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EVALUATION OF HEALTH NEWSLETTERS AS A MOTIVATIONAL TOOL TO PROMOTE EXERCISE

A thesis submitted In
Partial Fulfillment of the Requirements
for the Degree of
Master of Science
at Minnesota State University, Mankato

By
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May 2011

EVALUATION OF HEALTH NEWSLETTERS AS A MOTIVATIONAL TOOL TO PROMOTE EXERCISE

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This thesis has been examined and approved by the following members of the thesis committee.

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ABSTRACT

EVALUATION OF HEALTH NEWSLETTERS AS A MOTIVATIONAL TOOL TO PROMOTE EXERCISE

Little is known about the relationship between Sage*Plus* newsletters and its effectiveness to motivate physical activity. The purpose of this study is to evaluate the impact of the Sage*Plus* newsletter and its ability to motivate participants to achieve their goals to increase physical activity. A nonexperimental, descriptive correlational design was used in this study. Calls were made until the list of potential participants was exhausted. Forty English speaking participants were contacted and agreed to participate in the telephone survey from a potential list of 190 women enrolled in the Sage*Plus* program. A modified questionnaire containing 19 multiple-choice and one open-ended question was used in a telephone survey. Data was analyzed using the Statistical Package for the Social Sciences (SPSS) version 12. Participants increased their minutes of moderate activity (50%) and minutes of walking (67.5%) from the time of enrollment in the Sage*Plus* program to the time this study was conducted. The participants reading and receiving the newsletter were motivated to continue to work on their activity/exercise habits and goals, however, an increase in physical activity was found only in minutes of moderate activity and minutes of walking activity. Participants reported improvement in exercise habits (77.5%) and exercise goals (82.5%) from reading the newsletter. Healthcare providers can promote healthy lifestyle changes by the use of newsletters however no correlation existed between reading the Sage*Plus* newsletter and engaging in physical activity.

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CHAPTER I

INTRODUCTION

Engaging in physical activity improves general health and decreases health-related illness and disease. Current studies have shown that Americans of all ages are not participating in the recommended daily exercise guidelines of 30 minutes of moderate exercise most days of the week (Centers for Disease Control and Prevention [CDC], 2010a; Kowal & Fortier, 2007; U.S. Department of Health and Human Services [USDHHS], 2010a). Participation in physical activity requires commitment and determination along with identifying barriers. Barriers have the potential to obstruct people's ability to achieve their set goals. Healthy-behavior modifications need to be identified and implemented in order to change and continue motivation toward healthy lifestyles. Several interventions, specifically newsletters, can be utilized to increase motivation of the participant.

Physical activity is defined as any bodily movement produced by skeletal muscle that requires energy expenditure (World Health Organization [WHO], 2010). Physical activity is an important component to improving overall well-being and decreasing health risks.

Physical activity has been shown to reduce heart disease risk factors (USDHHS, 2010a). In contrast, a lack of activity or exercise can result in primary disease processes including heart disease, hypertension, diabetes, certain types of cancer, and arthritis (CDC, 2010b). Of these diseases, hypertension is the most common preventable cause of death in women (Foreman, Stampfer, & Curhan, 2009). Body Mass Index (BMI) is the

most accurate predictor of hypertension in women of the six identified factors that reduce hypertension risk (Foreman et al., 2009). Identified groups at higher risk for physical inactivity are women, African Americans, Hispanics, those of lower socioeconomic status, and those with less education (USDHHS, 2010a). More than 80% of the general U.S. adult population does not meet the current exercise activity guidelines (USDHHS, 2010a).

According to "The Surgeon General's Vision for a Healthy and Fit Nation 2010," two-thirds of adults and nearly one-third of children are overweight or obese (USDHHS, 2010b). In the period from 1980-2008, obesity more than doubled for adults and more than tripled for children (USDHHS, 2010b). The U.S. has reached epidemic levels of obesity and preventable illness; obesity is a top risk factor of diabetes (CDC, 2010b). The CDC is projecting 1 in 3 Americans will have diabetes by the year 2050 (CDC, 2010b).

