

CONTRIBUTING FACTORS TO SELF-MANAGEMENT SUCCESS: MODERATORS
OF PHYSICAL ACTIVITY AND PERCEIVED HEALTH STATUS IN A
RANDOMIZED CONTROLLED TRIAL WORKPLACE HEALTH INTERVENTION

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The undersigned, appointed by the dean of the Graduate School, have examined the dissertation entitled

CONTRIBUTING FACTORS TO SELF-MANAGEMENT SUCCESS: MODERATORS

OF PHYSICAL ACTIVITY AND PERCEIVED HEALTH STATUS IN A

RANDOMIZED CONTROLLED TRIAL WORKPLACE HEALTH INTERVENTION

presented by Jessica Harvath-Hilgeman,

a candidate for the degree of doctor of philosophy,

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DEDICATION

This work is dedicated to my husband and my family. Thank you for your unflagging support and gifts of dark chocolate and popcorn.

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TABLE OF CONTENTS

ACKNOWLEDGMENTS	ii
TABLE OF CONTENTS.....	iii
ABSTRACT.....	vi
Chapter	
1. INTRODUCTION	1
Preventable Disease in the United States	
Work-based Health Promotions Interventions	
Self-Management Model	
Risk and Resiliency Factors	
Work-based Adaptation of Self-Management Intervention	
Research Questions and Hypotheses	
2. METHODOLOGY.....	17
Participants	
<i>Act Healthy</i> Development and Adaptation	
Intervention	
Control	
Measures	
Data Collection Procedures	
Analytical Procedures and Plan	
3. RESULTS	27
Quality Check and Missing Data	
Statistical Assumptions	
Descriptive Statistics	
Path Analysis	

Simple Slope Analysis	
4. DISCUSSION	32
Self-Efficacy	
Interpersonal Relationships	
Depression	
Treatment Matching	
Strengths and Limitations	
Future Directions	
Implications for Research and Practice	
Summary	
APPENDICES	
A. EXTENDED LITERATURE REVIEW	43
Impact of Preventable Disease	
Health Promotions	
Health Behavior	
Standard Care	
Self-Management	
Theoretical Underpinnings	
Risk and Resiliency Factors	
Self-Efficacy	
Depression	
Interpersonal Relationships	
Physical Activity	
Perceived Health Status	
B. INFORMED CONSENT.....	57

C. MEASURES.....62

D. PARTICIPANT LETTER AND EDUCATIONAL MATERIALS71

E. *ACT HEALTHY* LEADER MANUAL73

F. *ACT HEALTHY* PARTICIPANT MANUAL.....111

REFERENCES139

VITA.....159

Abstract

The present study examined data collected from a randomized-control trial (RCT) of workplace wellness prevention programs. Data were collected from the *Act Healthy* program, a group workplace wellness intervention adapted from the Stanford Patient Education Research Center Self-Management programs, and *Eye on Health*, an individual control intervention based upon a standard disease management model. Path analysis was used to assess for moderation of health outcomes (physical activity and perceived health status) across groups. Measures of self-efficacy, depression, and interpersonal relationships were proposed moderator variables, and it was predicted that participants low in self-efficacy, high in depression, or low in interpersonal relationships would benefit more from the *Act Healthy* group self-management intervention. Results showed no significant effects for five of the six predicted interactions; the interaction effect for interpersonal relationships on perceived health status was significant and was found in the predicted direction. Follow up simple-slope analyses, however, were non-significant.

These results suggest that self-efficacy, depression, and interpersonal relationships failed to significantly moderate the relationship between intervention condition and health outcome. Limitations of this research include the high-functioning nature of the sample: respondents, on average, reported high general sense of self-efficacy, low depression, and high perceived social support. The restricted range of these variables of interest may have impacted the ability of analyses to detect interaction effects. Future directions for research include examining gender as a variable of interest as well as assessing for interaction effects in a lower functioning population sample.

Chapter 1: Introduction

This chapter will present a description of the problem and an introduction to current health issues in the United States. First this section will describe the impact of health issues on the American workforce, followed by the need for work-based health promotions interventions. Then, this section will present the advent of self-management interventions for populations with chronic illness and risk and resiliency factors for health outcomes and success in health interventions. This section will also provide a recent adaptation of self-management interventions for a work-based wellness program with a healthy population. Finally, this section will conclude with research questions and relevant hypotheses.

Preventable Disease in the United States

It is estimated that half of all deaths in the United States that occur each year are preventable (Mokdad, Marks, Stroup, & Gerberding, 2004, 2005). Preventable chronic diseases such as cardiovascular disease, metabolic syndrome, diabetes, and obesity are widespread and costly (National Center for Chronic Disease Prevention and Health Promotion, 2013). These diseases have been associated with prolonged sitting time (Owen, Sparling, Healy, Dunstan, & Matthews, 2010; Pronk, Katz, Lowry, & Payfer, 2012), and over the past 50 years, there has been a progressive and significant increase in the number of Americans who are sedentary at work (Church et al., 2011). Precursors to these chronic health conditions are even more prevalent than the conditions themselves: approximately two-thirds of adults are considered overweight or obese (Ogden, Carroll, Kit, & Flegal, 2012), and roughly half of all adult Americans are exposed to at least one cardiovascular risk factor, such as smoking and high blood pressure (National Center for

Chronic Disease Prevention and Health Promotion, 2013). Americans also struggle to engage in health behaviors to reduce their risk of chronic illness. One-third of adults do not meet physical activity recommendations described in the 2008 Physical Activity Guidelines for Americans, and 76% of adults deny eating the five recommended daily servings of fruits and vegetables (National Center for Chronic Disease Prevention and Health Promotion, 2013).

The costs of chronic diseases are high. According to a major study by the Milken Institute, it is estimated that chronic disease has a \$1.3 trillion annual impact on the American economy, with lost productivity totalling \$1.1 trillion of that amount (DeVol et al., 2007). More recent figures suggest that in 2012, healthcare spending climbed to 17.9% of US GDP, despite medical inflation plummeting to a four-decade low (Chatterjee, Kubendran, King, & DeVol, 2014). Approximately 86% of money spent on healthcare in 2010 was spent on chronic illness (Centers for Disease Control and Prevention, 2015). Illness and other lifestyle risk factors are costly due to increased health care utilization, injuries, disability, and absenteeism (Anderson et al., 2009; Ostbye, Dement, & Krause, 2007). In the competitive workforce, employer viability is impaired by insuring people who have chronic, subclinical, or multiple health conditions, and indirect financial deficits due to lost employee productivity are estimated to be four times greater than the direct costs of employer-based health care (Loeppke et al., 2007). Health care expenditures in 2012 reached a record \$2.8 trillion, and are expected to reach \$5.15 trillion by 2023 (Centers for Medicare and Medicaid Services, 2013a, 2013b). Employers must account for these increases, and, as a result, often raise benefit rates while cutting compensation or stalling salary raises. To avoid a potential recruiting

disadvantage from reductions in employee compensation, some employers choose to diminish or eliminate insurance benefits for their employees, which in itself may put employers and employees at a competitive disadvantage (Blumberg, Buettgens, Feder, & Holahan, 2012).

Work-based Health Promotions Interventions

In response to these health-related productivity losses and increased benefit expenses, there is an urgent need for work- and community-based interventions aimed at promoting healthy behaviors (Loeppke et al., 2007; Ockene et al., 2007; Shaw et al., 2012; Task Force on Community Preventive Services, 2009). Health promotion programs in the workplace benefit employers and employees alike through improving productivity and decreasing health care utilization, absenteeism, and disability costs (Anderson et al., 2009). These interventions are beneficial not only to employees with diagnosed illness or those who are at risk for chronic disease: they can help healthy employees maintain or improve health, which, in turn, contributes to maintaining a productive workforce (Edington, 2006). Furthermore, employer-based health promotion programs interested in decreasing lifestyle risk factors for chronic illness can capture employees who are at the worksite for the majority of their day (Sorensen et al., 2011). Many workplace health promotion programs have been shown to improve health outcomes for employees: health outcomes include reduced cholesterol, lowered blood pressure, reduced waist circumference, fewer number of clinic visits, reduced length of hospital stays, and increased physical activity (Anderson et al., 2009; Dishman, DeJoy, Wilson, & Vandenberg, 2009; D. L. Jones, Tanigawa, & Weiss, 2003; Jung, Lee, Lee, Kwon, &

Song, 2012; Task Force on Community Preventive Services, 2009; Watson et al., 2012; M. G. Wilson et al., 2010).

Workplace wellness programs are more and more prevalent: recent studies suggest that approximately three out of every four employers offer some form of wellness program (Society for Human Resource Management, 2015). While meta-analyses have shown that the average return on investment is high for these programs (\$1.65 to \$3.27 saved in employee health care costs for every \$1.00 spent on worksite wellness programs; Chapman, 2012; Lerner, Rodday, Cohen, & Rogers, 2013), little is known about what components of worksite wellness programs are most effective in promoting health; greater knowledge in this area can improve return on investment as superfluous elements of healthcare interventions are eliminated.

Worksite wellness programs have also had highly variable results with regard to health outcomes (Woolf, 2009), and—as a result—return on investment, which can contribute to employer reluctance to implement worksite wellness programs. Specifically, while worksite wellness programs often demonstrate statistically significant gains in various health outcomes, effect sizes for improvements in variables such as self-perceived health, work productivity, and absenteeism are consistently small; meta-analyses suggest worksite wellness programs are more effective when participants have regular—at least weekly—contacts (Rongen, Robroek, van Lenthe, & Burdorf, 2013). In short, research is needed to demonstrate efficacy of specific work-based wellness programs in order to determine what works (and for whom) and to demonstrate program efficacy to employers.

Self-Management Model

The need for an affordable, scalable, and replicable intervention—that also holds employees’ interest—is clear. The self-management model for addressing chronic illness shows significant promise as a worksite intervention; indeed, self-management is viewed as an effective intervention and emerging area of study within the health promotions field (Lorig & Holman, 2003; National Center for Chronic Disease Prevention and Health Promotion, 2012). Self-management interventions are based on the Stanford Chronic Disease Self-Management Program (CDSMP), which consists of six weekly 2.5 hour workshops provided in community settings (Stanford Patient Education Research Center, 2014). Workshops are led by two facilitators, and one or both of these facilitators are non-health professionals who also have chronic disease. Participants are given a companion book, *Living a Healthy Life with Chronic Conditions, 4th Edition*, and an audio CD for relaxation, *Relaxation for Mind and Body* (Stanford Patient Education Research Center, 2014).

In the classic CDSMP intervention, participants receive education on chronic conditions and health behaviors then create an action plan where they set specific, individual, and intrinsic health goals for the following week. Facilitators and group members then help each other tailor the proposed action plan until the participant is able to rate his or her confidence in achieving the goal at a 7 on a scale of 0 to 10 (0 = not at all confident, 10 = totally confident). The following week, participants reflect upon their goals and facilitators help group members problem-solve barriers to progress; then participants receive new education on chronic disease management and create an action plan for the following week. Though the specific resources (e.g., books, audio) or

education offered may change depending upon the targeted population, self-management interventions typically have the following components: six weekly 2.5 hour sessions led by two facilitators (at least one of whom is a lay facilitator) whereby participants receive education, create action plans, and evaluate progress (Lorig, Gonzalez, & Laurent, 2010).

In self-management, the patient is viewed as an active participant in his or her recovery as opposed to a passive recipient of treatment (Creer, Renne, & Christian, 1976). This model posits that everyone has a health management style, regardless of whether this style embraces health behaviors or avoids healthier lifestyle choices (Bodenheimer, Lorig, Holman, & Grumbach, 2002; Lorig & Holman, 2003). The approach to patients is collaborative, and doctors and patients work together to identify health goals based on what is important to the patient and whether he or she believes the goal is achievable. Self-management interventions are affordable and scalable in that they are lay-led, and, while historic self-management interventions have typically lasted 2.5 hours once per week for six weeks, a worksite intervention may ultimately be modified to fit within the typical one hour lunch period (Lorig & Holman, 2003). These interventions are also replicable as peer facilitators follow a clear manual with instructions for goal-setting and goal-modification to increase participant health behavior self-efficacy.

Self-management is an approach based in social cognitive theory, which states that expectations someone has about his or her *ability* to perform a behavior or achieve a psychological state influences whether someone will attempt to perform a behavior, how much effort he or she will expend, and how long the person will persevere when faced with barriers (Bandura, 1977a). Bandura indicated that *self-efficacy* beliefs are domain-specific, and just because someone is confident in one area does not necessarily mean

that he or she is confident with respect to behavior in another domain, such as health behavior. Other researchers, however, conceptualize a general sense of self-efficacy as a “broad and stable sense of personal competence to deal effectively with a variety of stressful situations” (Schwarzer & Jerusalem, 1995, p. 440). Group-based interventions can improve individual self-efficacy through programming that increases skills mastery, gives opportunities for modeling of behaviors, provides alternative explanations for bodily symptoms, and allows for positive social persuasion (Lorig & Holman, 2003). Additionally, behavior-based interventions that allow for specific goal-setting, social contracts, and feedback from others have been demonstrated to be more effective than traditional cognitive strategies like health education (Anderson et al., 2009; Bodenheimer et al., 2002; Conn, Hafdahl, Brown, & Brown, 2008). As participants tailor their goals until they are able to rate with confidence they can achieve those goals, the link between self-management interventions and Bandura’s self-efficacy theory is clear.

Self-management in particular has demonstrated effectiveness in increasing health behaviors among people with heart disease, diabetes, chronic pain, arthritis, and serious mental illness (Bodenheimer et al., 2002; Chodosh et al., 2005; Lorig & Holman, 2003; Lorig, Ritter, Pifer, & Werner, 2014; Warsi, Wang, LaValley, Avorn, & Solomon, 2004). Research also suggests that self-management interventions reduce participant need for inpatient and outpatient services (Lorig & Holman, 2003; Ory et al., 2013) and significantly reduces emergency room (ER) visits for chronically ill people six months after participation (Ahn et al., 2013). Finally, self-management also holds promise for use in health promotion with healthy populations, as factors that contribute to health management in chronically ill populations also contribute to health maintenance and

prevention of illness in non-clinical populations. Importantly, however, research on “mechanisms and processes that facilitate or impede self-management of chronic conditions” is in its infancy, as noted by a 2015 NIH call for proposals to better understand these factors that contribute to or hinder self-management success.

Risk and Resiliency Factors

It is also clear that there is a need for greater information on what factors contribute to positive health behavior outcomes for participants. Knowledge of participant factors that facilitate or hinder success can help match people to an appropriate health promotion intervention. People who are matched with appropriate interventions are more likely to enjoy their experience, find it helpful, and experience greater success. An NIH publication noted that “we know from everyday life when we are told ‘one size fits all,’ the garment in question tends not to fit anybody very well” (Behavioral and Social Sciences Research Branch, 2014). Alternatively, inappropriate or even harmful treatments can occur when moderating effects of participant variables are ignored for a given intervention; as such, studies examining risk and resiliency factors for health and counseling psychology research is viewed as a routine part of intervention evaluation (Frazier, Tix, & Barron, 2004).

It should be noted that some studies suggest that “treatment matching” as historically researched may not be particularly effective; however, there is great variety in the ways that treatment programs may be matched for participants and not all are thoroughly understood or researched (*Treatment Matching in Alcoholism*, 2003). Furthermore, research suggests that traditional research designs may be insensitive to matching effects, and that treatment matching research conducted with Generalizability

and Social Relations Model (G/SRM) are more sensitive to the effects of matching participant to treatment (Lahey & Ondersma, 2008). With regard to self-management, little is known about what individual factors are present in the “ideal” self-management candidate or if there are contraindications for self-management.

Prior research on risk and resiliency suggest that there are factors that help or hinder someone’s ability to engage in health behaviors as part of a specific health promotion intervention; these factors include gender, level of education, self-efficacy, past exercise behavior, depression, stage of change, and perceived health status (Bowen et al., 2009; Glasgow, Toobert, & Gillette, 2001; Haug et al., 2010; Jerant, Friederichs-Fitzwater, & Moore, 2005; Luszczynska, Schwarzer, Lippke, & Mazurkiewicz, 2011; Milne, Sheeran, & Orbell, 2000; Norman, Conner, & Bell, 2000). Indeed, past researchers have suggested that individual factors such as social cohesion, social networks and supports, smoking status, substance abuse, diet, level of physical activity, age, socioeconomic status, obesity, personality, spirituality, religion, meaning-making, experiences of discrimination, and sexual orientation contribute to health status and outcomes for a variety of health conditions (Brondolo, Lackey, & Love, 2012; Greenwald & Sondik, 1986; Luepker et al., 1994; Masters & Spielmans, 2007; Meyer, 2012; Park, 2012; Peterson & Hughey, 2004; Ruiz, Prather, & Steffen, 2012; Smith, Gallo, Shivpuri, & Brewer, 2012; U.S. Department of Health and Human Services, 2000; Werner, 1992; Wills & Anette, 2012; Wing & Phelan, 2012). There is a need to understand the conditions under which self-management works best and for whom; knowledge of risk and resiliency factors in self-management can help mitigate potential barriers to improved health.

Factors that facilitate or prevent effective health management are also important to consider. Self-management in health promotion has been defined as the “day-to-day tasks an individual must undertake to control or reduce the impact of disease on physical health status” (Clark et al., 1991, p. 5). A focus on self-management in examining health interventions and outcomes developed at least in part from the recognition that—regardless of health behaviors—everyone has a health management style (Bodenheimer et al., 2002; Lorig & Holman, 2003). Research suggests barriers to active self-management of chronic health conditions include depression, low self-efficacy, difficulty exercising, fatigue, low family support, pain, and financial insecurity (Bayliss, Ellis, & Steiner, 2007; Glasgow et al., 2001; Jerant et al., 2005). High levels of social support and self-efficacy have been demonstrated to facilitate self-management of disease (Glasgow et al., 2001). Personality factors have also been found to moderate effectiveness of a home-based self-management intervention: compared with patients in a control and telephone self-management interventions, patients in a home self-management intervention who were high in neuroticism or low in extraversion, conscientiousness, or agreeableness received greater benefits (Franks, Chapman, Duberstein, & Jerant, 2009).

