    b. Ask what they have learned from class or keeping the journal that has helped them in the past week.

Small Group Instruction
Class 4: Successes and Solutions
40 Minutes

Purpose:

1. To allow participants an opportunity to discuss personal successes and barriers regarding setting goals and record keeping.
2. To allow participants the opportunity to create and commit to goals and a plan of action for the upcoming week.
3. To allow the group facilitator an opportunity to listen and assess participants' understanding of past discussions, their readiness to make changes and to determine an appropriate discussions for moving forward.

Instructions:

1. Have participants divide into groups of 8-9 people with 1 facilitator for each group.
2. When participants have divided into small groups, ask them to open their journals to the past week.
3. Encourage each participant to share problems they are working on or have succeeded in solving. Are there common problems everyone is dealing with? Are there problems that keep coming up for an individual? (30 min)
    a. Try not to problem-solve for the participants.
    b. Let the group work on problems and find solutions.
    c. Encourage each participant to share.
    d. Touch on each topic for behavior change (diet, physical activity, stress reduction, medication control, health outcome control (BP, blood sugar, weight)
    e. Keep the conversation on track and offer suggestions when the conversation gets stuck.
4. Finish the discussion on a positive note. (10 min)
    a. Have participants share what they are proud of accomplishing in the past week.
5. If Time - Wrap up with a 1-2 minute summary of the conversation and allow participants a chance to set goals for the next week.

Small Group Instruction
Class 5: Staying On Track
40 Minutes

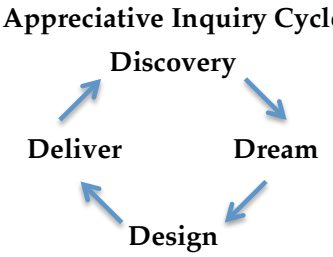
Purpose:

1. To allow participants an opportunity to discuss personal successes and barriers regarding setting goals and record keeping.
2. To allow participants the opportunity to create and commit to goals and a plan of action for the upcoming week.
3. To allow the group facilitator an opportunity to listen and assess participants' understanding of past discussions, their readiness to make changes and to determine an appropriate discussions for moving forward.

Instructions:

1. Have participants divide into groups of 8-9 people with 1 facilitator for each group.
2. When participants have divided into small groups, ask them to open their journals to the past week.
3. Discuss how participants will use the skills they have learned in Lifestyle University to maintain healthy behaviors when they are no longer attending classes.
    a. Have participants discuss goals and action plans for the next 3 month.
    b. Ask participants to problem solve for any barriers that may occur (vacations, sickness, weather change, etc.).
4. Finish the discussion on a positive note.
    a. Have participants share what they are proud of accomplishing while being in the class.
    b. What is one thing they will do to continue making progress towards a healthier future?
5. Wrap up with a 1-2 minute summary of the conversation and allow participants a chance to set goals for the next week.

APPENDIX K - APPRECIATIVE INQUIRY INTERVIEW QUESTIONS AE GROUP



Class 2: Goals - Discovery

Goals

Think back to a time when you experienced a major shift from wandering about to specific admirable health goals. Describe what happened; tell me about this "magical" moment.

What was it about you that made this shift happen?

Who else was involved when this happened?

What really happened? Reflecting back to the time before this shift and then the moment(s) when everything changed, what specific elements helped this positive experience happen?

Or

Discovery

Tell me about a time when you felt great as you lived a healthy lifestyle.

- What did you appreciate about this time in your life?
- What was it about you that made this happen?
- What was it about others that made this happen?
- What other things were happening that supported this positive experience?

Take a moment to reflect on what health means to you.

- Tell me what a healthy lifestyle means to you
- Tell me about a time in your life when you felt healthy and alive. What made it an important and special time?
- What are the good things about you that helped make this a special time?
- Did you learn anything new about yourself? What did you learn?
- Who else was involved and how did they help you?
- Was there anything else that helped make this time so special?