Both aerobic and muscle-strengthening exercises are needed to improve or maintain one's health. These activities should be done weekly in order to be effective (CDC, 2010a). It is important for aerobic activity to increase the heart rate for a minimum of 10 minutes at a time; therefore, most activities around the home do not have the benefits of aerobic exercise that are required for a healthy life (CDC, 2010a). Muscle-strengthening needs to be incorporated at least two days per week and utilize all major muscle groups (CDC, 2010a). Repetitions need to occur until it becomes difficult to perform another. It is important to note that muscle-strengthening does not replace the necessity of aerobic or cardio exercises. Moderate-intensity exercise of at least 1 hour

per week has been found to increase the health-related quality of life (HRQL) in healthy older adults (Acree et al., 2006; Nies & Motyka, 2006).

Physical activity is one of 39 "priority" topic areas identified by the USDHHS in Healthy People 2020 (Healthy People 2020, 2010). Each of the 39 topic areas has specific objectives. In Healthy People 2020 one of the objectives retained from Healthy 2010 is to "reduce the proportion of adults who engage in no leisure-time physical activity" (Healthy People 2020, 2010, p. 264). Data from these reports and others indicate Americans are not spending the recommended time engaging in physical activity to be beneficial to promote healthy living. According to the 2009 National Health Interview Survey, 33% of adults were considered inactive, 33% of adults had some leisure-time physical activity, and 35% of adults engaged in some kind of regular physical activity (CDC, 2010a). Kowal and Fortier (2007) found that less than 15% of the population engaged in the recommended 30 minutes a day of rigorous physical activity most days of the week.

There are a number of lifestyle modifications that contribute to the well-being or promote an individual's health. Aerobic activity, running, and walking are all effective ways to engage in physical activity. Inclusion of any of these activities into a regular routine can protect against serious diseases such as heart failure, diabetes, and hypertension (Djousse, Driver, & Gaziano, 2009). Physical activity contributes to a higher quality of life compared to those who are sedentary (Acree et al., 2006). The knowledge of health benefits from implementing exercise into one's daily routine is widespread, but studies indicate the activity level for the majority of the American population is inadequate (USDHHS, 2010a). Modifying one's behavior to include the

recommended level of physical activity requires dedication and determination along with identifying barriers and ways to overcome them.

Barriers are those factors that keep individuals from making progress toward a plan or goal. Physical activity barriers can be either internal, external, or a combination of both. The most commonly reported barriers that keep one from engaging in physical activity include: lack of time, lack of energy, fatigue, lack of social support, and health problems (Kowal & Fortier, 2007). Environmental characteristics such as enjoyable scenery, seeing others exercising in their neighborhood, safe environments, social cohesion, and streetlights and their correlation to physical activity have also been studied (Eyler et al., 2002; Fisher, Li, Michael, & Cleveland, 2004; King et al., 2000; Kowal & Fortier, 2007). Several barriers have been identified which weaken physical activity participation and include such things as costs, safety, heavy traffic, and inadequate programming or facilities (Craig, Cameron, Russell, & Beaulieu, 2001; King et al., 2000; Kowal & Fortier, 2007). Healthy outcomes require continued motivation while encountering these and other individual barriers.

Physical activity is a lifestyle change that once implemented into practice has numerous health benefits. Behavior modification is found to be more successful when individualized; the person has ability to take ownership of their plans and goals. Motivation helps to sustain the desired pattern of behavior changes that are being made by an individual. Continued motivation enables people to meet or exceed their goals toward healthy lifestyle changes. Primary care providers can be instrumental in motivating people to make behavioral changes to increase their physical activity.

Motivation for change has several components. First, the individual must desire to change and take ownership of the task. Then, the individual must implement the behaviors into habitual behavior. Finally, there must be continued motivation to move beyond barriers that may deter the individual from the completion of the goal (Klein et al., 2004).

A variety of educational strategies are used by healthcare professionals to motivate people to make or practice healthy behaviors. The use of educational strategies increases an individual's knowledge and understanding to hopefully get them to engage in healthy lifestyle behaviors voluntarily (Tyrrell & Eyles, 1999). Healthcare providers are often charged with effective ways to provide information that influences individual behavior and motivates continuation of healthy lifestyles (Tyrrell & Eyles, 1999).