With regard to depression and self-efficacy in particular, research on self-management interventions for chronic disease populations have found that participants with greater depressive symptoms appear more likely to experience gains in self-efficacy scores than less depressed participants (Jerant, Kravitz, Moore-Hill, & Franks, 2008). Given that self-efficacy is consistently directly correlated with health outcomes, this suggests that self-management may be more effective for depressed participants than interventions that do not target health behavior self-efficacy. Comparisons of chronic

disease self-management interventions with standard of care controls reinforces this, as participants in the treatment condition with higher initial levels of depression experienced greatest reductions in health distress as compared with participants in the control group (Ritter, Lee, & Lorig, 2011). This makes sense, as research has shown a strong and consistent inverse relationship between depression and both situational and general self-efficacy (Cutrona & Troutman, 1986; Maciejewski, Prigerson, & Mazure, 2000; McFarlane, Bellissimo, & Norman, 1995), and self-management interventions specifically work to increase *health behavior self-efficacy*—a participant’s confidence in enacting health behaviors and meeting health goals (Lorig & Holman, 2003).

Work-based Adaptation of Self-Management Intervention

The self-management model has been implemented in previous studies in six 2.5-hour weekly lay-facilitated group sessions with approximately 12 to 15 members (Lorig & Holman, 2003). These sessions increase health behavior self-efficacy through the facilitation of self-directed action planning, problem-solving, and peer support (Lorig & Holman, 2003). Prior research on the self-management model has thus far focused on the management of chronic illness, and participants learned to manage three health domains: their health condition (e.g., medication adherence, scheduling doctor’s appointments), their activities of daily living (e.g., work attendance, household chores), and psychological states as influenced by the condition (e.g., denial of seriousness of the condition, anger at being ill or having limited mobility; Lorig & Holman, 2003).

Risk and resiliency factors in health interventions have been relatively well studied, but as self-management is a budding area of study, less is known about factors that contribute to participant success. Some research has been conducted on self-

management approaches for chronic disease populations, but little is known about contributors to self-management behaviors in primary prevention. This novel application of the self-management model in a workplace setting with a non-clinical, adult population appears to be effective (Schopp, Bike, Clark, & Minor, 2015), but it is unclear how risk factors and protective factors contribute to participant outcomes. Thus, it is clear that research on participant risk and promotive factors represents the next logical step in developing empirical evidence to tailor worksite self-management wellness programs among healthy populations.

The present study uses data collected from the *Act Healthy* program, an intervention adapted from the Stanford Patient Education Research Center Self-Management programs. This adaptation changed the interventions from a tertiary, or chronic disease, health promotion intervention to a primary and secondary preventive workplace-based intervention for a non-clinical, heterogeneous population of working adults (Lorig & Holman, 2003; Stanford Patient Education Research Center, 2014). In this randomized-control trial (RCT) intervention, an individual control intervention—*Eye on Health*—was adapted from a standard disease management model offered through a third party insurance carrier of a large self-funded employer health benefit plan.

Research Questions and Hypotheses

The current study tests the following research question: What factors predict success in a preventive workplace self-management intervention among non-clinical adults? Specifically, self-efficacy, depression, and interpersonal relationships were explored as potential moderators across the *Act Healthy* and *Eye on Health* interventions as there is empirical support for these factors as moderators of success in other health

behavior interventions (Haug et al., 2010; Jerant et al., 2008; Luszczynska et al., 2011). Furthermore, self-efficacy, depression, and interpersonal relationships have been selected as variables of interest based upon theoretical and evidence-based rationale.

Self-efficacy makes sense as a potential moderator of health outcomes across the *Act Healthy* and *Eye on Health* interventions for a number of reasons. Self-efficacy has been identified as an important predictor of initiation, adoption, and maintenance of health behaviors (Conner & Norman, 2005), suggesting people with high perceived self-efficacy are better able to begin health behaviors and maintain positive change. Self-management interventions intentionally work with participants to improve self-efficacy, whereas the educational control does not encourage participants to select health goals based upon their perceived likelihood of success. Thus, it is reasonable to predict that participants who already endorse high self-efficacy would not receive a particular benefit in one health intervention over another. Participants who endorse low self-efficacy, however, may fare better in the *Act Healthy* intervention as they receive assistance in tailoring health goals until they perceive the behaviors necessary to attain those goals are within their control. Indeed, there is empirical support for the importance of self-efficacy

Research suggests a strong link between low self-efficacy and experiences of depression, as low self-efficacy is a salient component of depression: people with depression often think they are less capable than others of accomplishing goals (Maddux, 2009). Furthermore, models of self-efficacy and depression suggest a causal and interdependent relationship (Bandura, 1982). Empirically, researchers have found strong correlations between depression and low perceived self-efficacy (Jerant et al., 2008; Maciejewski et al., 2000). Given this, an intervention that directly improves self-efficacy

may also have a positive impact on depression. Thus, it could be reasonable to predict that participants who endorse high depression would benefit more from an intervention that targeted self-efficacy than participants who are low in depression. Self-management programs—such as *Act Healthy*—also specifically address depression and emotional health in educational content; education-only approaches often focus on the targeted diagnosis or health behavior. Additionally, the *Act Healthy* intervention is a group intervention, and research suggests that social isolation and lack of social support are factors that contribute to depression (Wills & Ainette, 2012). The *Act Healthy* modality may lend itself to greater social support than the individualized *Eye on Health* intervention, which may contribute to differential outcomes for participants who endorse high depression. With regard to evidence-based rationale, randomized controlled trials have demonstrated statistically significant improvements in depression for participants in self-management intervention groups in a variety of populations, including people with diabetes, arthritis, and severe mental illness (Barlow, 2000; Lorig, 2001; Lorig, 2013; Lorig, Ritter, Pifer, 2014).

Finally, there is reason to suspect that a participant's self-rating of interpersonal relationships, which entail "utilizing communication to achieve a sense of intimacy and closeness within meaningful, rather than more casual, relationships with others" (Walker & Hill-Polrecky, 1996, p. 2), may moderate outcomes across interventions. Research has supported a positive relationship between social and relational support and effective illness self-management (Gallant, 2003). Self-management interventions are provided in a group context, and participants work toward their goals with support from facilitators and group members. Indeed, social persuasion and support are viewed in the self-

management literature as an important component of self-efficacy enhancement and are intentionally woven into the self-management intervention structure (Lorig, 2003). Participants in the educational control receive individual phone consultation from medical professionals, which limits the opportunities for formal and informal social support. Empirical research also suggests that self-management interventions can strengthen social support: participants in a large-scale self-management intervention showed statistically significant improvements in social activity as well as depression one year post intervention (Lorig, 2001).

Physical activity and perceived health status have been selected as outcome variables to be examined across interventions. Both were chosen because they have been heavily researched as outcome variables and indicators of overall health in the health intervention and health behavior literature (Bauman, Sallis, Dzewaltowski, & Owen, 2002; Dishman et al., 2009; Dishman et al., 2004; Goldstein, Siegel, & Boyer, 1984; G. A. Kaplan et al., 1996; Luszczynska et al., 2011; Norman et al., 2000; Pohjonen & Ranta, 2001).

As adapted self-management represents a novel intervention for use in primary and secondary prevention, and as there is little research examining moderators of health outcomes across self-management and care-as-usual interventions, clear hypotheses are difficult to determine. However, some predictions on the basis of theory and past research were possible. Specific research questions were as follows:

1. Do self-efficacy, depression, or interpersonal relationships moderate the relationship between intervention condition and physical activity?

2. Do self-efficacy, depression, or interpersonal relationships moderate the relationship between intervention condition and perceived health status?

Specific hypotheses were as follows:

- It was predicted the effects of the intervention (as measured by physical activity and perceived health status) would be stronger for participants with low self-efficacy, high depression, and low interpersonal relationships at baseline.

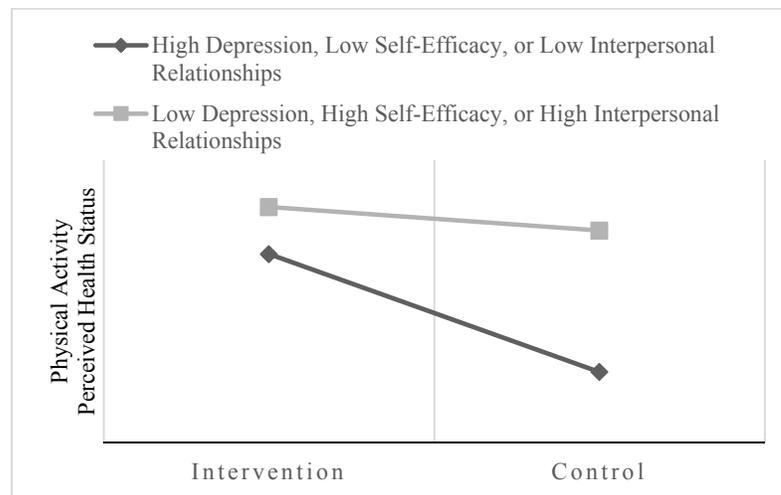


Figure 1. Predicted Moderation Effects

Chapter 2: Methodology

Participants

One hundred ninety-eight full-time University of Missouri benefit-enrolled employees signed informed consent documents and completed baseline measures. Participants were enrolled in a randomized controlled design with repeated measures, and enrollment occurred in two separate phases: One hundred Phase 1 participants were enrolled in June 2013, and 98 Phase 2 participants were enrolled in October 2013. Participants were randomized into the *Act Healthy* self-management intervention group or into a standard disease management approach—*Eye on Health*—which consisted of education and outreach materials adapted from a disease management program by the University of Missouri’s third-party employee health insurance carrier. In consultation with biostatisticians, power analyses yielded a base group sample size of 78 (intervention) and 78 (control) as the minimum sample size necessary for analyses. Data were collected at zero and three months (Time = 1 and Time = 2, respectively), and 188 participants completed measures at Time 2. The attrition rate between Time 1 and Time 2 was approximately 5%, exceeding expectations for retention. More information on specific data collected is provided in the Measures section; see Schopp et al. (2015) for additional information related to data collection for this study.

Demographic information is presented in Table 1. The sample was predominantly female (90.9%), white (87.1%), and college-educated (75.9%).

Table 1
Demographic characteristics of Time1 participants, reported as number of participants

Characteristics	Act Healthy (n=99)	Eye on Health (n=99)
Age of subject	46.34±10.94 ^a	44.41±11.30 ^b
Sex of subject, male (%)	7 (7.1)	11 (11.1)
Race		
White, non-Hispanic	86	86
African American	3	4
Latina/o	1	1
Asian	7	5
American Indian	1	0
Alaska Native	0	0
Other	1	3
Annual Income		
Less than \$10,000	0	1
\$10,000 to \$39,999	28	24
\$40,000 to \$69,999	28	31
\$70,000 to \$99,999	23	19
More than \$100,000	20	24
Level of Education		
8 th grade or less	0	0
9 th -12 th grade, no diploma	0	0
High school graduate or GED	6	4
Completed a vocational, trade, or business school program	10	3
Some college credit, no degree	14	12
Associate's degree (AA, AS)	7	8
Bachelor's degree (BA, BS, AB)	29	37
Master's degree (MA, MS, MSW, MBA)	20	27
Doctorate (PhD, EdD) or professional degree (MD, DDS, DVM, JD)	12	8
Enrollment in UM Medical Plan, Enrolled (%)	91 (91.9)	92 (92.9)
Days Per Week Physically Active	2.46±1.60 ^c	2.97±1.94 ^c
Tobacco Use		
Currently Uses Tobacco	6	6
Currently Does Not Use Tobacco	80	83
Previously Used Tobacco	12	9
Perceived Health Status		
Excellent	7	6
Very Good	23	36
Good	49	42
Fair	18	13
Poor	2	1

^aRange 23.0-67.0 years; ^bRange 23.0-70.0 years; ^cRange 0.0-7.0 days

Act Healthy Development and Adaptation

The *Act Healthy* intervention consisted of six weekly 50-minute group sessions with approximately 5 to 10 participants per group. *Act Healthy* was adapted from a standard Chronic Disease Self-Management Program (CDSMP), which consisted of six

weekly 2.5 hour workshops (Stanford Patient Education Research Center, 2014).

Between 2010 and 2011, investigators completed feasibility and pilot testing at the University of Missouri in a pre/post, randomized wait-list controlled follow-up design among 98 university employees. Participants reported significant improvement in health behaviors and health self-efficacy in six-month follow up data, despite the intervention's prevention focus and significantly shorter weekly sessions and peer leader training (Schopp et al., 2015). *Act Healthy* participants experienced significantly greater improvements than wait-list control participants. Investigators updated participant and trainer manuals based upon the pilot study.

Intervention

Act Healthy sessions were co-led by a research staff member and lay employee facilitator volunteers to maintain intervention consistency. Leaders followed a manual to solicit intrinsic participant health goals, and, in accordance with the principles of Social Cognitive Theory, helped participants modify goals to increase health behavior self-efficacy (Bandura, 1977b). See Appendix D for the manual. In sessions, *Act Healthy* leaders asked participants to select a weekly goal and create an action plan for achieving that goal. Participants then rated their confidence with regard to achieving that goal on a scale of 1 (lowest) to 10 (highest). Action plans were required to be specific, achievable, and measurable. Then, participants self-rated their confidence in achieving that action plan. If the confidence rating was below eight, participants modified their action plan until their self-confidence rating reached at least an 8 out of 10. Action plans included a description of a desired health behavior, intensity of action, and target days, times, and places for the health behavior. Furthermore, goal areas included a wide variety of whole

health domains, including emotional regulation, spiritual practices, family time, water intake, physical activity, health check-ups, medication compliance, and nutrition. At each session, participants reported on the previous week's action plan and created a new action plan. They also engaged in peer group support and shared health resources.

For example, a participant might identify a goal of consuming eight glasses of water every day for the next week. After rating his or her confidence in achieving that action plan at a 4 out of 10, he or she might amend the action plan to committing to bring a 32-ounce bottle of water to work Monday through Friday and refill the bottle at least once on three out of five work days. The participant would then re-rate his or her self-confidence in the action plan at an 8 out of 10.

Control

In addition to receiving health education mailings, control group subjects participated in individual phone calls with a nurse to discuss health concerns. The *Eye on Health* intervention was adapted from a standard disease management model offered through one of the largest health benefits companies in the United States. This standard of care program for disease management typically consists of health-related mailings to the participant's home followed by a follow-up phone call with a health care professional. The mailings usually included health information on target conditions, such as high blood pressure, diabetes, and heart disease, as well as recommendations regarding health behaviors and health care services. For the present study, disease management protocols were adapted for general health promotion and wellness as opposed to intervention for a specific condition. Control protocols and materials emphasized disease prevention and included Centers for Disease Control and Prevention (CDC) and other public health

recommendations (see Appendix C). Each control participant received this modified mailing and a follow up telephone calls from a registered nurse who was trained to discuss the mailings, the participant's current health status, and answer participant questions.

Measures

Individuals participated in the *Act Healthy* intervention or control group between June 2013 and October 2013. Data were collected prior to the intervention (Time = 1) and at three months post intervention (Time = 2). Baseline and Time 2 measures all consisted of a general demographic survey, the *Health Lifestyle Profile II*, the *General Self Efficacy Scale*, the *Patient Health Questionnaire Depression Scale*, as well as biometric measurements (See Appendix C).

The general demographic survey included items on gender, age, racial/ethnic group(s), level of education, socioeconomic status, employment duration, type of health insurance, physical activity, smoking status, perceived health status, and current and past medical conditions. Perceived health status was reverse coded (1 = Excellent Health, 5 = Poor Health). See Table 1 for baseline participant demographic information.

The *Health Lifestyle Profile II* (HPLP-II) assesses health behavior frequency in six domains: health responsibility, physical activity, spiritual growth, nutrition, stress management, and interpersonal relations (Walker & Hill-Polrecky, 1996; Walker, Sechrist, & Pender, 1987). This assessment has 52 four-point Likert-type items with ratings from *never* (1) to *routinely* (4). A sample item for each subscale is as follows: health responsibility (e.g., *Report unusual signs or symptoms to a physician or other health professional*), physical activity (e.g., *Follow a planned exercise program*),

nutrition (e.g., *Limit use of sugars and food containing sugar [sweets]*), spiritual growth (e.g., *Believe that my life has purpose*), interpersonal relations (e.g., *Discuss my problems and concerns with people close to me*), and stress management (e.g., *Take some time for relaxation each day*). One item was inadvertently deleted from the interpersonal relations subscale (*Find it easy to show concern, love and warmth to others*), reducing total number of subscale items from nine to eight. With regard to psychometric properties, Walker and Hill-Polrecky (1996) indicate the HPLP-II has high internal consistency for the total scale ($\alpha = .943$). Alpha coefficients for associated subscales ranged from .793 to .872. Three-week test-retest reliability was also high ($r = .892$). Content validity was assessed via content evaluation and literature review, and factor analysis supported the same six dimensions of health-promoting lifestyle associated with each subscale. Cronbach's alpha value for the interpersonal relationships subscale for the present study was .76.

The *General Self-Efficacy Scale* (NGSE) assesses participants' broad appraisals of their ability to meet goals and task demands in a variety of contexts (Chen & Gully, 1997). This five-point Likert-type scale uses the anchors *strongly disagree* (1) and *strongly agree* (5) and has a total of eight items. Sample items include: *I will be able to achieve most of the goals that I set for myself*, and, *When facing difficult tasks, I am certain I will accomplish them*. Chen, Gully, and Eden (2001) conducted two studies to examine psychometric properties. They found high internal consistency: In Study 1, they reported coefficient alphas of .87, .88, and .85 at Time 1, Time 2, and Time3, respectively; In Study 2, they reported $\alpha = .86$ and .90 at Time 1 and Time 2, respectively. With regard to test-retest reliability for Study 1, investigators collected data

at three time points: Time 1, Time 2 (an average of 22 days after Time 1), and Time 3 (an average of 67 days after Time 1). They found moderate test-retest reliability ($r_{t1-t2} = .65$, $r_{t2-t3} = .66$, and $r_{t1-t3} = .62$). For Study 2, test-retest reliability after 20 days was similar ($r = .67$). To examine content and discriminant validity, graduate students in industrial/organizational psychology and undergraduate psychology students were given definitions of general self-efficacy and self-esteem and asked to rate whether the eight items capture general self-efficacy, self-esteem, or another construct. Graduate students sorted 98% of NGSE items as capturing the construct of general self-efficacy, and undergraduate students sorted 87% of items as capturing general self-efficacy. Cronbach's alpha for the present study was .85.

The *Patient Health Questionnaire Depression Scale* (PHQ-9) is a nine item survey of depression symptoms that uses a four-point Likert-type scale (anchors *not at all* to *nearly every day*). Each item has the same prompt: *Over the last 2 weeks, how often have you been bothered by any of the following problems?* Sample items under this prompt are as follows: *Little interest or pleasure in doing things*, and, *Feeling down, depressed, or hopeless*. This survey is based upon criteria for Major Depression in the Diagnostic and Statistical Manual of Mental Disorders, Fourth Edition (DSM-TR-IV) and is considered a well-validated measure of depression symptom severity. In a validation study of the PHQ-9, investigators reported high internal consistency (Cronbach's alpha = .89), and when compared to a mental health professional interview as a standard, the PHQ-9 had a sensitivity (true positive rate) of 73% and specificity (true negative rate) of 94% (Kroenke, Spitzer, & Williams, 2001). Cronbach's alpha for the present study was .81.