Class 3: Benefits & Barriers - Dream

If I gave you 3 wishes that you could use to improve:

1. What and how you eat
2. What kind and how much physical activity you do
3. How you relax and unwind
    - What would those 3 wishes be?
    - What would need to be in place for these wishes to come true?
    - What would you do?
    - What would others in your life need to do?

Class 4: Success & Solutions – Design

Last time we met you shared your vision for improving your nutrition, physical activity and relaxation, would you review those with me?

- What have you learned about yourself to help your dreams come true for:
    1. Nutrition
    2. Physical activity
    3. Relaxation
- What can you do to make your dreams come true?
- Who can support you and how can they helped you in this process?
- How can I support you in this process?

Class 5: Staying on Track – Delivery

At our last class we talked about your dreams for nutrition, physical activity and relaxation.

- What have you done to start this process for your:
    1. Nutrition
    2. Physical activity
    3. Relaxation
- What are some things you can do during the next week?
- Who has or is willing to help you reach your dreams?
- How can I support you during the next week?

Autograph Hunt (class 2, activity 1)

Find someone who fits each description below, and get her or his signature on this sheet.
Try to find a different person for each description. Find someone who…

lived in the same state where you were born	doesn't like to exercise	is a member of the Capital Senior Center
has a birth date that is the closest to yours	enjoys walking	has a computer and uses email
takes an exercise class	likes to eat out more than preparing food at home	Likes to read the same type of books or watch the same type of movies that you do
doesn't like to write down everything they eat	has high blood pressure	would like to release weight

Strengths Hunt (class 2, activity 2)

I would be more successful in improving my health, if I could…

(Please list 3 changes that you would like to make, for example; get more restful sleep, do something I enjoy every day, do Yoga on at least 3 days of each week)

1. _____
2. _____
3. _____

One of the strengths I have is…

(Please list one skill or strength you have.)

_____

Strengths and skills my classmates have include…

(Please summarize your classmates strengths and list them in boxes.)

Maxwell's Types of Dreams (class 3, resource)

Daydreams – Distractions from what you are doing

Pie-in-the-sky Dreams – Wild ideas with no strategy for accomplishing

Bad Dreams - Worries that breed fear & paralysis

Idealistic Dreams – The way the world would be if you were in charge

Vicarious Dreams – Dreams lived through others

Romantic Dreams - The belief that some person will make you happy

Career Dreams – Belief that career success will make you happy

Destination Dreams – Belief that a position, title or award will make you happy

Material Dreams – Belief that wealth or possessions will make you happy

John Maxwell's Definition of a Dream

"A dream is an inspiring picture of the future that energizes your mind, will and emotions, empowering you to do everything you can to achieve it" (**Put your Dreams to the Test**, by John Maxwell, 2009, p. xiii)

Top 5 reasons people have trouble identifying their dream

1. Discouraged from dreaming by others
2. Stuck by past disappointments and hurts
3. Habit of settling for average
4. Lack the confidence needed to pursue your dream
5. Lack the imagination to dream

Bucket List (class 3, activity 1)

Where have you always wanted to go and you haven't been there yet?

1._____

2._____

3._____

What have you wanted to do for yourself and haven't done yet?

1._____

2._____

3._____

What have you wanted to see and haven't seen yet?

1._____

2._____

3._____

Who do you want to spend some time with that you haven't gotten around to seeing?

1._____

2._____

3._____

What do you want to do with or for someone else that you haven't done yet?

1._____

2._____

3._____

Dream Exercise (class 3, activity 2)

What are your wildest dreams for your health?	Steps to make it come true
What are your wildest dreams for your weight?	Steps to make it come true
What are your wildest dreams for your level of activity?	Steps to make it come true
What do you see yourself doing that you haven't been able to do?	Steps to make it come true
What magazine cover do you imagine yourself being on and why?	Steps to make it come true

Dreams to Reality (Class 4)

1. Write down your wildest and craziest dreams for your health!

1. _____ 2. _____

3. _____ 4. _____

2. Look at what you just wrote.

Which would you choose to do when you don't have anything you need to do?

Which are you doing when you lose track of time?

From this list, what do you really want?

It is ok if it doesn't seem wild and crazy, just write down 1 sentence about what you really want most.

---

3. Get feedback on your dream from a partner and write it down:

_____ _____

_____ _____

4. Dream checklist:
   a. Is this really my dream? Yes No Maybe
   b. Does my dream benefit others? Yes No Maybe
   c. How passionate am I about this dream? (circle one below)
      10 My passion is so hot that it sets other people on fire
      9 I cannot imagine my life without my dream
      8 I willingly sacrifice other important things for it
      7 I am fired up by it and often preoccupied with it
      6 I enjoy it as one of many interests
      5 I can take it or leave it
      4 I prefer not to think about it
      3 I go out of my way to avoid doing anything about it
      2 I've put it on my list of least favorite things
      1 I would rather have a root canal without anesthesia

d. Name 2 people that can help you make this dream come true

_____ _____

e. List 2 challenges that you expect to face in trying to achieve this dream

_____

_____

f. List 2 strengths or strategies you can use to overcome these challenge

_____

_____

Accountability:

List 1 thing you are willing to do this next week to get one baby step closer to making your dream a reality

_____

_____

Don't Settle Reflection (class 5, activity 1)

1. During the past week what have you done just for yourself?

_____

2. Since the very first lifestyle University class, what changes have you made in your daily activities? _____

_____

3. What have you learned in Lifestyle University that has made the biggest difference in your life? _____

_____

4. What is the goal or dream you are working toward? _____

_____

5. What baby step have you made during the last two weeks to move a little closer to your dream? _____

_____

6. What change have you seen in your self since the beginning of Lifestyle University? _____

_____

7. Is your blood pressure higher or lower than when you started the class?_____
8. Is your weight higher or lower than when you started this class? _____
9. Have you increased the amount of weekly physical activity that you do? _____
10. What if any changes have you noticed in how you feel since beginning Lifestyle University? _____

_____

11. Have you changed the way you grocery shop since beginning Lifestyle University? _____

12. If yes, what is different? _____

_____

13. What are you now doing that you didn't do before this class?

_____

14. When you go out to eat has the way you ordered your food changed since the beginning of this class? _____

_____

15. What are you doing now (nutrition, physical activity, stress management, medications) that you didn't do before beginning this class? _____

_____

Personal Presidential Cabinet (class 5, activity 2)