Biometric measures included blood pressure (mm/Hg), waist circumference (cm), nine-hour fasting blood glucose (mg/dL), and fingerstick Cholestec nine-hour fasting lipid profile (triglyceride, HDL, and total cholesterol in mg/dL). These measurements were completed according to criterion-based reliability to Anthropometric Standardization Reference Manual or Cholestec device manufacturer standards (Lohman, Roche, & Martorell, 1988).

Data Collection Procedures

Data collection for all time points was approved through the University of Missouri's Internal Review Board (IRB). Biometric data collectors were trained in criterion-referenced and sanitary collection procedures to ensure safe and accurate measurement.

Participants were recruited via email and fliers; *Healthy for Life* Wellness Ambassadors—lay employee volunteers—and Building Coordinators received initial recruitment emails that were then distributed to employees at their worksites. Building Coordinators were also sent fliers to post in their buildings and fliers were posted on campus in select locations where *Act Healthy* interventions were to be held. Group locations for the *Act Healthy* interventions were dictated by co-leader workplace in order to maximize co-leader convenience. Finally, the study was advertised in the university hospital newsletter, in weekly *Healthy for Life* updates to Wellness Ambassadors, and via mass email distributed by the Information Technology department. Participants were informed that their participation was confidential and voluntary and that they had the right to withdraw from the study at any time. Participants signed informed consent documents (Appendix B), and they were informed of potential harms associated with

participation. Incentives for participation included a \$10 grocery store gift certificate at time 1 and another at \$10 grocery store gift certificate at time 2.

Analytical Procedures and Plan

Path analysis, a type of structural equation modeling (SEM) with manifest variables, was used to analyze data and determine if the primary study variables (self-efficacy, depression, and interpersonal relationships) moderated the relationship between intervention condition (*Act Healthy* and *Eye on Health*) and physical health outcomes (physical activity and perceived health status). Because the study focused on examining the magnitude of moderator effects, the overall fit of the model was not of interest. Intervention status was dummy coded: 1=experimental *Act Healthy* condition, 0=control *Eye on Health* condition. Analyses were conducted using SPSS and AMOS software. Exogenous variables consisted of intervention group, moderator variables at time 1 (self-efficacy, depression, interpersonal relationships), and interaction terms (self-efficacy multiplied by intervention group, etc.); these variables were specified to covary. Additional predictor variables include physical activity and perceived health status at time 1. Endogenous variables were health outcomes at time 2: physical activity and perceived health status. See Figure 2 for the complete model.

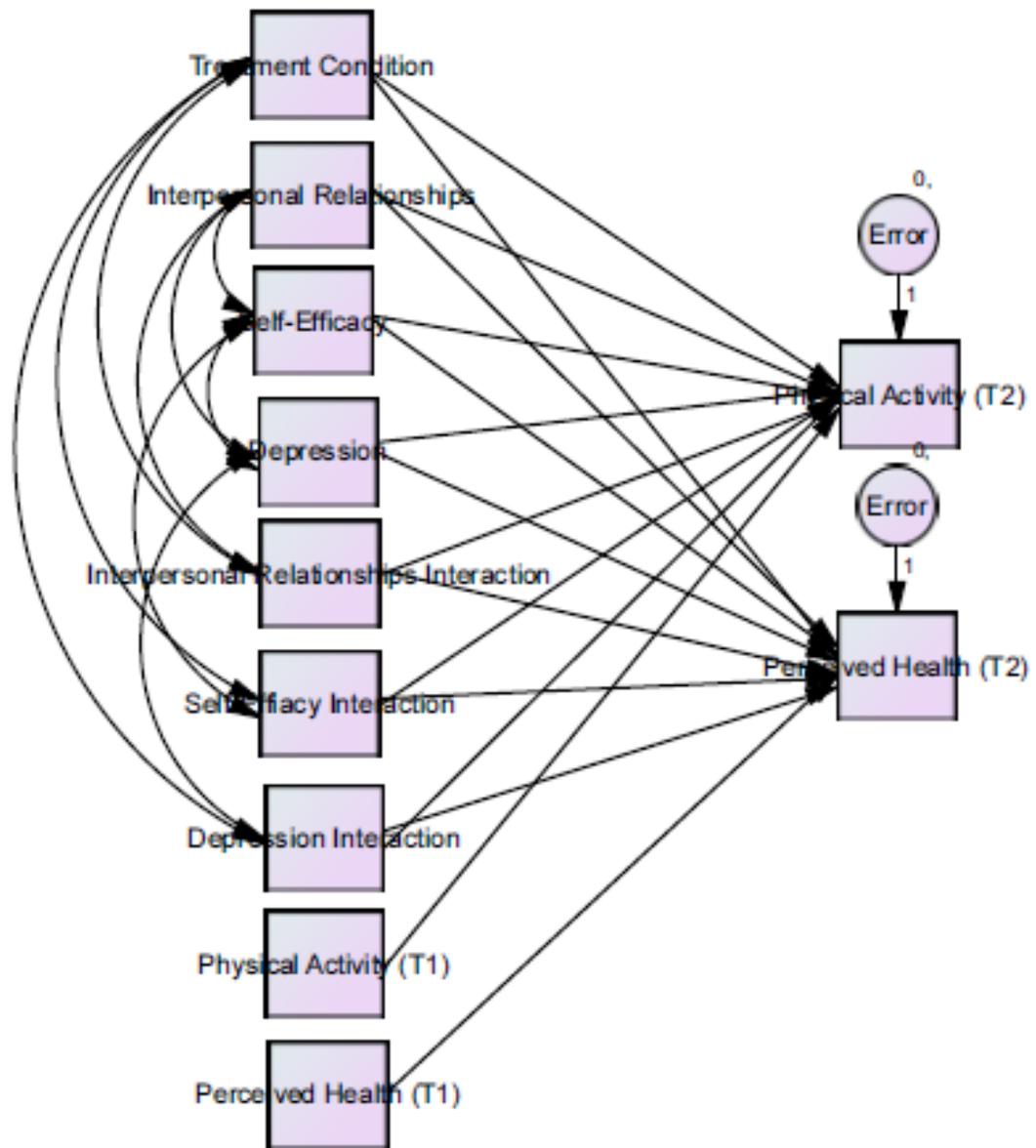


Figure 2 Path analysis model

Results

Quality Check and Missing Data

Analysis for missing data was conducted prior to evaluating statistical assumptions for the present study's data analysis procedures. One-hundred ninety-eight participants completed data entry at time 1, and 188 participants completed measures at time 2. Two additional participants completed time 2 measures, but failed to answer time 2 survey item regarding physical activity. Thus, data for perceived health status were unavailable at time 2 for 10 participants, whereas data for physical activity were unavailable at time 2 for a total of 2 additional participants. With regard to missing data due to missed items on predictor variables at time 1 (HPLP-II, NGSE, and PHQ-9), data from any participant who omitted more than two items on an individual scale were removed. Two participants failed to complete sufficient items for variables at time 1, and their data were removed. Similarly, one participant failed to complete the physical activity and perceived health status items at time 1, and that participant's data were removed as well.

Analyses were conducted with missing data removed as well as with an intent-to-treat analysis, whereby participants who dropped out of the study or who failed to complete the physical activity item at time 2 were assigned their baseline values. There was no meaningful difference between results with missing data removed and results with imputed data, suggesting the attrition did not significantly impact findings. Only three participants did not have complete data at time 1; thus, the overall n for the analysis is 195. Study analyses were conducted with the dataset containing imputed values.

Statistical Assumptions

Tests for multivariate normality, multicollinearity, linearity, and homoscedasticity were completed prior to conducting main analyses. With regard to multivariate normality, histograms as well as skewness and kurtosis statistics (ranges of -0.32 to 0.68 and -0.67 to 0.69, respectively) indicated variables were relatively normally distributed. To assess for the presence of univariate outliers, data from variables of interest were transformed to z-scores, and any variable with a z-score above the .001 level ($z = 3.31$) was considered an outlier (Tabachnick & Fidell, 2001). No z-scores exceeded the 3.31 cut-off, and thus, there were no univariate outliers.

Multicollinearity was assessed through a correlation table, and a cut-off of $r = \pm 0.9$ for explanatory variables was used. No multicollinearity was found for any variable with the exception of the correlation between the self-efficacy and the interpersonal relationship interaction terms ($r = 0.98$); as these are interaction terms and have both been multiplied by treatment group, the high correlation is not necessarily suggestive of multicollinearity issues with the data set. Collinearity statistics were used to test the assumption of linearity, and all variables with the exception of interaction terms had VIF values of less than 3, suggesting the assumption of linearity was met (O'Brien, 2007). Levene's test was used, and the assumption of homogeneity of variance was met.

Descriptive Statistics

Table 2 provides means, standard deviations, and correlations for primary study variables at time 1. In general, correlations among baseline variables were in the expected direction. Mean scores for variables are as follows: participants endorsed exercising approximately 2.67 days per week and had a perceived health status score of 2.76, which

is between Good (3) and Very Good (2) on the Likert scale. The HPLP-II Interpersonal Relationships subscale score is an average of eight Likert-type items, with scores ranging from 1 to 4 (4 is indicative of routine meaningful social engagement); an average score of 3.09 suggests somewhat routine social engagement. Similarly, the NGSE score is an average of eight Likert-type items, with scores ranging from 1 to 5 (5 is indicative of high perceived self-efficacy); an average score of 3.95 suggests somewhat high general perceived self-efficacy. Finally, the PHQ-9 score is a sum of item scores, with totals ranging from 1 (Minimal Depression range) to 27 (Severe Depression range); a score of 8.26 is in the Mild Depression range. These baseline descriptive statistics are in keeping with expectations for a non-clinical population with high occupational functioning. Taken together, baseline demographic data suggests that participants represent a high functioning, healthy sample.

Table 2

Means, Standard Deviation, and Zero-Order Correlations (n=195)

Variable	<i>M</i>	<i>SD</i>	1	2	3	4
Physical Activity	2.67	1.75				
Perceived Health Status**	2.76	.85	-.26*			
Interpersonal Relationships	3.09	.47	.07	-.40*		
Self-Efficacy	3.95	.42	.08	-.30*	.40*	
Depression	8.26	4.83	-.22*	.45*	-.40*	-.38*

*Significant at the .01 level; **Perceived Health Status was reverse-coded (1 = Excellent Health, 5 = Poor Health)

Path Analysis

Standardized beta weights for the path model are presented in Table 3. As expected, baseline physical activity had a strong association with follow-up physical activity. There were no main effects for the other predictor variables, including intervention condition, on physical activity. Finally, there were no interaction effects

between interpersonal relationships, self-efficacy, and depression and treatment condition for physical activity. Similarly, baseline perceived health had a strong association with follow-up perceived health. There were no main effects for predictor variables on perceived health status, including intervention condition, with the exception of depression. Only one interaction term—interpersonal relationships—was observed to have an interaction effect at the .05 level for perceived health status.

Table 3
Path Analysis Results for Health Outcomes at T2 (n = 195)

Variable (T1)	Physical Activity		Perceived Health Status	
	β	p	β	P
Treatment Condition	-1.91	.53	-.58	.60
Interpersonal Relationships	-.16	.61	-.06	.62
Self-Efficacy	-.04	.93	.02	.92
Depression	-.02	.70	.04	.01*
Interpersonal Relationship Interaction Term	-.003	.99	.18	.02*
Self-Efficacy Interaction Term	.53	.33	-.02	.91
Depression Interaction Term	-.01	.85	-.001	.95
Physical Activity	.43	>.001*	--	--
Perceived Health Status	--	--	.52	<.001*

* Significant at .05 level

Simple Slope Analysis

Follow-up simple slope analyses were conducted to probe the nature of this interaction effect. Data was split along the median for participants who were high or low on interpersonal relationships. Path analyses were rerun for each data set to determine the relationship between high/low interpersonal relationship status and perceived health status outcomes and to determine whether significant semi-partial effects exist for interpersonal relationships on perceived health status by treatment group. Beta weights are presented in Table 4.

Table 4
Path Analysis Results for Two-Way Interaction Between Interpersonal Relationships and Treatment Condition (Time 1) in Predicting Perceived Health Status (n = 195)

	<i>B</i>	β	<i>P</i>
Low Interpersonal Relationships	1.60	.89	.31
High Interpersonal Relationships	-1.37	-.86	.34

Although the relationship between interpersonal relationships and treatment condition on perceived health status was in the expected direction for those high versus low in interpersonal relationships, the magnitude of the individual simple slopes tests were not statistically significant. Thus, there were no significant interaction effects for this study.

Discussion

The purpose of this study was to determine whether interpersonal relationships, self-efficacy, and depression moderated the relationship between treatment condition and health outcomes of physical activity or perceived health status. In general, results from the study failed to support the hypotheses, as in 5 of the 6 analyses there was no interaction effect between treatment condition and the moderator variable. The exception was that of interpersonal relationships, which yielded a statistically significant result in the predicted direction as a moderator of treatment condition and perceived health status. Follow up simple slope analyses, however, failed to reach the level of significance, and as such, none of the study predictions ultimately resulted in significant interaction effects. As such, self-efficacy, interpersonal relationships, and depression failed to moderate the relationship between intervention condition and health outcome. Discussion of potential reasons for study findings are presented below, as are strengths and limitations, implications for research and practice, and future directions.

Self-Efficacy

With regard to individual moderator variables, the lack of significant findings for self-efficacy is particularly salient. Self-management interventions like *Act Healthy* are theorized to increase participant self-efficacy; indeed, the intervention explicitly requires participants to modify health goals until they can rate their confidence in following through on a health goal at an eight or greater on a scale from one to ten (1 = I won't do it, 10 = Absolutely sure I will do it). Given this explicit focus on improved self-efficacy, it seems somewhat surprising that participants low in self-efficacy would not receive a greater benefit in terms of health outcomes.

It is important to note that participants completed a general self-efficacy scale (NGSE) as opposed to a specific, health-behavior self-efficacy scale. Recent research on workplace-based health interventions found a significant increase in specific *health practices* self-efficacy for participants assigned to the self-management condition as compared with those assigned to a standard wellness control (Schopp et al., 2015). It is therefore possible that findings (or lack thereof) may in part reflect the use of general self-efficacy as a primary variable instead of health behavior specific self-efficacy. This will be further discussed in the limitations and future directions sections.

Interpersonal Relationships

The lack of significant results with regard to interpersonal relationships is also of note given that the self-management *Act Healthy* intervention was a group, in-person intervention among coworkers. The standardized control, by contrast, was an individual phone intervention provided by a medical provider. The opportunities for formal and informal interpersonal supports appear to be greater with the self-management intervention. The hypothesized outcomes, however, were not borne out by the data, suggesting that participants' rating of meaningful social support does not impact the relationship between treatment condition and health outcome.

The HPLP-II Interpersonal Relationships subscale assesses for communication, closeness, and intimacy within meaningful social relationships (Walker & Hill-Polrecky, 1996). It is unclear whether participants would identify coworkers in this group intervention as being people with whom they feel close and identify a "meaningful" relationship. While the overall HPLP-II assesses for health behavior frequency, none of the Interpersonal Relationships items assesses specifically for perceived interpersonal

support with regard to health behaviors. That is to say, none of the items mentions feeling supported by healthcare providers or feeling supported by others with regard to health goals. Just as health-specific self-efficacy may be a more appropriate measure to understand changes in health behaviors, perhaps health-specific relational support may ultimately be more useful with regard to assessing support for changing health behaviors.

Even so, while the opportunities for informal health-behavior support appear to be greater with the self-management condition, it is possible that the additional social support for health behavior change in the form of the medical provider associated with the wellness control is sufficient for promoting changes in health behavior and perceived health. The data seem to suggest that the checking in with a provider on health goals is as motivating as checking in with a group of co-workers, regardless of initial perceived social connectedness. If this is true, the amount of perceived social support (general or health-specific) would not moderate the relationship between intervention and health outcome.

Depression

Similar to the other variables of interest, participant ratings of depression at Time 1 failed to moderate the relationship between intervention and health outcome. As the sample comes from a high-functioning, workplace population, it is possible that the presence of depressive symptoms in this population was not great enough to significantly impact participant ability to respond to either treatment condition. People with severe depression generally have lower occupational functioning than people without severe mood symptoms, and, as such, severely depressed people may then be less likely to be in workplace settings where these interventions are held. Furthermore, employees with high

levels of depression may find it difficult to enroll in a workplace intervention due to depressed mood or other symptoms of depressed mood, such as lethargy and loss of interest in activities.

It is also possible that the participants with higher levels of depression were more skilled in managing depression symptoms than people with depression in a clinical setting. Thus, it may be reasonable to assume that someone who has severe depression but who is able to both work and enroll in a workplace wellness program has a relatively high degree of occupational functioning. Participants' high occupational functioning could then have contributed to higher functioning within both treatment conditions despite self-reported severe depression symptoms. The additional supports of a self-management group—such as weekly access to peers and facilitators as well as explicit focus on improving health behavior self-efficacy—may not have been necessary to promote changes in health outcomes for these depressed yet high functioning participants.

Treatment Matching

Although previous research and psychological theory (such as self-efficacy theory; Bandura, 1977a), would support exploration of self-efficacy, depression, and interpersonal relationships as potential moderators across these interventions, well-reasoned research on treatment matching has failed to show significant results in the past. Project MATCH, for example, was an eight-year, multi-site study that attempted to match participants to alcohol dependence treatments based upon participant characteristics; despite the large sample size, use of a large number of closely-observed treatment providers, and theoretical rationale for matching, the researchers discovered that only one

out of ten a priori predictions was supported by the data (Project Match Research Group, 1997). Treatment matching is an attractive avenue for research as the ability to appropriately match participants to more effective treatment conditions benefits both participants—who enjoy improved health—and employers—who enjoy reduced costs. Alas, attractive and well-reasoned treatment approaches are not always equivalent to effective and evidence-based interventions.

Strengths and Limitations

Strengths. The lower-than-expected attrition rate (approximately 5%) and lower-than-expected loss of data due to accidentally omitted items (approximately 1%) was one strength of the study. Due to this small loss of data, it does not appear that participant attrition was correlated to treatment condition, demographic background, or time 1 ratings of the following: physical activity, health status, interpersonal relationships, self-efficacy, or depression symptoms.

The RCT experimental design was another strength of this study. The randomization of participants to intervention and control groups allows for better comparison across groups. Groups had comparable means for demographics and variables of interest at Time 1 as well as for loss of data and attrition, suggesting they were relatively evenly matched and outcomes at Time 2 are appropriate for comparison.

Limitations. As noted, the sample was predominantly female (90.9%), white (87.1%), and college-educated (75.9%). Although the racial and educational diversity noted in Table 1 reflects the University of Missouri's staff population as a whole, the ratio of women to men in the sample is not representative of the employee population. The overrepresentation of women in the study, however, is reflective of general

overrepresentation of women in support group interventions. The gender, racial, and educational background of the sample hinders the generalizability of the findings, and is a limitation of this study.

A number of limitations are present with regard to measures. First, a test item on the Interpersonal Relationships subscale of the HPLP-II was accidentally omitted at time 1, reducing the number of subscale items to eight. While the Cronbach's alpha for the interpersonal relationships subscale for the present study was .76, suggesting the results are acceptably reliable (Nunnally & Bernstein, 1994), it is possible that the omitted item may have impacted overall analyses. Another potential limitation of the HPLP-II Interpersonal Relationships subscale is the lack of items assessing specifically for interpersonal support for health behavior change; instead, the scale focuses on more generalized meaningful interpersonal connectedness.

The use of a generalized self-efficacy scale as opposed to health behavior self-efficacy scale is another important assessment limitation. As mentioned in the introduction, general self-efficacy and specific self-efficacy have salient differences. While Bandura acknowledged that past success or failure contributes to a general set of expectancies for mastery in new situations, he conceptualized self-efficacy primarily as a domain-specific belief (Bandura, 1977a; Sherer & Maddux, 1982). A graduate program, for example, might be full of broadly competent students with low self-efficacy in their abilities to spontaneously run a marathon (or, say, complete a dissertation). It might not, therefore, be reasonable to assume that someone with "broad and stable sense of personal competence" (Schwarzer & Jerusalem, 1995, p. 440) would naturally have higher than

average self-efficacy in a specific domain, such as their ability to adopt or improve health behavior.

The self-report measure for physical activity represents another important limitation. The Likert-type item to assess for physical activity is as follows: “Think about a typical week in the past 3 months. How many days per week did you do physical activity for 30 minutes or more? *Physical activity is any activity that increases your heart rate and makes you get out of breath some of the time. Physical activity can be done in sports, playing with friends, or walking to school.*” Participants are then requested to select a number, 0 through 7, to indicate the number of days they typically engage in physical activity.

Measuring physical activity in this way can be problematic as the item has high face validity combined with high social desirability to inflate responses. It is also problematic in its bluntness; the item attempts to assess for number of days when a target number of minutes as achieved, as compared with asking directly for total minutes exercised. Ideally, less subjective methods such as direct observation, pedometer, or accelerometer would be used to gather information regarding participant physical activity (Vanhees et al., 2005). These methods, however, are expensive, and the participant questionnaire lengthy (including additional items to fine tune the physical activity measure may represent a barrier to participants completing the survey). In addition, the physical activity item was adapted directly from the Stanford CDSMP protocol, and is thus congruent with previous research on self-management in a chronic disease population. While there may have been valid reasons to assess for physical activity in this

manner, this form of measurement is, nevertheless, a salient limitation to the present study.

Additionally, self-report measures come with their own set of limitations. Self-report measures were chosen for the purpose of this study as biometric measures of health (such as cholesterol and waist circumference) are typically lagging indicators of health behavior change. But unlike biometric measures, self-report measures are limited by the ability of the participant to accurately and faithfully report introspective awareness. Susceptibility to bias and impression management are especially salient for health report measures, as respondents tend to overreport physical activity due to social desirability (Shephard & Vuillemin, 2003). This tendency to overreport is not particularly concerning across intervention groups given the RCT experimental design, but should be considered as a limitation nonetheless.

It should also be noted that the standardized wellness control, *Eye on Health*, had one registered nurse who conducted follow-up phone calls. It is possible that provider effects may have impacted study results.

Finally, the overall health of this population is a limitation of the study. Participants reported low baseline levels of depression as a whole ($M = 8.26$, $SD = 4.83$, PHQ-9 cut-off for severe depression ≥ 27). They also endorsed relatively routine social engagement ($M = 3.09$, $SD = .47$, HPLP-II anchors at 1—*never*—and 4—*always*) as well as generally high sense of self-efficacy ($M = 3.95$, $SD = .42$, NGSE anchors at 1—*strongly disagree*—and 5—*strongly agree*). It is possible that the narrow range of high-functioning participants with regard to variables of interest limited the opportunity to appropriately assess for interaction effects. This restricted range may have obscured

potential interaction effects, particularly as it was predicted that variables of interest would moderate the relationship between treatment condition and health outcome for low-functioning participants.

Future Directions

Based upon the present study, future research on self-management interventions can take a number of directions. First, it is recommended that follow-up research explore for the impact of self-management interventions on health behavior self-efficacy as compared with general self-efficacy. This is true both for exploring changes in self-efficacy across groups as well as examining for the role of specific, health behavior self-efficacy as a moderator of the relationship between intervention and health outcome.

It may also be beneficial to assess for participant ratings of support with regard to health behavior change. That is to say, how much participants feel they were supported by facilitators, co-participants, or medical providers (depending upon treatment condition) to adopt different health behaviors. Additionally, it is recommended that future studies include multiple providers who can offer the standard wellness control in order to minimize—or at least assess for—provider effects.

Given the restricted range of participants—who generally endorsed high levels of functioning with regard to variables of interest—future research may assess for moderator effects with self-efficacy, depression, and interpersonal relationships in a chronic disease population.

Implications for Research and Practice

The findings suggest that participants benefit equally from the self-management workplace intervention as compared with a standard wellness control regardless of initial

perceived self-efficacy, social support, or depression. In many ways, this is good news for employers and insurance agencies alike, as the data suggest that employers and insurance providers do not need to offer flexibility or pay for two separate interventions to best match wellness intervention to employees. Employers are also not faced with the uncomfortable prospect of asking employees for mental health status, which might have been a concern if depression were shown to moderate the relationship between intervention and outcome. Furthermore, a group, lay-led intervention like *Act Healthy* is more cost-effective than an individual wellness intervention that must be administered by a licensed healthcare provider.

Researchers examining self-management interventions may choose to focus their attention on other potential moderators or health outcomes. For example, it would be interesting to assess for gender as a moderator of the relationship between intervention condition and health outcomes, as research has suggested women with low perceived social support are at an increased risk of mortality relative to men (Shumaker & Hill, 1991). Due to the large gender disparity in this sample, it was not possible to assess for gender as a moderator variable; future studies, however, may be able to probe for a relationship between gender, intervention condition, and outcomes.

Summary

Results of this study failed to support the predictions hypothesized in Chapter 1, as self-efficacy, interpersonal relationships, and depression failed to moderate the relationship between intervention condition and either physical activity or perceived health status. Previous research using this data supported the effectiveness of a lay-led, workplace self-management health intervention as comparable to that of a wellness

standard control (Schopp et al., 2015). This study provides empirical support that participants did not benefit differentially in either treatment condition based upon their self-rated beliefs about the following: general competency, meaningful social support, or depression severity. This suggests either treatment is equally effective for participants regardless of their self-ratings in these domains.

Appendix A: Extended Literature Review

In this section, a detailed examination of information relevant to the development of the current research project will be provided. First, a discussion of the human and financial impact of preventable disease will be presented, followed by an introduction to the field of health promotion. Then, a short description of the traditional medical model will be provided, followed by the development and theoretical underpinnings of self-management interventions. Finally, selected moderator and outcome variables will be described with regard to rationale for inclusion in the present study.

Impact of Preventable Disease

In the United States, the health and human costs of preventable disease are high. According to Mokdad et al. (2004, 2005), around half of deaths that occurred in 2000 were attributable to a small number of preventable diseases. Widespread chronic illnesses include cardiovascular disease, diabetes, metabolic syndrome, and obesity, and these diseases are both costly and are linked to controllable behaviors such as physical inactivity and poor diet (Centers for Disease Control and Prevention, 2013, 2014). Obesity-related conditions include stroke, certain kinds of cancer, heart disease, and type 2 diabetes, and in 2008, the cost of obesity alone in the United States was \$147 billion; medical expenses for people who are obese were estimated to be \$1,429 higher than for peers in a normal weight range (Centers for Disease Control and Prevention, 2014). It is estimated that two-thirds of adults in the United States are overweight or obese (Ogden et al., 2012). Health risks and health costs, however, are not isolated to people already diagnosed with chronic health conditions. Precursors to chronic health conditions are

more widespread than diagnosed chronic conditions, and approximately half of adult Americans face at least one risk factor for cardiovascular illness, including high low-density lipoprotein cholesterol, high blood pressure, and smoking (National Center for Chronic Disease Prevention and Health Promotion, 2013).

An increasingly unhealthy American population can be attributed at least in part to changes in lifestyle over time, both at home and at work. A large percentage of American adults do not engage in enough physical activity or eat enough fruits and vegetable (National Center for Chronic Disease Prevention and Health Promotion, 2013). In the last half century, the American workforce has become increasingly sedentary (Church et al., 2011), and many preventable disease are positively correlated with sitting time (Owen et al., 2010; Pronk et al., 2012). Costs associated with lifestyle risk factors increase alongside rates of illness, injuries, disabilities, absenteeism, and health care utilization (Anderson et al., 2009; Ostbye et al., 2007), and employers must shoulder part of the economic burden. For example, monthly medical costs for employees who met criteria for metabolic syndrome (\$626) are significantly higher than those of non-clinical employees (\$367) enrolled in the same employer-sponsored medical program (Fitch, Pyenson, & Iwasaki, 2007). Indirect financial costs (e.g., through lost employee productivity) are even greater than the direct costs of employer-sponsored health care (Loeppke et al., 2007). Employers defray costs through slashing compensation, stalling raises, or elimination insurance benefits altogether.

Health Promotions

Health promotions as a field developed in response to the changing health landscape; sometimes called the “epidemiological transition” (McLeroy & Crump, 1994,

p. 9), which began in the 1940's. According to McLeroy and Crump (1994), this shift consisted of a declining birthrate, increased life expectancy (and an increasing aging population), and increased healthcare expenditure. Prior to this shift, the government and medical establishment focused on the prevention of infectious diseases as the primary public health need (McLeroy & Crump, 1994). Researchers began to focus on the role of behavioral risk factors on human morbidity and mortality, and conceptualizations of human health and illness have transitioned from a traditional disease model to a health model (Bandura, 1998; McLeroy & Crump, 1994). Thus, health promotion as a field is interested in reducing rates of illness, injury, and mortality, and increasing awareness of health issues and health behaviors.

Within health promotion, three levels of disease prevention have been identified: primary, secondary, and tertiary. Primary prevention occurs when actions are taken to avoid or prevent injury or illness; secondary prevention occurs when early actions are taken to stop or reverse the course of an illness or injury; tertiary prevention describes actions taken to slow the progress of a chronic condition or contain damage associated with serious injury or illness (Sarafino, 2006). This is important to note as previously self-management health promotion interventions have been studied in tertiary populations, and there is limited research on self-management interventions in primary or secondary prevention.

This study also reflects an important shift in health promotion intervention delivery. Traditionally, health promotion interventions have been delivered in medical sites, such as hospitals or doctors' offices (Whitelaw et al., 2001). In the last quarter century, however, there has been a dramatic rise in the number of companies offering

health promotion programs for employees, and, by 2000, approximately 90% of organizations with at least 50 employees offered some form of health promotion program (Task Force on Community Preventive Services, 2010). Despite these increases, research suggests that the number of worksite health promotions programs decreased significantly after 1999, and, in 2004, between 63 and 64% of employers reported lack of resources and lack of employee interest as barriers to offering worksite health promotion programs (Linnan et al., 2008). Clearly, there is a need for cost-effective employee-focused worksite health interventions.

Health Behavior

In the field of health promotion, health behavior has been defined a number of ways. Kasl and Cobb (1966) define health behaviors as “Any activity under taken by a person believing himself to be healthy for the purpose of preventing disease or detecting it at an asymptomatic stage” (p. 246). Conner and Norman (2005) point out that while this is a solid foundational definition, Kasl and Cobb’s definition excludes self-management activities, behaviors intended to delay disease progression, or behaviors intended to improve general well-being for people who have identified illnesses. According to Gochman (1997), health behaviors are defined as “...overt behavioral patterns, actions, and habits that relate to health maintenance, to health restoration, and to health improvement” (p. 249). To simplify, Conner and Norman (2005) broadly define health behaviors as “any activity undertaken for the purpose of preventing or detecting disease or for improving health and well-being” (p. 2), which includes medical compliance, use of medical services, and any self-directed health behavior. The likelihood that someone will engage in a health behavior is influenced by a wide number

of factors, including individual demographics, social and emotional factors, access to medical care, personality, cognitions, and perceived symptoms (Adler & Matthews, 1994; Baum & Posluszny, 1999; Conner & Norman, 2005; Rosenstock, 1974; Taylor, 1991).

Standard Care

Healthcare in the early twentieth century was largely interested in diagnosing and treating acute illness (Lorig & Holman, 2003); in the medical model, doctors focused on patient compliance, curing diseases, and healing injuries (Bodenheimer et al., 2002).

Within an acute illness model, adherence to “doctor’s orders” makes sense: doctors were seen as experts who could identify problems and provide solutions (Bodenheimer et al., 2002). The traditional biomedical model “assumes that the language of chemistry and physics will ultimately suffice to explain biological phenomena” (Engel, 1977, p. 130), and does not account for psychological, cultural, or social factors that could contribute to disease or health.

Within a biopsychosocial framework (Engel, 1977), however, health-related behaviors can be seen as meaningful contributors to a person’s health status, and the relationship between health care provider and patient necessarily changes. Personal factors, context, and individual motivation must be addressed, and as such, there has been a shift doctor/patient interactions (or health promotions programs) that focus on intrinsic motivation and individual “buy-in.”

According to Lorig and Holman (2003), traditional health promotions models are directive and fail to take into account individual motivations. These approaches focus on convincing people to change health behaviors based upon epidemiological evidence. For example, rates of smoking are linked to incidents of cancer, and people have been

encouraged to reduce or quit smoking. Although many people know they would likely benefit from quitting smoking—and despite widespread messages about the dangers of nicotine—smoking behavior persists in some people. Researchers realized that decisions patients make with regard to their health are based upon their perception of the problem, which may or may not agree with their doctor’s perception of the problem or with at-large health promotions messages.

Self-Management

The self-management model for healthcare was created as a collaborative approach to helping patients with chronic conditions better manage their health (Lorig & Holman, 2003). The term *self-management* can be attributed to work in the area of pediatric asthma—patients were conceptualized as active participants as opposed to passive recipients of treatment (Creer et al., 1976). Self-management developed at least in part from the recognition that—regardless of health behaviors—everyone has a health management style (Bodenheimer et al., 2002; Lorig & Holman, 2003). Choosing a healthy, active lifestyle can be seen as one potential style; similarly, choosing not to adequately manage a chronic illness or risk factors for disease can be seen as another management style.

Bodenheimer et al. (2002) assert that the collaborative care model associated with self-management is different from traditional care in several important ways. In traditional care, doctors are experts who dole out health mandates to patients. Compliance is the primary goal and medical professionals identify and solve health problems for patients. The collaborative care model associated with self-management sees medical professionals as experts in disease and patients as experts in their lives. Patients work

with providers to identify problems and set goals based on what is important to them. This work is accomplished through the development of five core self-management skills: effective problem solving, informed decision making, appropriately utilizing resources, developing a relationship with the healthcare provider, and, ultimately, taking action (Lorig & Holman, 2003).

Theoretical Underpinnings

Self-management's theoretical underpinnings grew out of Albert Bandura's classic social cognitive theory (SCT) and his research on self-efficacy (1977a, 1977b). According to Bandura (1977a), *self-efficacy* is the belief someone holds about whether he or she can successfully execute that behavior to produce the desired outcome. Self-efficacy beliefs can develop out of direct or vicarious learning experiences, whereby reinforcement impacts behavior by creating the expectation that certain behaviors will produce favorable outcomes or avert negative consequences in the future. Efficacy expectations greatly impact a person's willingness to both initiate a given course of action as well as persist and cope when difficulties arise; the stronger someone's sense of self-efficacy is, the more likely he or she is to cope with challenges. Bandura (1977a) asserts that these self-efficacy beliefs are powerful and can influence behavior even more than actual positive or negative reinforcement.

Self-management's focus on patient-directed goals fits well with self-efficacy theory. Bandura (1977a) posits that behavioral control allows people to better manage aversive or frightening aspects of a situation and control how that situation is perceived. Stressful situations that can be controlled are seen as less threatening, and self-selected health goals are entirely within the control of the person selecting the goal. Tailoring

these goals until they are explicitly more likely to succeed (e.g., at least an eight out of ten on a scale of perceived likelihood of success) further increases participant self-efficacy.

Risk and Resiliency Factors

Risk and resiliency factors are a core component of health promotion research. Adler and Matthews (1994) describe a framework of contributing factors to disease whereby social environment and individual dispositions interact and influence health-related behaviors, and all three influence psychophysiological mechanisms that ultimately determine the presence of illness.