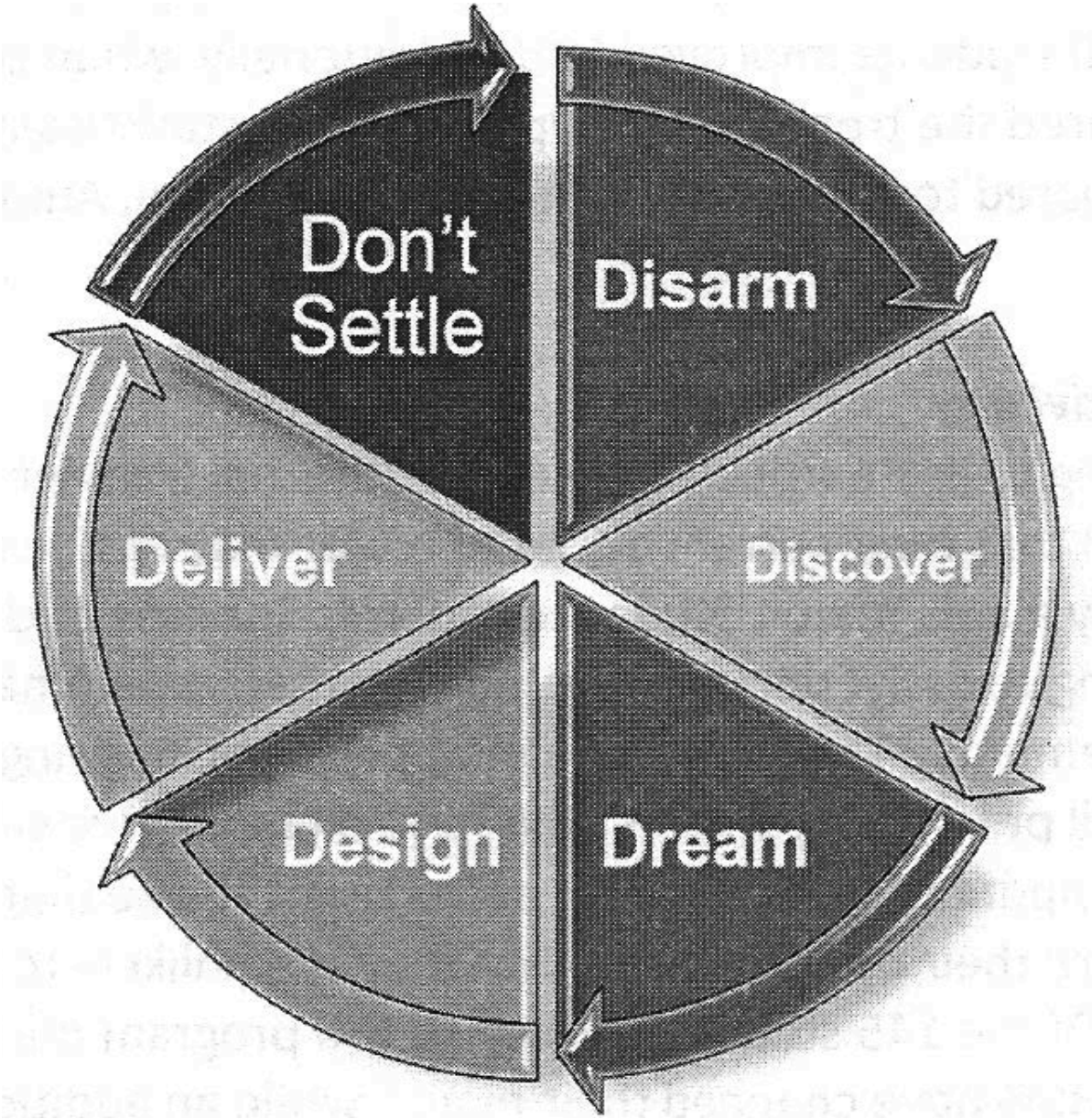
As the President & CEO of your life, you want to make the best decisions based on the very best information you can acquire. Just as the President of the United States has a Cabinet to advise her/him on any subject relating to the cabinet member's expertise, you need to ensure that you surround yourself with people that are trustworthy & have expertise in a wide variety of areas. As President, you appoint Cabinet members & you may dismiss individual Cabinet members at any time.

Who is on **Your** Cabinet? Who are your role models? Who do you trust for advice on a variety of different topics? The cabinet members serve as consultants & advisers, but you should take the best nuggets of information from each person & create the best solution for you. Always remember that there is more than one right answer. You as the President make your own decisions because you are the one that has to live with the ramifications and consequences of your decisions. **Who is on Your Personal Presidential Cabinet?**

#	Cabinet Member's Name	I go to this person for advice on the following:
Example	*Caroline or Cristy*	*Information about my blood pressure (Nurses)*
1		
2		
3		
4		
5		

Bloom, J. L. (2008) Moving On. *Academic Advising: A Comprehensive Handbook, 2nd edition*

Appreciative Cycle (class 5 resource)



Bloom, J. L. (2008) Moving On. *Academic Advising: A Comprehensive Handbook, 2nd edition*

APPENDIX M - LIFESTYLE UNIVERSITY INTERVIEW QUESTION GUIDE

Lifestyle University Interview Question Guide

1. Have you taken a class about your health like Lifestyle University before?

    1a. If yes, tell me about your experience.

2. Tell me about the best things that you learned from Lifestyle University class.

3. What helped you the most from this class in making changes in your life?

4. Before taking Lifestyle University how important was:			After taking Lifestyle University how important is:		
not at all	somewhat	very important	not at all	somewhat	very important

Eating fruits and vegetables

Regular Physical Activity

Walking Speed

Stabilizing or lowering your BP

Lowering your BMI (Weight)

Recording your food, BP, stress management and physical activity

5. Tell me about any changes you've noticed in your life after taking this class.

6. During these classes we encouraged you to make changes in your daily life. What was the hardest thing for you to change that we talked about during these classes?