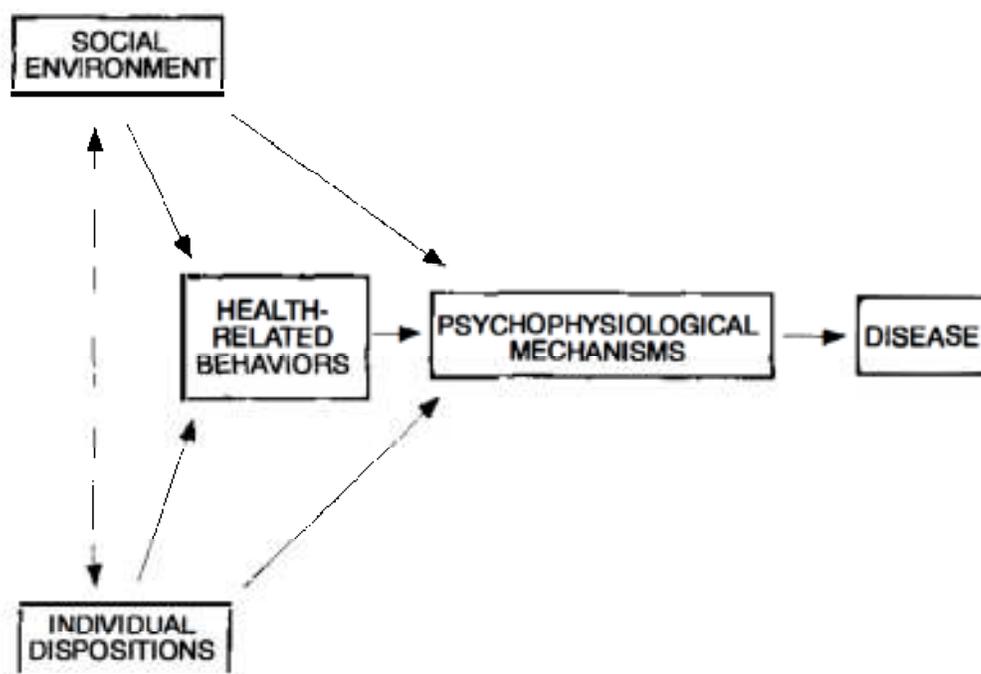


Figure 3 Psychosocial predictors of disease. Reprinted from "Health psychology: Why do some people get sick and some stay well?" by Adler, N., and Matthew, K., 1994, *Annual Review of Psychology*, 45, p. 231

They found that social environmental factors such as stress and social connections contribute to outcomes for conditions such as cardiovascular disease, infectious disease, and pregnancy, and ultimately contribute to morbidity and mortality. Adler and Matthews

(1994) also found that individual factors, such as depression, distress, exhaustion, hostility, optimism, explanatory style, and self-esteem also have an impact on disease status and progression.

The literature is thick with support for risk and resiliency factors associated with health behaviors and health outcomes, including social cohesion and support, substance abuse, smoking status, diet, socioeconomic status, obesity, physical activity, age, personality, spirituality and religiosity, discrimination experiences, and sexual orientation (Brondolo et al., 2012; Greenwald & Sondik, 1986; Luepker et al., 1994; Masters & Spielmans, 2007; Meyer, 2012; Park, 2012; Peterson & Hughey, 2004; Ruiz et al., 2012; Smith et al., 2012; U.S. Department of Health and Human Services, 2000; Werner, 1992; Wills & Ainette, 2012; Wing & Phelan, 2012). Factors associated with success in health promotions interventions include social factors such as gender and level of education, behavioral factors such as past exercise behavior, and social cognitive factors such as self-efficacy, depression, and perceived health status (Bowen et al., 2009; Glasgow et al., 2001; Haug et al., 2010; Jerant et al., 2005; Luszczynska et al., 2011; Milne et al., 2000; Norman et al., 2000). In the next sections, potential moderating variables of self-efficacy, depression, and interpersonal relationships will be introduced and described in greater detail with regard to relevant health promotion literature.

Self-Efficacy

Self-efficacy is considered a key variable in accounting for variance in any intentional behavior, and fittingly it has been identified as a strikingly important predictor of health behavior (Conner & Norman, 2005; Fishbein et al., 2001). Self-efficacy beliefs are influential when people adopt new health behaviors, discard unhealthy habits, or

maintain positive health change (Luszczynsky & Schwarzer, 2005), and self-efficacy has been researched extensively as a predictor variable in health promotion interventions; generally speaking, people with high self-efficacy expectancies tend to experience better health outcomes and are more likely to meet their health goals than people with low self-efficacy expectancies (Clark & Dodge, 1999; Dishman et al., 2004; Linde, Rothman, Baldwin, & Jeffery, 2006; Luszczynsky & Schwarzer, 2005; Marks, Allegrante, & Lorig, 2005).

It is difficult to overstate the impact of perceived self-efficacy on health behaviors and health outcomes. Low self-efficacy has been identified as a psychosocial barrier to health self-management (Glasgow et al., 2001), and early research identified self-efficacy as a mediator in the relationship between self-management behaviors and health outcomes (Lorig et al., 1989). Early in the development of chronic disease self-management programs, the importance of self-efficacy was recognized, and the intervention was intentionally altered to further increase participant perceived self-efficacy (F. Jones, 2006). As a result, research consistently shows chronic disease self-management programs significantly increase participant rates of self-efficacy (Lorig & Holman, 2003; Lorig et al., 2006; Lorig et al., 2001).

Depression

Diagnostically, major depressive disorder is characterized by episodes at least 2 weeks in length during which time there are clear changes in affect and cognition. Criteria include depressed mood, anhedonia, changes in appetite or sleep, psychomotor retardation or agitation, fatigue, feelings of worthlessness, difficulty concentrating, and recurrent thoughts of death (American Psychiatric Association, 2013). Depression has a

significant impact on motivation, behavior, and well-being, and it is understood as an important component of psychosocial functioning.

Depression has a high rate of comorbid occurrence in chronically ill populations, and has been correlated with numerous negative health outcomes, such as poor treatment outcomes and cardiovascular disease (Gaynes, Burns, Tweed, & Erickson, 2002; Suls & Bunde, 2005). Research suggests that depression is associated with decreased quality of life and can impact health outcomes as seriously as three chronic health conditions: diabetes, arthritis, and hypertension (Gaynes et al., 2002). The economic impact of depression is also high. Treatment-resistant depression has been associated with increased use of both general and depression-related medical services, such as hospital visits and pharmaceuticals (Crown et al., 2002). Depression is also a risk-factor for medical non-compliance, which can ultimately increase rates of illness and health care costs (DiMatteo, Lepper, & Croghan, 2000). Like low self-efficacy, high levels of depression have been identified as a psychosocial barrier to effective health self-management (Glasgow et al., 2001).

Prior research suggests an inverse relationship between self-efficacy and depression (Jerant et al., 2008; Maciejewski et al., 2000), and given that self-efficacy tends to increase in self-management interventions, it would be expected that improvements in self-efficacy would be associated with reductions in rates of depression as part of a self-management intervention. This has been supported in the literature, and in an arthritis self-management study improvements in self-efficacy were associated with reductions in depression, pain intensity, and disability (Lorig et al., 1989). The mediating effect of increased self-efficacy on depression was powerful, and effects persisted over a

4 year follow-up period (F. Jones, 2006). High rates of depression have also been found to moderate the effect of a chronic disease self-management intervention on self-efficacy, whereby participants with high levels of depression experience greater gains in self-efficacy scores than participants with low levels of depression (Jerant et al., 2008).

Interpersonal Relationships

Strong interpersonal relationships and social support have been well-supported as resiliency factors for mental and physical health outcomes: social supported is correlated with reduced risk of physical illness and increased psychological well-being (Wills, 1985; Wills & Ainette, 2012). Access to supportive social networks has beneficial effects on chronic illness outcomes, morbidity, and mortality (Berkman & Glass, 2000; R. M. Kaplan & Toshima, 1990). In the HPLP-II, the construct of interpersonal relations has been defined as using communication to achieve closeness and intimacy within meaningful relationships with other people (Walker & Hill-Polrecky, 1996).

This definition of interpersonal relations captures information under a broader umbrella of social relationships. According to (Cohen, 2004), there are three main components of social relationships: social support, or the resources available in one's social network to help someone cope with stress; social integration, or participation in a wide range of relationships; and negative interaction, or stressful relational interactions. Each of these components is associated with health outcomes, and it is believed that social support and integration buffer experiences of stress and can reduce susceptibility to illnesses, such as the common cold (Cohen, 2004; Cohen, Doyle, Skoner, Rabin, & Gwaltney Jr., 1997).

In a review of the literature examining the relationship between interpersonal support and chronic illness self-management, social and relational support was found to have a positive relationship with effective chronic illness self-management (Gallant, 2003). According to Gallant (2003), chronic illness self-management occurs in a social context with both formal members (health care providers) and informal members (friends, relatives, coworkers, and acquaintances). High levels of social support have been associated with increased disease self-management, and lack of family support is an important perceived barrier to chronic disease self-management (Glasgow et al., 2001; Jerant et al., 2005).

Physical Activity

The health benefits of physical activity are many. Along with nutrition, it is often one of the first things people think of when they think about a healthy lifestyle. Benefits of physical activity include weight control, reduction of risk of illnesses like cardiovascular disease, type 2 diabetes, cancer, and metabolic syndrome, improvements to mood and psychological well-being, and increased life expectancy (National Center for Chronic Disease Prevention and Health Promotion, 2011). In a review of the literature by Bauman et al. (2002) the following variables were found to have a consistent positive correlation with physical activity: self-efficacy, social support, perceived health status, self-motivation, stage of change, diet, education, male gender, genetic factors, socioeconomic status, and exercise enjoyment. Mood disturbance was found to have a consistent negative relationship. Bauman and colleagues (2002) suggest these strong and consistent correlates merit future study as potential mediators and moderators of the

relationship between intervention and physical activity in order to improve theories of health behavior.

Perceived Health Status

Perceived health status is a construct associated with people's perception of their health (OECD, 2011). This includes perceptions about physical, social, and role functioning, as well as mental health and general health (I. B. Wilson & Cleary, 1995). In the past 25 years, perceived health status has developed as an important indicator of overall health and health needs (Hunt et al., 1980). Perceived health status has also been strongly correlated with cardiovascular disease, myocardial infarction, and mortality from all causes (G. A. Kaplan et al., 1996). Prior research suggests that physical activity, psychological well-being, frequency of psychosomatic symptoms, and acute illness episodes significantly contribute to perceived health status (Piko, 2000). Research on self-management interventions supports health behavior self-efficacy as a predictor of perceived health status (F. Jones & Riazi, 2011; Salbach et al., 2006). It is a commonly used outcome variable in health behavior research.

Appendix B: Informed Consent

ACT HEALTHY

Below you will find additional information about the *Act Healthy* research study. This information is organized into a written consent form. If you decide to participate in *Act Healthy*, you will be asked to sign this form. This consent form has been approved by the Institutional Review Board at the University of MO. The purpose of the Health Sciences Institutional Review Board is to protect persons participating in research.

CONSENT FORM TO PARTICIPATE IN A RESEARCH STUDY

INVESTIGATOR'S NAME: DR. LAURA SCHOPP AND MARY CLARK, RN
PROJECT # 1207152

STUDY TITLE: *ACT HEALTHY*

INTRODUCTION

This is a research study. Research studies only include people who choose to participate. As a study participant you have the right to know about the procedures that will be used in this research study so that you can make the decision whether or not to participate. The information presented here is simply an effort to make you better informed so that you may give or withhold your consent to participate in this research study.

Please take your time to make your decision and discuss it with your family and friends.

This study is sponsored by the *Healthy for Life: T.E. Atkins Wellness Program* for employees who want to improve their health. In order to participate in this study, it will be necessary to give your written consent.

WHY IS THIS STUDY BEING DONE?

The purpose of this study is to find out if participation in six 50-minute *Act Healthy* classes results in improved health for people in a work setting. MU employees who participate in the classes will be compared with MU employees who do not participate in the classes. These classes are based on a model called "self-management" that has been used among people with arthritis and other chronic illnesses. *Healthy for Life UM Wellness Program* has adapted this "self-management" model for use in a workplace setting for all employees who are interested in improving their health. Previous research showed that people who took the classes (compared to people who didn't take the classes) were more likely to have:

- more confidence in their ability to start and keep doing new healthy behaviors,
- more energy,
- less stress and depression,
- lower blood pressure, and
- lower cholesterol levels.

HOW MANY PEOPLE WILL TAKE PART IN THE STUDY?

About 240 people will take part in this study at the University of Missouri, Columbia campus. You will be “randomized” into one of the study groups described below. Randomization means that you are put into a group by chance. It is like flipping a coin. Neither you nor the research staff will choose what group you will be in. You will have an equal chance of being placed in any group.

Treatment Group Activities

If you are in the treatment group, you will participate in an orientation meeting and the series of six 50-minute *Act Healthy* classes held on campus. Classes are led by a trained leader who is also an MU employee. In the classes, you will participate with your group of approximately 6 – 15 members to identify healthy behaviors, select health-related goals you want to achieve and learn to make and carry out weekly Action Plans. There will be group discussions and information provided by your leader and group members.

Control Group Activities

If you are not in the treatment group, you are in the control group. If you are in the control group, you will agree to not participate in the *Act Healthy* classes for 24 months. After that time, if the classes have been shown to improve health, these classes will be offered to you at no cost. People in the control group will also receive health educational materials in the mail and may receive one or more follow up phone calls.

Both groups:

All people who desire to participate in the study will be asked to attend an orientation meeting (before the 6 *Act Healthy* classes begin) where they will sign a written consent form to participate in this study and then complete a written survey. A separate appointment will be scheduled with you for the health screening described below.

You will be asked to provide the following information and a health screening (as described below), at the beginning of the project, and at 3 and 12 months after the project starts:

- Complete written surveys that will ask you what health behaviors you do now and how often, how confident you are that you can perform a variety of healthy behaviors, and basic information about yourself (age, gender, ethnicity, income, educational level, etc.). Examples of health behaviors include questions about physical activity, nutrition, tobacco and alcohol usage, and stress.

- Provide a health screening (as described below), at the *Healthy for Life* offices located at 205 Heinkel Building at 201 South 7th Street:
 - have your blood pressure taken
 - have your waist circumference measured
 - have a finger stick done in order to measure your triglycerides (type of fat), high density lipoproteins (type of cholesterol), and fasting blood sugar.
 - refrain from eating for 9-12 hours before the lab work is done in order to obtain a fasting blood sugar level.

- Allow information on your use of health care services to be obtained from the University claims system through your employee identification number. This information includes the number of visits and health care costs for the following services: pharmacy services, outpatient visits, emergency room visits, and hospital admission. Diagnosis information will also be collected from the claims system. This information will be collected at the time you begin the study and 12 and 24 months later.

- Allow the number and date of absentee days during the 2 year project period to be obtained from Human Resources

These questionnaires and the health screening will require about 45 minutes to complete each time.

HOW LONG WILL I BE IN THE STUDY?

You will be in the study for 24 months. You can stop participating at any time. Your decision to withdraw from the study will not affect in any way your medical care and/or benefits.

WHAT ARE THE RISKS OF THE STUDY?

While on the study, you are at risk for possibly being shy or embarrassed to talk in the group about your health-related goals or Action Plans. Your finger may be sore after having your finger stick done.

ARE THERE BENEFITS TO TAKING PART IN THE STUDY?

If you agree to take part in this study, you may learn skills to help you be successful in carrying out plans and achieving goals and your health may improve. You may also expect to benefit from taking part in this research by contributing to medical knowledge.

WHAT OTHER OPTIONS ARE THERE?

Instead of taking *Act Healthy* classes you could also pursue health goals and change behaviors on your own or in other classes.

WHAT ABOUT CONFIDENTIALITY?

If you choose to participate, you will be assigned a study number and all of your questionnaires will carry only that number, not your name. A list with names of all participants in the study and the study number assigned to each one will be kept separate from the questionnaires in a separate secure location for access only by the research staff. Information contained in your records may not be given to anyone unaffiliated with the study in a form that could identify you without your written consent, except as required by law.

It is possible that your research record, including sensitive information and/or identifying information, may be inspected by the federal or state government agencies, or the institutional review board, in the course of carrying out their duties. If your record is inspected or copied any of these agencies, the University of Missouri will use reasonable efforts to protect your privacy and the confidentiality of your medical information. The results of this study may be published in a medical book or journal or used for teaching purposes. However, your name or other identifying information will not be used in any publication or teaching materials without your specific permission.

WHAT ARE THE COSTS?

There is no cost to you for participating in this study.

WILL I BE PAID FOR PARTICIPATING IN THE STUDY?

You will be paid the following amounts for completing the surveys and the health screenings.

- \$10 gift card after the 1st data collection at the beginning of the project
- \$10 gift card after the 2nd data collection at 3 months after the project begins
- \$20 gift card after the 3rd data collection at 12 months after the project begins

WHAT ARE MY RIGHTS AS A PARTICIPANT?

Participation in this study is voluntary. You do not have to participate in this study. Your present or future care will not be affected should you choose not to participate. If you decide to participate, you can change your mind and drop out of the study at any time without affecting your participation in other programs at the *Healthy for Life: T.E. Atkins Wellness Program*. In addition, the investigator of this study may decide to end your participation in this study at any time after she has explained the reasons for doing so and has helped arrange for your continued care by your own doctor, if needed.

WHOM DO I CALL IF I HAVE QUESTIONS OR PROBLEMS?

If you have any questions regarding your rights as a participant in this research and/or concerns about the study, or if you feel under any pressure to enroll or to continue to

participate in this study, you may contact the University of Missouri Health Sciences Institutional Review Board (which is a group of people who review the research studies to protect participants' rights) at (573) 882-3181.

You may ask more questions about the study at any time. For questions about the study or a research related injury, contact the Project Coordinator, Mary Clark, RN, at 573-884-1439 or the Project Director, Dr. Laura Schopp, at 573-884-1312. A copy of this consent form will be given to you to keep.

SIGNATURE

I confirm that the purpose of the research, the study procedures, the possible risks and discomforts as well as potential benefits that I may experience have been explained to me. Alternatives to my participation in the study also have been discussed. I have read this consent form and my questions have been answered. My signature below indicates my willingness to participate in this study.

Subject/Patient

Date

SIGNATURE OF STUDY REPRESENTATIVE

I have explained the purpose of the research, the study procedures, identifying those that are investigational, the possible risks and discomforts as well as potential benefits and have answered questions regarding the study to the best of my ability.

Study Representative

Date

Appendix C: Measures

Thank you for participating in the Act Healthy project. This survey includes basic questions about you, followed by questions about your health and your health behaviors. Please take your time filling out the survey and make sure to answer each question.

Demographic Survey

1. Gender: female male

2. If female, are you pregnant? Yes No Don't know

3. Which ethnic group do you primarily identify with? (check one)

<input type="checkbox"/> White, non-Hispanic	<input type="checkbox"/> African American	<input type="checkbox"/> Latino / Latina	<input type="checkbox"/> Asian
<input type="checkbox"/> American Indian	<input type="checkbox"/> Alaska Native	<input type="checkbox"/> Other	

4. How long have you been employed in your current position?

<input type="checkbox"/> less than one year	or	_____ years
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5. How many hours are you employed in a typical week including MU and any other employers? (check one)

<input type="checkbox"/> over 40 hours	<input type="checkbox"/> 30-40 hours	<input type="checkbox"/> 20-29 hours	<input type="checkbox"/> less than 20 hours
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6. Are you enrolled in a UM Medical Plan administered by Coventry?

<input type="checkbox"/> yes	<input type="checkbox"/> no
------------------------------	-----------------------------

Note: If you answered "no" to question #6, skip to question #8.

7. If you are enrolled in UM Medical Plan administered by Coventry, are you a primary subscriber or a dependent (insured through a family member)?