7. During these classes we encouraged you to make changes in your daily life. What was the easiest thing for you to change that we talked about during these classes?

8. During these classes you were in small group discussions with a Community Health Advisor. OR During these classes you asked someone else in the class questions and they asked you questions. What if any effect did this part of the class have in making changes to your life?

9. Is there anything that I have not asked you that you want to tell me about how this class has affected your life?

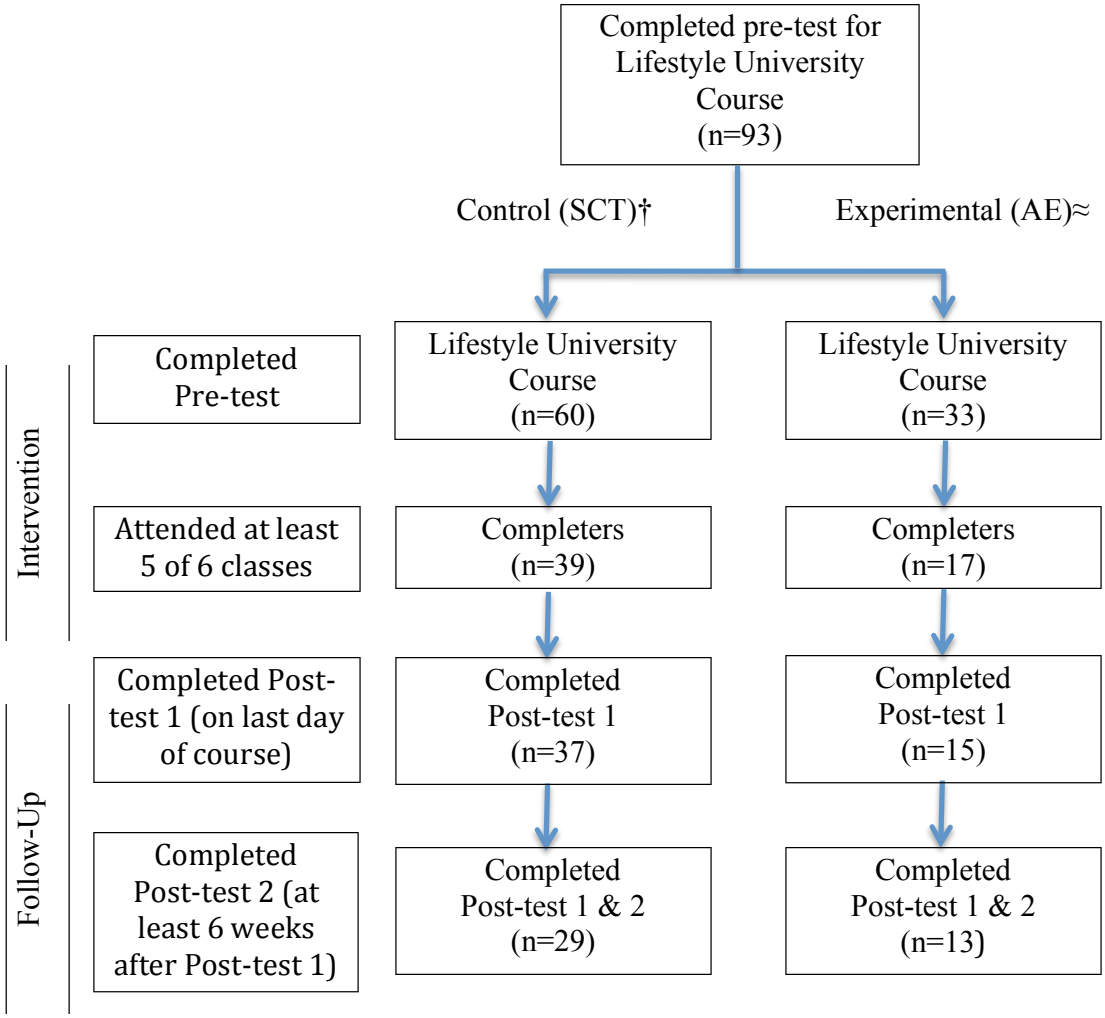
10. Review results of quantitative measures.