<input type="checkbox"/> primary	<input type="checkbox"/> dependent
----------------------------------	------------------------------------

8. Think about a typical week in the past 3 months. How many days per week did you do physical activity for 30 minutes or more? *Physical activity is any activity that increases your heart rate and makes you get out of breath some of the time. Physical activity can be done in sports, playing with friends, or walking to school. (check one)*

0 1 2 3 4 5 6 7

9. In the past 3 months, have you had enough energy to do what you want during the day? (check one)

Always Usually Sometimes Rarely Never

10. In the past 3 months, has your health interfered with your work life? (check one)

Always Usually Sometimes Rarely Never

11. In the past 3 months, has your health interfered with your personal life? (check one)

Always Usually Sometimes Rarely Never

12. My employer cares about my health.

Strongly Agree Agree Disagree Strongly Disagree

13. Have you participated in a structured program that involves lifestyle change during the past 3 months (i.e. Weight Watchers, Boot Camp, etc.)?

Yes No

14. In general, would you say your health has been in the last 3 months? (check one)

Excellent Very good Good Fair Poor

15. Did you have any difficulties with your daily activities because of your health in the last 3 months? (check one)

Always Usually Sometimes Rarely Never

16. Do you currently use tobacco products? (check one)

Yes No I used to smoke/use smokeless tobacco

17. If you use tobacco products, how many cigarettes did you smoke in a typical day during the past 3 months?

_____ (number of cigarettes)

18. If you used to smoke, how long has it been since you last used tobacco?

_____ (number of years) _____ (number of months) _____ (number of days)

20. Please choose the item that best describes your level of activity at work over the past 3 months.

(check one)

- physically very light (the majority of the work day in a seated position)
- physically light (half of the work day in a seated position)
- physically intense (less than half of the work day in a seated position)
- physically strenuous (active the majority of the work day)

21. Have you been diagnosed with any of the following medical conditions?

High blood pressure	<input type="checkbox"/> Yes <input type="checkbox"/> No	Heart disease	<input type="checkbox"/> Yes <input type="checkbox"/> No
High cholesterol	<input type="checkbox"/> Yes <input type="checkbox"/> No	Asthma	<input type="checkbox"/> Yes <input type="checkbox"/> No
Heart attack	<input type="checkbox"/> Yes <input type="checkbox"/> No	Stroke	<input type="checkbox"/> Yes <input type="checkbox"/> No
Type 1 diabetes (usually diagnosed in childhood)	<input type="checkbox"/> Yes <input type="checkbox"/> No	Type 2 diabetes	<input type="checkbox"/> Yes <input type="checkbox"/> No
High blood sugar	<input type="checkbox"/> Yes <input type="checkbox"/> No	Arthritis	<input type="checkbox"/> Yes <input type="checkbox"/> No
Depression	<input type="checkbox"/> Yes <input type="checkbox"/> No	Anxiety	<input type="checkbox"/> Yes <input type="checkbox"/> No

22. Have you been diagnosed with any other medical condition? Yes No
If Yes, please record your medical conditions:

23. How many years of education have you had? _____ years (12 years = high school diploma or GED)

24. What is the highest grade or year of school you have completed? (check one)

- 8th grade or less 9th-12th grade, no diploma High School graduate or GED
- Completed a vocational, trade or business school program Some college credit but no degree
- Associate degree (AA, AS) Bachelor's degree (BA, BS, AB)
- Master's degree (MA, MS, MSW, MBA) Doctorate (PhD, EdD) or professional degree
(MD, DDS, DVM, JD)

25. What was your total combined income of your household in the last calendar year, including income from all sources such as wages, salaries, unemployment payments, public assistance, Social Security or retirement benefits, help from relatives and so forth? Please use the total combine household income before taxes.

- less than \$10,000 \$10,000-\$39,999 \$40,000-\$69,999
- \$70,000-\$99,999 more than \$100,000

Adapted *Healthy Lifestyle Profile II (HPLP-II)*

The next set of questions contains statements about your way of life or personal habits. Please respond to each question as accurately as possible, and try not to skip any question. For each question, indicate how often you engage in each behavior. Please circle the number that best describes your response.

<i>How often do I do this behavior?</i>	Never		Routinely (all the time)	
26. Discuss my problems and concerns with people close to me.	1	2	3	4
27. Choose a diet recommended by my health care provider.	1	2	3	4
28. Report unusual signs or symptoms to physician or other health professional.	1	2	3	4
29. Follow a planned exercise program.	1	2	3	4
30. Get enough sleep.	1	2	3	4
31. Feel I am growing and changing in positive ways.	1	2	3	4
32. Praise other people easily for their achievements.	1	2	3	4
33. Limit use of sugars and food containing sugar (sweets).	1	2	3	4
34. Read or watch TV programs about improving health.	1	2	3	4
35. Exercise vigorously for 20 or more minutes at least three times a week (such as brisk walking, bicycling, aerobic dancing, using a stair climber).	1	2	3	4
36. Take some time for relaxation each day.	1	2	3	4
37. Believe that my life has purpose.	1	2	3	4
38. Maintain meaningful and fulfilling relationships with others.	1	2	3	4
39. Question health professionals in order to understand their instructions.	1	2	3	4
40. Take part in light to moderate physical activity (such as sustained walking 30-40 minutes 5 or more times a week).	1	2	3	4
41. Accept those things in my life which I cannot change.	1	2	3	4
42. Look forward to the future.	1	2	3	4
43. Spend time with close friends.	1	2	3	4
44. Eat 4-5 servings of fruits each day.	1	2	3	4
45. Get a second opinion when I question my health care provider's advice.	1	2	3	4
46. Take part in leisure-time (recreational) physical activities (such as swimming, dancing, bicycling).	1	2	3	4
47. Concentrate on pleasant thoughts at bedtime.	1	2	3	4
48. Feel content and at peace with myself.	1	2	3	4
49. Eat 4-5 servings of vegetables each day.	1	2	3	4
50. Discuss my health concerns with health professionals.	1	2	3	4
51. Do stretching exercises at least 3 times per week.	1	2	3	4
52. Use specific methods to control my stress.	1	2	3	4

53. Work toward long-term goals in my life.	1	2	3	4
54. Touch and am touched by people I care about.	1	2	3	4
55. Eat 2-3 servings of milk, yogurt or cheese each day or as directed by my health care provider.	1	2	3	4
56. Inspect my body at least monthly for physical changes/danger signs.	1	2	3	4
57. Get exercise during usual daily activities (such as walking during lunch, using stairs, parking car away from destination and walking).	1	2	3	4
58. Balance time between work and play.	1	2	3	4
59. Find each day interesting and challenging.	1	2	3	4
60. Find ways to meet my needs for intimacy.	1	2	3	4
61. Eat 6 or less servings of meat, poultry, fish, dried beans, eggs, or nuts each day or as directed by my health care provider.	1	2	3	4
62. Ask for information from health professionals about how to take good care of myself.	1	2	3	4
63. Check my pulse rate when exercising.	1	2	3	4
64. Practice relaxation or meditation for 15-20 minutes daily.	1	2	3	4
65. Am aware of what is important to me in life.	1	2	3	4
66. Get support from a network of caring people.	1	2	3	4
67. Read labels to identify nutrients, fats, and sodium content in packaged food.	1	2	3	4
68. Attend educational programs on personal health care.	1	2	3	4
69. Reach my target heart rate when exercising.	1	2	3	4
70. Pace myself to prevent tiredness.	1	2	3	4
71. Feel connected with some force greater than myself.	1	2	3	4
72. Settle conflicts with others through discussion and compromise.	1	2	3	4
73. Eat breakfast.	1	2	3	4
74. Seek guidance or counseling when necessary.	1	2	3	4
75. Expose myself to new experiences and challenges.	1	2	3	4

*Serving recommendations for a 2000 calorie diet/day from the *Dietary Guidelines for Americans, 2010* as issued by the Department of Agriculture (USDA) and the Department of Health and Human Services (HHS).

The General Self-Efficacy Scale (NGSE)

The next set of questions include statements about the amount of confidence you have in completing activities that are important to you.

76. I will be able to achieve most of the goals that I have set for myself.

strongly disagree disagree neutral agree strongly agree

77. When facing difficult tasks, I am certain that I will accomplish them.

strongly disagree disagree neutral agree strongly agree

78. In general, I think that I can obtain outcomes that are important to me.

strongly disagree disagree neutral agree strongly agree

79. I believe I can succeed at most any endeavor to which I set my mind.

strongly disagree disagree neutral agree strongly agree

80. I will be able to successfully overcome many challenges.

strongly disagree disagree neutral agree strongly agree

81. I am confident that I can perform effectively on many different tasks.

strongly disagree disagree neutral agree strongly agree

82. Compared to other people, I can do most tasks very well.

strongly disagree disagree neutral agree strongly agree

83. Even when things are tough, I can perform quite well.

strongly disagree disagree neutral agree strongly agree

The Patient Health Questionnaire Depression Scale (PHQ-9)

The next set of questions includes statement about your emotional health.

Over the last 2 weeks, how often have you been bothered by any of the following problems?

How often during the past 2 weeks were you bothered by.....

84. Little interest or pleasure in doing things

Not at all 0 1 2 3
Nearly every day

85. Feeling down, depressed, or hopeless

Not at all 0 1 2 3
Nearly every day

86. Trouble falling or staying asleep, or sleeping too much

Not at all 0 1 2 3
Nearly every day

87. Feeling tired or having little energy

Not at all 0 1 2 3
Nearly every day

88. Poor appetite or overeating

Not at all 0 1 2 3
Nearly every day

89. Feeling bad about yourself, or that you are a failure, or have let yourself or your family down

Not at all 0 1 2 3
Nearly every day

90. Trouble concentrating on things, such as reading the newspaper or watching television

Not at all 0 1 2 3
Nearly every day

91. Moving or speaking so slowly that other people could have noticed. Or the opposite –being so fidgety or restless that you have been moving around a lot more than usual.

Not at all

0

1

2

Nearly every day

3

92. Thoughts that you would be better off dead, or of hurting yourself in some way

Not at all

0

1

2

Nearly every day

3

Appendix D: Participant Letter and Educational Materials

Letter

July 24, 2013

Dear *Act Healthy* Participant,

Thank you for your participation in *Act Healthy*! This research project is sponsored by the *Healthy for Life: T.E. Atkins UM Wellness Program*. The purpose of the study is to find out if participation in six 50-minute *Act Healthy* classes results in improved health for people in a work setting.

Some of the most common health risk concerns reported by MU employees who participated in the 2012 *Personal Health Assessment* focused on body weight, physical activity and blood pressure. We are providing all study participants with written educational materials on nutrition, physical activity, lowering cholesterol and blood pressure, and preventing diabetes. We realize that you may not have these conditions, but we hope you may find these materials informative. Please read these materials at your convenience. You will receive a follow up phone call from the *Act Healthy* Project Coordinator, Mary Clark, RN, within the next few weeks just to see if you have any questions about the materials. You can also contact Mary at 573-884-1439 or clarkmj@umsystem.edu with questions.

We'll be contacting you in August/September to schedule a date for the next health screening and to complete your 2nd written survey. Thanks again for being a part of *Act Healthy*.

Sincerely,

A handwritten signature in cursive script that reads "Laura Schopp".

Laura Schopp, PhD
Director, *Healthy for Life*
Professor, University of Missouri, Department of Health Psychology

Educational Materials

Participants in both the self-management treatment condition and standard wellness control received educational materials on eating healthy, physical activity, diabetes prevention, stress management, the benefits of maintaining a healthy weight, and the risks associated with high cholesterol and high blood pressure.

Appendix D: Act *Healthy* Leader Manual

ACT HEALTHY

To get what you want!

*A 6-week behavior support class
that teaches people to self-manage their health,
giving them the knowledge, skills,
experiences, and confidence
to choose and live a healthier life.*

LEADER MANUAL

9/16/2013



Acknowledgements

We would like to extend our gratitude to the developer of the Chronic Disease Self-Management Program, Kate Lorig, R.N., Dr.PH., and her colleagues at the Stanford Patient Education Research Center.

Dr. Lorig's insight, which generated the Self-Management philosophy and intervention model, and her commitment to maintaining the integrity of the Self-Management model throughout its varied applications, have made the *Act Healthy* program possible.



Act Healthy

Program Guide

Overview of Self-Management	p. 4
Orientation Week	p. 5
Week 1	p. 8
Weeks 2 - 4	p. 19
Week 5	p. 28
Week 6	p. 32
Action Plan	

Overview of Self-Management

EVERYBODY WANTS TO ACT HEALTHY. However, not all of us do. Of those of us who do manage to act healthy, we may find that we are not be able to do so in all areas of our lives. Maybe we get the amount of sleep each night that feels sufficient for ourselves, but we cannot seem to reduce our coffee intake mid-morning at the office. Some of us might have figured out how to act healthy in a variety of areas in our lives, yet we struggle to maintain healthy behaviors at certain times. For instance, a nightly walk that is truly enjoyed might fall by the wayside when we spend a few weeks working late to meet an upcoming due date. Or the presence of sugary snacks becomes a temptation when holiday season arrives and a tableful of treats sits, tempting us, next door in the break room.

If we know the importance of caring for our health, and if we value being healthy, what keeps us from managing our health more effectively? As the authors of *Living Healthy* observed, “managing our [health,] like managing a family or a business, is a complex undertaking. There are many twists, turns, and mid-course corrections” (p. 7). By learning self-management skills, we can improve our ability to live the healthy life that we choose by cultivating these self-management skills:

- SETTING HEALTH-RELATED GOALS
- IDENTIFYING STEPS TO TAKE TO REACH THE GOAL
- MAKING ACTION PLANS
- CARRYING OUT ACTION PLANS
- EVALUATING SUCCESS AND REVISING PLANS IF NEEDED
- PROBLEM-SOLVING TO OVERCOME BARRIERS

This manual will guide you as you lead your co-workers down the path of becoming effective self managers of their health.

Thank you for volunteering. You are vital to Act Healthy’s success.

Orientation

(This meeting will be conducted by HFL staff.)

Purpose

The purpose of the orientation meeting is to provide group members with an overview of the history of self-management, and to gather written consent for participation in the research project. Research participants will also complete a written questionnaire.

Teaching Objectives

1. Describe the history of the self-management approach to health.
2. Explain the study design and requirements of participation.
3. Gather completed consent forms and pre-program questionnaires.

Materials

- Pens
- Roster
- Name tags
- Research materials (pre-program questionnaires with ID#s, with pens)

As people arrive...

1. Welcome each person to the class and introduce yourself.
2. Offer a nametag and check each person's name off the roster.

Introductions of group leaders and members.

Introduce yourselves, giving your names and departments. *Act Healthy* is a research study sponsored by *Healthy for Life*, the MU wellness program. The purpose of this project is to determine if attending 6 *Act Healthy* classes results in improved health.

☑ **Explain and conduct the research component of the class. (20-25 min.)**

Remind the class that *Act Healthy* is an IRB-approved research project that is for MU employees. Explain that everyone who enrolls in the study will be placed in one of two groups. People in the treatment group will attend 6 *Act Healthy* classes, receive written information in the mail and one or more follow up phone calls. People in the control group will not attend the 6 *Act Healthy* classes, will receive written health information in the mail and one or more follow up phone calls. MU employees who participate in the classes will be compared with MU employees who do not participate in the classes. Both groups will complete written surveys, have a fingerstick done to measure fasting blood sugar and cholesterol levels, have their blood pressure taken and their waist circumference measured. Everyone who enrolls in the study today will be notified of which group they are in by e-mail this afternoon with a link to register for the *Act Healthy* classes. The 6 classes will begin the week of October 7th.

These classes are based on a model called “self-management” that has been used among people with arthritis and other chronic illnesses. Healthy for Life UM Wellness Program has adapted this “self-management” model for use in a workplace setting for all employees who are interested in improving their health. Key components of the classes are identifying health related goals, creating an Action Plan and problem solving with others to accomplish your goals. Previous research showed that people who took the classes (compared to people who didn’t take the classes) were more likely to have:

- more confidence in their ability to start and keep doing new healthy behaviors,
- more energy,
- less stress and depression,
- lower blood pressure, and
- lower cholesterol and fasting blood sugar levels.

Say: As a research study being conducted in the workplace, we are very mindful of your confidentiality. The questionnaires and other measurements that you complete will be compiled into group results and

published, but your answers are confidential and your names will not be used.

Pull out a sample questionnaire and show them the ID number used on each of the forms. Explain that this ID number is used to connect their responses today with their future responses, which will help us determine what people are accomplishing as a result of the class and to do so anonymously.

Pass out the consent and HIPAA forms.

Ask: Are there any questions?

Answer questions as needed, and then ask group members to complete the consent form if they would like to enroll. People who do not want to enroll can leave the meeting. Then hand out the survey.

As people finish filling out the questionnaires, collect them, make sure that all questionnaires are complete and all documents have been signed.

This completes the Orientation Class.

Week One

Purpose

The purpose of Week One is to establish a collaborative relationship among group members as well as to introduce the primary tools of self-management, including goal setting, identifying healthy actions and making action plans.

Session Objectives

1. Develop a collaborative relationship among group members.
2. Identify the core concepts of the self-management approach.
3. Recognize and apply the key tools of self-management: identifying goals, making an Action Plan, and problem solving with others to accomplish your plan.

Materials

- *Act Healthy* Flip Chart
- Colored markers (thick, to write on Flip Chart)
- Participant manuals
- Roster
- Name tags

As people arrive...

1. Welcome each person to the class and introduce yourself.
2. Offer a nametag and check each person's name off the roster.
3. Give them a participant manual. They can flip through the manual as other group members are arriving.

Give a brief explanation of the purpose of the group and what the group will be doing. (2-3 min.)

Say: Welcome to the first *Act Healthy* class. Thank you for coming today. My name is..... and this is..... and we are going to be the group leaders for the meeting today and the remaining 5 group meetings. *Act Healthy* is a research study sponsored by *Healthy for Life*, the MU wellness program.

The purpose of this class is to see if attending the 6 *Act Healthy* classes results in improved health. Each of the 6 classes will be held in Room (insert number). Before we go any further, let's go around the room and introduce ourselves. Why don't you say your name, your department and what made you sign up to attend this class. I'll go first.....

The *Act Healthy* classes are based on the self-management approach which means learning how to manage your own health. Today we'll be learning about the self-management approach and actually applying it to develop an Action Plan. In this class we'll be focusing on 3 skills of self-management that research has shown helps people succeed.

The 3 skills are:

- Setting a health goal which is something you want to accomplish for your health,
- Making a specific, Action Plan that you can do in the next week to work towards your goal, and
- Problem solving with others to accomplish your plan.

Making Healthy Changes slide

Say: I'm sure all of us have tried making healthy changes in our lives in the past, and we have had different degrees of success. Let's look at some of the strategies people have used to make changes in the past.

The 'Old' Way

Goals set by others
Begin with sweeping changes
Forcing ourselves to do it
Losing motivation and quitting

The Self-Management Way

You set your own goals
Plan small, manageable steps
Being confident
Being successful builds motivation

Read the contents of the slide, engaging group members as they react to the comparisons between the old, familiar approach and the self-management model.

Say: One reason that people often don't accomplish their goals is that they didn't choose them. With the self-management approach, it's important

that you choose your own goal, not what you think you should do but really don't want to do and not what other people think you should do. Another reason people don't accomplish their goals is because they often start by trying to make too big a change. With the self-management approach, you actually plan out your steps ahead of time and intentionally make them small, something you can feel confident about. As you achieve on a small level, it builds confidence and motivation and it's easier to feel successful. When you begin with big changes, it's easy to lose motivation and quit.

The 'Old' Way

Goals set by others
 Begin with sweeping changes
 Forcing ourselves to do it
 Losing motivation and quitting

The Self-Management Way

You set your own goals
 Plan small, manageable steps
 Being confident
 Being successful builds motivation

Let the group know that there is an article about "Making Lasting Changes" published by the American Psychological Association in their manual, if they want to read more about this topic.

Discussing "active group membership." (3-5 min.)

Being an "Active Member" slide.

Say: In order to have the best experience and get the most out of the classes, it is important to commit to being an "active member."

If you want, engage the group in this activity by having each person read one of the bullets. You can pause occasionally to ask why a certain point might be important.

We've come up with a list of things for you to make *Act Healthy* work:

- Attend regularly
- Make and follow Action Plans
- Problem solve and help each other
- Respect others
- Keep **confidential** what happens in the group.
- Give your evaluation and ideas.

Take a moment and emphasize the importance of respecting each others' boundaries. Suggestions and feedback, even when offered in a spirit of helpfulness, can sometimes feel overwhelming.

Tell the class that, to make sure everyone is comfortable, we will

1. Ask first if a person wants help problem-solving.
2. Establish a "hands-up" signal that class members can use to indicate when they have heard as much feedback as they can use for now.
3. Get agreement from the group members to use these approaches.

Activity 1: How Healthy People Act (5 – 10 minutes)



Say: In this activity we are going to talk about *How Healthy People Act*. Let's make a list of behaviors that describe how healthy people act. This exercise is going to help us to prepare to choose behaviors for ourselves that we can do. For example, healthy people might get enough sleep during the night and manage stress. With humor, point out that the chart is not titled "How Healthy People **Don't** Act," so what we are looking for is behaviors that healthy people might do.

Ask group members to name some actions of healthy people as you write them down on the chart.

Troubleshooting:

Here's what to do when a group member suggests a negative action (i.e., absence of action), such as "Not overeating."

Help the group member turn that negative action (i.e., absence of action) into a positive action. Begin by repeating the suggestion and validating that it is healthy to "not overeat." Then, remind the group that this list is about what healthy people *do* do, rather than what they *don't* do.

To help the person reframe their suggestion, ask questions like:

- What would a person who does not overeat *do* when it comes to eating?
- How would they eat?

It is important that the group becomes engaged in making this list together. To get things started, though, you can give ideas of your own or add one or two ideas to the chart from the sample list on the next page.

Troubleshooting:

Here's what to do when group members cannot think of healthy behaviors.

Have group members close their eyes and think of a person they know who they consider to be healthy. Ask them to envision that person engaging in the types of health-related actions that any healthy person might do.

You can pose questions as they think about this healthy person:

- How does this healthy person eat?
- How does s/he sleep?
- How does s/he remain active?

Then, have the group members open their eyes and prompt them to use the example they thought of to suggest ways that healthy people eat, exercise, sleep, and generally take care of themselves.

Here is a sample list, to demonstrate how your chart might look:

How Healthy People Act:

Manage stress,
 Improve a relationship,
 Drink moderately,
 Physically active through the day,
 Communicate openly and clearly,
 Eat a healthy diet,
 Take care of health problems in a timely way,
 Balance work and leisure,
 Sleep 7-8 hours a night,
 Manage emotions in healthy ways,
 Take time to take care of themselves,

Activity 2: Health Goals (2-3 minutes)

Say: Now you have ideas about goals that you want to accomplish. These goals do not have to be a physical health goal like lose weight or eat better. For

example, your goal might be to spend more time with a family member or to develop a new hobby. You may decide to change your goal after the first week and that's fine. Part of self-management is learning how to choose goals that are what you really want.

Ask each person to consider the list of healthy actions and write down 3 – 5 health-related goals they WANT to achieve in their manual on page 7. Remind everyone that goals are things we would like to achieve that would be reasonable to expect to accomplish in 3 to 6 months.

After the group has spent a couple of minutes writing some possible goals, display the ***Examples of Goals slide***. They include: be more fit, be able to walk to do errands or go to meetings without getting out of breath, lose weight, be more pleasant at work, be more patient with my family, get more sleep, have more energy, plant and take care of a vegetable garden, make time to relax, cook healthy meals, reduce cholesterol, learn to swim . . .

Point out that these goals are general and broad. They can be reached over time, generally in a period of around 3 – 6 months. Invite group members to take a minute revisit their lists and revise what they have written if the chart gives them new ideas or if they want to make other changes to their list of potential goals.

Activity 3: Action Steps toward Goal (2-3 minutes)

Say: Now that you have some goals in mind. In this activity, you'll choose one of them to focus on and an action to take toward achieving the goal you selected.

Display the *Be more patient with my family* example on the next slide. Point out the difference between a goal and an action step.

Goal: Be more patient with my family

Possible Action Steps:

Journal my thoughts about the situation

Discuss situation with friend

Identify my triggers
 Discuss stressors with family and brainstorm helpful options
 Identify 2 other things I can do when losing my patience
 Learn relaxation technique

Say: A goal is what you want to happen. Something meaningful to you that can be accomplished in 3-6 months. Actions are the steps you take each week to get there.

Then, use the two-step process below to guide group members through the process of choosing one of their goals and making a list of action steps toward that goal.

Step 1: Ask each person to choose one goal from their list of 3 – 5 goals to focus on for the week.

Step 2: Ask each person to think about what actions, what small steps, they could take to achieve the goal and write down the first few steps they want to do to start working toward the goal. There is a space in the manual under the goal section for the action steps on page 7.

Activity 4: Action Planning (5 min. to make plan; 15-20 for group reports)

Ask people to take out a Action Plan Form from their folder, and take one out for yourself.

1. Point to the first line (“I want....”). Tell them to write the goal they selected in the previous activity on the first line of the form. Pause to give group members a moment to complete this step.
2. Read aloud the next portion of form: “Your action plan should...,” the four components (i.e., what, where, when, how much/long), and the example. Ask if there are any questions.

Then explain that they should fill in the Action Plan box on their form, choosing an action step from the list they made in the previous activity and breaking it down into specific detail.

As noted on the form, tell them that they should be specific about:

- a. **what** they will do,
 - b. **where** they will do it,
 - c. **when** they will do it,
 - d. **how long how/ much**
3. “I’m going to start by giving you an example of an Action Plan I did for myself before class.” Leader gives own example of goal and action (done before class).
 4. Now group members will fill in goals and actions.
 5. “Now that you have your goal and actions, I’d like you to think about how much confidence you have in being able to follow your plan.”
 - 1 = I won’t do it
 - 10 = absolutely sure I will do it
 - 8 or higher = goal

Confidence Number. Have group members read over their Action Plan, and give themselves a 1 – 10. Explain that people are most likely to complete an Action Plan if their confidence level is 8 or greater. Tell them that if their confidence level is below 8, they are not very likely to follow the plan. In this case, they can adjust their plan in order to increase their confidence that they can do it.

6. Group leader gives example of how to revise.

Say: “For example, when I first wrote my plan, I decided to(state actions). Because my confidence in completing this plan was only a 6, I decided to change my plan like this.....”

If you need to revise your plan some strategies are to:

- reduce the number of days per week
- reduce the amount of time or distance
- change the time of day

7. Give people a few minutes to revise their plan if needed. Then, go around the group, having people share their plans. Each person should read their plan out loud and report their confidence level and tell the group how they revised their plan if their confidence level was below 8.

Troubleshooting:

As you go around the group, you might notice that people are having one of the following problems. Here is what to do.

If a person chooses a goal or an action that involves medical recommendations say:

Say: I'm hearing you state that it would be important to consult with your physician about, in order to keep you healthy and safe. What other goal, from your list of 3 – 5 goals, can you choose to focus on in this class?

If the person creates an action plan that is too broad:

Ask questions to get them to be specific and fill in all the parts of the plan. As you did with the Action Steps activity, you can ask them

- Ask specific questions about What they want to do, Where they want to do it, When they want to do it, and How much/long.



If the person's confidence level is less than 8:

Ask what their concerns are about being able to do the plan. The person can re-write the plan if they have ideas. If not, ask them if they would like some ideas from the group. If so, ask the group if they have any suggestions for changing the plan to increase the confidence level. REMIND the person and the group about the "hands-up" signal, which indicates that s/he has heard sufficient feedback.

Explain to the person that s/he can make changes to her/his plan and you will come back to her/him at the end.

Ask each person to use the chart at the bottom of the Action Plan to keep track of how s/he is doing on their plan during the week. Remind them to

bring their Action Plan back to the group with them next week. Make sure everyone knows that they will report back to the group on how it went.

This completes the end of the action planning portion of the class.

☑ Health Resources for Next Week

Turn to the *Health Topics slide*.

Explain to the group that, an option for the group is to choose a health topic each week and everyone can bring information on the topic to share.

Say: Next week we'll talk about whether you as a group would like to bring information in on health topics to share with the rest of the group.

☑ Wrap Up: Make sure you end on time!!!!

1. Remind the group that you will be emailing them mid-week to provide support and to check in on their plans.
2. Remind them to keep track of their healthy actions by filling in the chart at the bottom of their Action Plan form. They should bring the form with them next time.
3. Encourage people to come back whether they succeeded or the *plan* failed. Remind them that this class is not about forcing themselves into acting healthy. Self management is a process. It's about gradually learning to find ways to succeed at the healthy actions they want to take. If the plan failed this week, they can come back and we'll work together to fix the plan for next week.

Goodbye and good luck!

Weeks Two, Three, & Four

Purpose

The purpose of Weeks 2-4 is to reinforce group members' ability to practice making Action Plans, accurately rate their confidence levels, and follow through on their Action Plans. Key components to attaining these skills are the development of confidence through success as well as giving and receiving group support each week.

Teaching Objectives

1. Continue fostering a collaborative relationship among group members.
2. Review the core concepts of the self-management approach.
3. Recognize and apply the key tools of self-management: identifying goals, making an Action Plan, and problem solving with others to accomplish your plan.

Materials

- Roster
- [for Week 2] Thermometer handouts
- Extra Action Plan forms
- Health topic information requested at the end of last week's class (optional).

As people arrive...

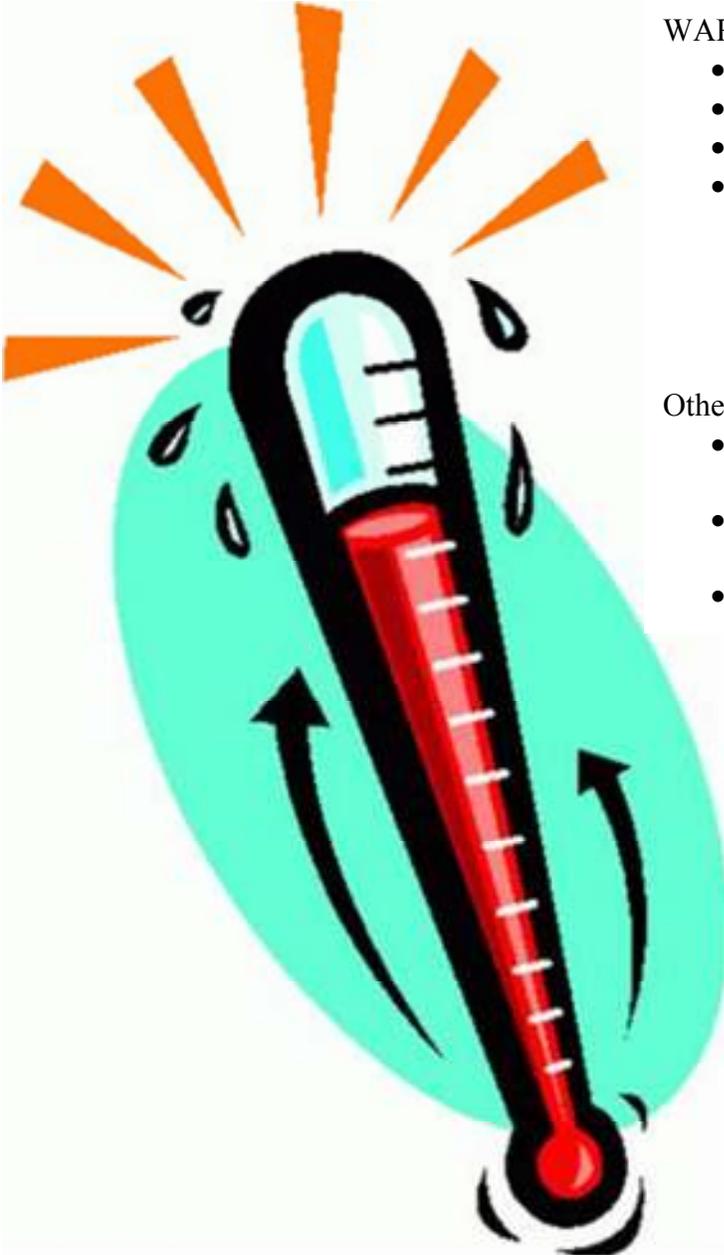
1. Welcome them back to the class.
2. Check each person's name off the roster.

Go over Class Plan

1. **Warning Signs (Thermometer handout) (Lesson 2 only)**
2. **Activity 1: Action Plan Report**
3. **Activity 2: Create This Week's Action Plan**
4. **Activity 3: Health Resource Sharing (optional)**
5. **Health Topics for next week (optional)**

Week 2 only: Warning Signs and Success Signs (2-3 min.)

Ask the class to turn to page 11 to review the thermometer lesson. Explain to the class that there are some key signs that they can look for when evaluating their Action Plans each week. These signs indicate how likely a person is to succeed (or a plan is to fail), based on the tenets of the self-management model.



WARNING SIGNS:

- >1 action step
- vague plan
- new behavior [and]
- large increases in:
 - o days
 - o times
 - o distance
 - o other amount

Other considerations:

- Did you feel like you “should” do it rather than that you wanted to do it?
- Did you force yourself to do it rather than look forward to doing it and enjoy doing it?
- Did you have a low confidence level?

TO INCREASE THE LIKELIHOOD OF SUCCESS,
try making a plan with these qualities:

- | | |
|---|--------------|
| • 1 action step | • specific |
| • familiar behavior | • measurable |
| • or new behavior with small,
gradual increases in days, times,
distance, or other amount | |

Ask your group members to take out their Action Plans from the previous week. Tell them to keep in mind the warning and success signs just discussed.

Weeks 2-4: Activity 1: Action Plan Report (15-20 min.)

Explain to the group that, in today's first activity, each person will report their action plan and their confidence level from last week and tell how it went.

Say: If you completed your action as planned, you will brainstorm actions for the coming week. If you did not complete the planned action, you can work with the group to problem solve and make a new plan.

Ask for a volunteer to start the reporting and proceed to that person's right.

Say: Read your Action Plan and your confidence level first. Then tell us how it went.

- ***If they successfully completed their action as planned***, congratulate them and ask them to share their thoughts about why they think it was successful and what they think they'll do in the coming week.
- ***If not successful***, ask what the problems were. To build support, ask the group for a show of hands if anyone else has ever had similar problems. Ask the person how they will make a change for the coming week to be more successful.

If you have the person's permission, engage the whole group in brainstorming if the person needs ideas. (Remind the group about the "hands-up" signal, which indicates when the person has had her/his fill of feedback.) If the person likes the ideas, s/he can use them in this week's Action Plan, to be completed in the next activity.



Troubleshooting:

Here are some reasons that people do not complete their actions, followed by some suggestions for how to address each reason:

1. **They did not REALLY want to do that action.** If this is the case, they should choose another action.
2. **Their confidence rating was inaccurate.** This is commonly the reason, especially in early weeks of the class, and emerges if the person actually did want to do that action. As a solution, have them modify the plan to get a higher confidence number and try it again this coming week.

Turn to page 10 of the participant manual and remind the group about ways to increase confidence.

Activity 2: Create This Week's Action Plan (10-15 min.)

Say: Great work, everyone. Now let's take what we learned from last week's experience and use it to fill out our action plans for this week.

Remind the group that their plans should be something that they **WANT** to do and that they feel confident that they **CAN** do.

Say: It's okay if you've changed your mind about your goal. It's common to re-evaluate what we want from our health after giving it a bit more focus than usual. Just write your new goal at the top of the Action Plan.

Give the group around 5 minutes to write their Action Plans. Then, ask for a volunteer to begin and proceed to that person's right until everyone has shared their action plan and confidence level for the coming week.

- If anyone reports a confidence level less than 8, engage the group in problem-solving for the new plan to be 8 or greater.
- Activity is finished when everyone has an action plan for the coming week.

☑ Activity 3: Health Resource Sharing (5-10 min.) (Optional)

Ask group members if they want to bring health information to share for the following weeks. If so, ask the group to brainstorm to come up with a list of health topics. If the group chooses to do this, ask everyone to bring something that they know about that topic. It's fine if the group decides that they do not want to bring in information to share.

Topic to bring Week 3: _____

Topic to bring Week 4: _____

Topic to bring Week 5: _____

☑ Wrap Up

1. Remind the group that you will be emailing them mid-week to provide support and to check in on their plans.
2. Remind them to keep track of their healthy actions by filling in the chart at the bottom of their Action Plan form. They should bring the form with them next time.
3. Encourage people to come back whether they were successful or not. Remind them that this class is not about forcing themselves into acting healthy. Self management is a process. It's about gradually learning to find ways to succeed at the healthy actions they want to take. If they did not find a way to take action this week, they can come back and we'll work together to find a way next week.
4. If the group decided to share a resource the following week, remind people of the topic, which is _____

Good bye and good luck.

Week Five

Note to Leaders: *Week Five is conducted the same as Weeks Two through Four with one exception: there is an additional activity. Please reserve enough time in this class to complete that extra, 5-minute activity.*

Purpose

The purpose of Week Five is to check in with group members about last week's progress and to prepare them for next week, which is the final week of class.