APPENDIX N DEMOGRAPHIC CHARACTERISTICS OF SAMPLE BY GROUP

	Total sample		Control (CBC)†		Experimental (AE)≈	
Variable	***n* (93)**	**%**	***n* (60)**	**%**	***n* (33)**	**%**
Gender						
Male	14	15%	11	18%	3	9%
Female	79	85%	49	82%	30	91%
Race						
White	57	62%	36	61%	21	64%
Non-white	35	38%	23	39%	12	36%
Marital status						
Married	34	37%	25	42%	9	28%
Divorced	29	32%	15	25%	14	44%
Widowed	27	29%	18	30%	9	28%
Single	2	2%	2	3%	~	~
Income						
<$25,000	31	37%	19	35%	12	40%
$25,000 or more	53	63%	35	65%	18	60%
Education						
High school or less	12	13%	8	13%	4	13%
At least some college	80	87%	52	87%	28	88%
Completed Course						
Non-completers	37	40%	21	35%	16	48%
Completed 5-6 classes	56	60%	39	65%	17	52%
Age (mean ± SD)	71.0 ± 9.1		72.3 ± 9.1		68.7 ± 8.6	

†Cognitive Behavior Change (CBC)
≈Appreciative Education (AE)

APPENDIX O - PARTICIPANT FLOW DIAGRAM



†Social Cognitive Theory (SCT)
≈Appreciative Education (AE)

APPENDIX P - PRE-TEST DESCRIPTIVE STATISTICS FOR SYSTOLIC AND DIASTOLIC BLOOD PRESSURE, HEIGHT, BMI, EATS, IPAQ-SF, SELF-SELECTED AND FAST GAIT

Pre-test Descriptive Statistics

	Total sample			**Control** (SCT)†			**Experimental** (AE)≈			
Variable	**n**	**Mean (SD)**	**Range**	**n**	**Mean (SD)**	**Range**	**n**	**Mean (SD)**	**Range**	***p*-value**
Systolic blood pressure (mm Hg)	93	143.3 (23.6)	(95-224.7)	60	142.2 (23.1)	(95-204.7)	33	145.3 (24.7)	(114.7-224.7)	0.55
Diastolic blood pressure (mm Hg)	93	76.6 (9.8)	(56-103.7)	60	75.7 (9.3)	(56-101)	33	78.3 (10.5)	(63.3-103.7)	0.23
Height (in)	93	63.8 (3.0)	(53-72)	60	63.9 (3.2)	(53-72)	33	63.6 (2.5)	(59.5-68.8)	0.72
BMI (lb/m2)	93	30.0 (6.6)	(17-49)	60	30 (6.8)	(17.0-49.0)	33	29.9 (6.2)	(17.4-43.1)	0.94
EATS (avg daily fruit & vegetable servings)	90	3.1 (2.6)	(0.1-16.2)	58	2.8 (2.4)	(0.1-16.2)	32	3.5 (2.8)	(0.1-13.0)	0.22
IPAQ-SF (MET-min/week)	88	186.8 (2238.8)	(0-11466)	56	1812.5 (2358.7)	(0-11466)	32	1948.2 (2045.5)	(0-6132)	0.79
Self-selected gait speed (meters/sec)	91	1.1 (0.2)	(0.5-1.9)	58	1.2 (0.3)	(0.5-1.9)	33	1.1 (0.2)	(0.8-1.6)	0.09
Fast gait speed (meters/sec)	90	1.5 (0.3)	(0.6-2.4)	58	1.5 (0.4)	(0.6-2.4)	32	1.4 (0.2)	(1.0-2.0)	0.32

†Social Cognitive Theory (SCT)
≈Appreciative Education (AE)