Teaching Objectives

1. Review the core concepts of the self-management approach.
2. Recognize and apply the key tools of self-management: identifying goals, making an Action Plan, and problem solving with others to accomplish your plan.
3. Begin to engage group members to think about how to apply these concepts in the future.

Materials

- *Act Healthy* Flip Chart
- Colored markers (thick, to write on Flip Chart)
- Roster
- Name tags
- Extra Action Plan forms
- Healthy topic requested by the group at the end of last week's class. (optional)

As people arrive...

Welcome them back to the class.

Go over the Class Plan (2-3 min.)

1. Activity 1: Action Plan Report
2. Activity 2: Create This Week's Action Plan
3. Activity 3: Health Resource Sharing (optional)
4. Activity 4: Preparing for Week Six

Tell them that, in today's first activity, they'll go around the group and report on how the Action Plan went for the past week. Then, they will make a new plan for the final week and report that. Ask your group members to take out their Action Plans from the previous week in preparation for Activity 1.

☑ **Activity 1: Action Plan Report (15-20 min.)**

Ask for a volunteer to start the reporting and proceed to that person's right.

Say: Read your Action Plan and your confidence level first. Then tell us how it went.

- ***If they successfully completed their action as planned***, congratulate them and ask them to share their thoughts about why they think it was successful and what they think they'll do in the coming week.
- ***If not successful***, ask what the problems were. To build support, ask the group for a show of hands if anyone else has ever had similar problems. Ask the person how they will make a change for the coming week to be more successful.

If you have the person's permission, engage the whole group in brainstorming if the person needs ideas. (Remind the group about the "hands-up" signal, which indicates when the person has had her/his fill of feedback.) If the person likes the ideas, s/he can use them in this week's Action Plan, to be completed in the next activity.



Troubleshooting:

If needed, refer to the Troubleshooting tips at the top of page 23.

☑ **Activity 2: Create This Week's Action Plan (10-15 min.)**

Say: Great work, everyone. Now let's fill out our action plans for this week.

Give the group around 5 minutes to write their Action Plans. Then, ask for a volunteer to begin and proceed to that person's right until everyone has shared their action plan and confidence level for the coming week.

Activity 3: Health Resource Sharing (5-10 min.)

Group members to share resources/information about if desired.

Activity 4: Preparing for Week Six (5 min.)

Remind the group that next week is the last class.

Say: Once you start thinking about health and achieving your goals, your thoughts about what is possible can change. Spend some time this week thinking about what you've learned from taking this class. We'll be talking about what we've learned next week. Even though next week is the last week, we'll still be doing an Action Plan to use the week after the classes end.

Explain to the group that they will receive new Action Plan forms to be used after the *Act Healthy* classes are over. They will also be asked to complete an evaluation form. The comments received will be used to improve the next set of classes offered to MU employees.

Wrap Up

1. Remind the group that you will be emailing them mid-week to provide support and to check in on their plans.
2. Remind them to keep track of their healthy actions by filling in the chart at the bottom of their Action Plan form. They should bring the form with them next time.
3. Encourage people to do some reflection before the next class about what they learned during the past 6 weeks in the class.

Good bye and good luck.

Week Six

Purpose

The purpose of Week Six is to engage group members in reflecting on the knowledge they have gained and applied by using the self-management approach to achieving health goals over the past six weeks. Additionally, this week the group will learn to apply this knowledge and confidence to setting continued health goals for themselves.

Teaching Objectives

1. Reinforce the benefits of the collaborative relationship formed over the past six weeks among group members.
2. Encourage ongoing application of the core concepts of the self-management approach.
3. Support group members in setting continued health goals using the self-management approach.

Materials

- *Act Healthy* Flip Chart
- Colored markers (thick, to write on Flip Chart)
- Roster
- NEW Action Plan forms

As people arrive...

Welcome them to their FINAL class.

Go over the Class Plan (2-3 min.)

1. Activity 1: Action Plan Report (15-20 min.)
2. Activity 2: What you have learned about managing your health
3. Activity 3: Group Recap
4. Activity 4: Individual Recap
5. Complete *Act Healthy* evaluation

Tell them that, in today's first activity, they'll go around the group and report on how the Action Plan went for the past week. Then, they will make a new

plan for the coming week and report that. Tell them that this week we'll be also be talking about what we've learned.....

Ask your group members to take out their Action Plans from the previous week in preparation for Activity 1.

☑ **Activity 1: Action Plan Report (15-20 min.)**

Ask for a volunteer to start the reporting and proceed to that person's right. Ask the person to read her/his Action Plan and confidence level first. Then tell us how it went.

- ***If they successfully completed their action as planned***, congratulate them and ask them to share their thoughts about why they think it was successful and what they think they'll do in the coming week.
- ***If not successful***, ask what the problems were. To build support, ask the group for a show of hands if anyone else has ever had similar problems. Ask the person how they will make a change for the coming week to be more successful.

If you have the person's permission, engage the whole group in brainstorming if the person needs ideas. (Remind the group about the "hands-up" signal, which indicates when the person has had her/his fill of feedback.) If the person likes the ideas, s/he can use them in this week's Action Plan, to be completed in the next activity.

Troubleshooting:

If needed, refer to the Troubleshooting tips at the top of page 23.



Activity 2: What you have learned about managing your health:

Self-Management Principles.

Participants have a copy of the self-management principles in their manuals on page 25. Review the principles, which are also listed below.

- Choose your goal
- Identify action steps to reach goal
- Make an action plan
- Do the plan for a week and evaluate
- Revise plan as needed or make another plan
- Be confident that you can make a plan and successfully carry it out

Activity 3: Group Recap

What We've Learned.

Ask group members to think about what they've learned over the past 6 weeks and to write some of their thoughts down on page 26.

Troubleshooting:

If group members need help starting this activity, you can suggest one or two insights from this list: difference between goal and action step, make action plan, modify plans, be flexible, be realistic, take small steps, don't beat yourself up, know when to ask for help, friend support, decide if you really want to do something, okay to make modifications, take one step at a time...)

ACTivity 4: Individual Recap

Ask each person to think about how they plan to use this information in the next month and write it down on page 26 on the bottom half of the page. Give them several minutes to jot down some ideas.

Then ask the group to read their responses for the group and individual recap and write them down on the flipchart. Let group know it's ok not to share any information they are not comfortable sharing.

Note: Activities 3 and 4 are almost identical. Pretty much the same question is asked in 2 different ways. Also, group 4 involves going around the room so everyone gets a chance to contribute.

Say: Everyone in this group has accomplished something, and you've done it by helping each other.

Self-Management Principles

- **Be willing to learn about and assume responsibility for your daily health actions**
- **Choose your own health goals**
- **Identify action steps to reach goal**
- **Make an action plan**
- **Do the plan for a week and evaluate**
- **Revise plan as necessary or make another plan**
- **Be confident that you can make a plan and successfully carry it out**

What have you learned?

Keeping the Keys to Self-Management in mind, take a moment to reflect on what you've learned over the past six weeks about how to act healthy.

How will you apply what you've learned about yourself in the coming 3-6 months?

☑ Wrap Up

1. Encourage the group members to continue making Action Plans.
2. Tell them that someone from *Healthy for Life* will get back in touch with them in 3 months and again in 12 months for a follow up evaluation.
3. Suggest that interested group members share email addresses with each other if they wish.
4. Hand out the course evaluation. These materials are to be filled out before each member leaves class today.

ACT HEALTHY

To get what you want!

*A 6-week behavior support class
that teaches people to self-manage their health,
giving them the knowledge, skills,
experiences, and confidence
to choose and live a healthier life.*

PARTICIPANT MANUAL



Acknowledgements

We would like to extend our gratitude to the developer of the Chronic Disease Self-Management Program, Kate Lorig, R.N., Dr.PH., and her colleagues at the Stanford Patient Education Research Center.

Dr. Lorig's insight, which generated the Self-Management philosophy and intervention model, and her commitment to maintaining the integrity of the Self-Management model throughout its varied applications, have made the *Act Healthy* program possible.

We would also like to thank the first group of participants and leaders, who are members of the faculty and staff at the University of Missouri.



Act Healthy Program Guide

Overview of Self-Management	p. 4
Week 1	p. 5
Week 2	p. 9
Week 3	p. 14
Week 4	p. 17
Week 5	p. 21
Week 6	p. 24
Action Plan	p. 28

Overview of Self-Management

EVERYBODY WANTS TO ACT HEALTHY. However, not all of us do. Of those of us who do manage to act healthy, we may find that we are not be able to do so in all areas of our lives. Maybe we get the amount of sleep each night that feels sufficient for ourselves, but we cannot seem to reduce our coffee intake mid-morning at the office. Some of us might have figured out how to act healthy in a variety of areas in our lives, yet we struggle to maintain healthy behaviors at certain times. For instance, a nightly walk that is truly enjoyed might fall by the wayside when we spend a few weeks working late to meet an upcoming due date. Or the presence of sugary snacks becomes a temptation when holiday season arrives and a tableful of treats sits, tempting us, next door in the break room.

If we know the importance of caring for our health, and if we value being healthy, what keeps us from managing our health more effectively? As the authors of *Living Healthy* observed, “managing our [health,] like managing a family or a business, is a complex undertaking. There are many twists, turns, and mid-course corrections” (p. 7). By learning self-management skills, we can improve our ability to live the healthy life that we choose by cultivating these self-management skills:

- SETTING HEALTH-RELATED GOALS
- IDENTIFYING STEPS TO TAKE TO REACH THE GOAL
- MAKING ACTION PLANS
- CARRYING OUT ACTION PLANS
- EVALUATING SUCCESS AND REVISING PLANS IF NEEDED
- PROBLEM-SOLVING TO OVERCOME BARRIERS

This manual will guide you and your co-workers down the path of becoming effective self managers of your health.

Thank you for taking this Act Healthy class.

Week One

Purpose

The purpose of Week One is to get to know your fellow group members as well as to develop an understanding of self-management and its primary tools.

Learning Objectives

4. Develop a collaborative relationship with your group members.
5. Identify the core concepts of the self-management approach.
6. Recognize and apply the key tools of self-management: identifying goals, listing action steps, and problem solving with others to accomplish your plan.

Class Plan

3. Introductions
4. Overview of the self-management approach
5. Making Healthy Changes: The 'Old' Way and the Self-management Way
6. Being an Active Group Member
7. Activity 1: How Healthy People Act
8. Activity 2: Personal Health Goals
9. Activity 3: Action Steps toward Goal
10. Activity 4: Action Planning
11. Health Topics for next week (optional)

Week Two

Purpose

The purpose of Week 2 is to reinforce your ability to identify goals and the action steps to reach them, accurately rate your confidence level, and follow through on your Action Plan. Key components to attaining these skills are the development of confidence through success as well as giving and receiving group support each week.

Learning Objectives

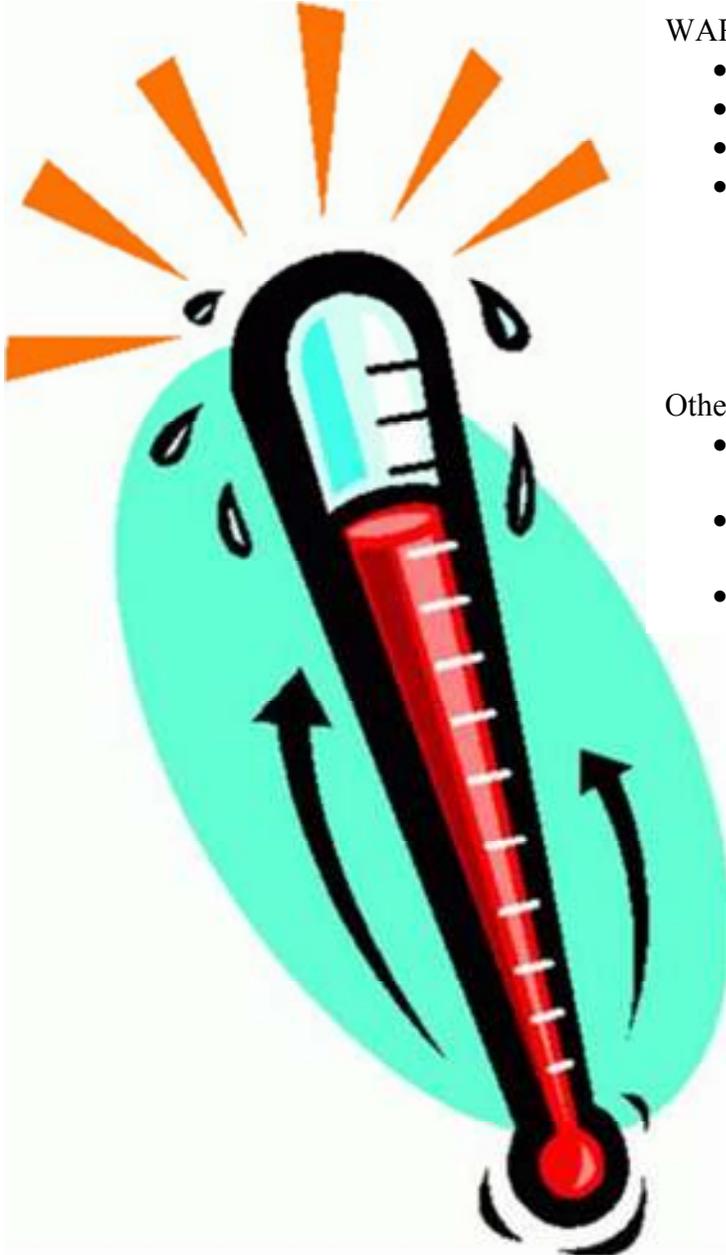
4. Continue developing a collaborative relationship with fellow group members.
5. Review the core concepts of the self-management approach.
6. Build group problem-solving skills as you use the key tools of self-management.

Class Plan

1. Warning Signs (Thermometer handout)
2. Activity 1: Action Plan Report
3. Activity 2: Create This Week's Action Plan
4. Activity 3: Health Resource Sharing (optional)
5. Health Topics for next week (optional)

Week 2 only: Warning Signs and Success Signs (2-3 min.)

Ask the class to turn to page 11 to review the thermometer lesson. Explain to the class that there are some key signs that they can look for when evaluating their Action Plans each week. These signs indicate how likely a person is to succeed (or a plan is to fail), based on the tenets of the self-management model.



WARNING SIGNS:

- >1 action step
- vague plan
- new behavior [and]
- large increases in:
 - o days
 - o times
 - o distance
 - o other amount

Other considerations:

- Did you feel like you “should” do it rather than that you wanted to do it?
- Did you force yourself to do it rather than look forward to doing it and enjoy doing it?
- Did you have a low confidence level?

TO INCREASE THE LIKELIHOOD OF SUCCESS,
try making a plan with these qualities:

- | | |
|---|--------------|
| • 1 action step | • specific |
| • familiar behavior | • measurable |
| • or new behavior with small,
gradual increases in days, times,
distance, or other amount | |

Week Three

Purpose

The purpose of Week 3, as it was with Week 2, is to continue reinforcing your ability to identify goals and the action steps to reach them, to accurately rate your confidence level, and to follow through on your Action Plan. Key components to attaining these skills are the development of confidence through success as well as giving and receiving group support each week.

Learning Objectives

1. Continue developing a collaborative relationship with fellow group members.
2. Review the core concepts of the self-management approach.
3. Build group problem-solving skills as you use the key tools of self-management.

Class Plan

1. Activity 1: Action Plan Report
2. Activity 2: Create This Week's Action Plan
3. Activity 3: Health Resource Sharing (optional)
4. Health Topics for next week (optional)

Week Four

Purpose

The purpose of Week 4, as it was with Weeks 2 and 3, is to continue reinforcing your ability to identify goals and the action steps to reach them, to accurately rate your confidence level, and to follow through on your Action Plan. Key components to attaining these skills are the development of confidence through success as well as giving and receiving group support each week.

Learning Objectives

1. Continue developing a collaborative relationship with fellow group members.
2. Review the core concepts of the self-management approach.
3. Build group problem-solving skills as you use the key tools of self-management.

Class Plan

1. Activity 1: Action Plan Report
2. Activity 2: Create This Week's Action Plan
3. Activity 3: Health Resource Sharing (optional)
4. Health Topics for next week (optional)

The Old Way	The Self-Management Way
<ul style="list-style-type: none"> • Your goals are set by others • You begin with sweeping changes • You force yourself to do it • You lose motivation and quit 	<ul style="list-style-type: none"> • You set your goals • You take small, manageable steps • You want to do it and feel confident doing it • Your success fuels motivation
<p>Key features of the Old Way:</p>	<p>Key features of the New Way:</p>
<ul style="list-style-type: none"> • You feel like you <i>should</i> do it. • You have to force yourself to do it. 	<ul style="list-style-type: none"> • You want to do it • You look forward to and enjoy doing it

Week Five

Purpose

The purpose of Week Five is to check in about last week's progress and to prepare you for next week, which is the final week of class.

Learning Objectives

4. Review the core concepts of the self-management approach (identifying goals, making an action plan and problem solving with others to accomplish your plan).
5. Begin to engage group members to think about how to use the self-management approach to continue forming Action Plans after the classes end.

Class Plan

5. Activity 1: Action Plan Report
6. Activity 2: Create This Week's Action Plan
7. Activity 3: Health Resource Sharing (optional)
8. Activity 4: Preparing for Week Six

Week Six

Purpose

The purpose of Week Six is to reflect on the knowledge you have gained and applied by using the self-management approach to achieve your health goals over the past six weeks. Additionally, this week you will write an Action Plan to use during the next week (after the class ends).

Learning Objectives

4. Reinforce the benefits of the collaborative relationship formed over the past six weeks with your fellow group members.
5. Feel comfortable writing Action Plans after the class is over.
6. Become inspired to continue applying the concepts of the self-management approach.

Class Plan

1. Activity 1: Action Plan Report
2. Activity 2: What you have learned about managing your health
3. Activity 3: Group Recap
4. Activity 4: Individual Recap
5. Complete *Act Healthy* evaluation

Self-Management Principles

- **Be willing to learn about and assume responsibility for your daily health actions**
- **Choose your own health goals**
- **Identify action steps to reach goal**
- **Make an action plan**
- **Do the plan for a week and evaluate**
- **Revise plan as necessary or make another plan**
- **Be confident that you can make a plan and successfully carry it out**

What have you learned?

Keeping the Keys to Self-Management in mind, take a moment to reflect on what you've learned over the past six weeks about how to act healthy.

How will you apply what you've learned about yourself in the coming 3-6 months?

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Vita

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