Newsletters are one resource that may be used to provide health information to motivate individual behavior modification. Typically, newsletters include information that is targeted at a specific group of people or a specific topic. Health education is used to implement, update, and motivate healthy lifestyles. Knowledge, skills, and opportunities can create an atmosphere for individuals to make changes in their current health practices and direct them toward healthy lifestyle living. A newsletter is a valuable tool to disseminate educational material; however, it is a one-way communication and does not allow the target group to get specific questions answered immediately unless answers are contained in the newsletter.

The Well-Integrated Screening and Evaluation for Women Across the Nation (WISEWOMAN) program was initially funded by Congress in 1995 and currently funds programs in 19 states and two tribal organizations (CDC, 2010c). Its primary focus is on

cardiovascular health and operates as a sister program to The National Breast and Cervical Cancer Early Detection Program [NBCCEDP] (CDC, 2010c). In 2004 the Sage*Plus* program began in Minnesota as part of the WISEWOMAN program developed by the CDC. In the state of Minnesota the Sage*Plus* program is administered and run by the Minnesota Department of Health. Eligibility is determined by previous screening for breast and cervical cancer through the SAGE program, having no insurance or being underinsured, and meeting age and income guidelines. Women enrolled must agree to learn about healthy lifestyle changes and consider making changes toward a healthier lifestyle.

The main focus areas of the Sage*Plus* program include: diet, activity, and smoking cessation to eligible low-income, middle-aged women. The Sage*Plus* program provides a cardiovascular risk assessment through pertinent laboratory evaluation and data collection (MDH, 2009). The Minnesota Sage*Plus* program's primary goal is preventing heart disease. Participants are encouraged to enroll in the steps program or smart choices program which offer performance-based incentives in an attempt to keep participants motivated (MDH, 2009). Increased daily activity is promoted through the Sage*Plus* program by which participants try to increase their daily physical activity at their own pace working toward 10,000 steps a day.

The Sage*Plus* program incorporates lifestyle coaching, performance-based incentive plans, and a monthly health newsletter to promote, motivate, and encourage healthy lifestyles. Multiple methods of health promotion must be employed to reach a variety of people with different cultural and socioeconomic backgrounds. Health education is a primary piece of health promotion in the Sage*Plus* program (MDH, 2009).

Problem Statement

While printed materials are widely used to inform or educate in healthcare settings, little is known about their effectiveness. The effectiveness of printed materials, specifically newsletters, has not been extensively studied. Substantial knowledge and research gaps exist in the relationship between newsletters and their effectiveness to motivate physical activity. A monthly newsletter is mailed to all participants for 12 months after enrolling in the Sage*Plus* program. The intent of the newsletter is to motivate women to continue to work towards their identified diet and activity goals. It is currently unknown whether or not the Sage*Plus* newsletter successfully meets this objective in regard to physical activity.

Purpose of Study

The purpose of this study was to determine the effectiveness of the Sage*Plus* newsletter in motivating low-income, middle-aged women to engage in regular physical activity, specifically reaching the 10,000 steps-a-day recommended goal or their self-identified physical activity goals. The 12 monthly newsletters are intended to continue to motivate the participants to work towards their goals during the entire year of their enrollment in the Sage*Plus* program.

Research Questions

The research questions that were used to guide this research study were:

1. Have the participants exercise habits increased with reading the monthly Sage*Plus* newsletter?
2. Does reading the newsletter motivate the participants to continue working on their exercise goals?

3. When the newsletter is received, does the newsletter motivate behavior change to work on increasing physical activity or exercise?

Definition of Terms

For the purpose of this study, the following definitions are used.

Behavior modification is a treatment that uses rewards to reinforce desired behavior.

Exercise is physical activity that is done to prevent disease and maintain or increase one's health. It is beneficial physically and mentally and should be done on a regular basis in order to maximize the benefits.

Intervention is interceding with the intent of modifying the outcome.

Low-income is a maximum monthly income of $2,256 as well as an additional $779 allowance for each additional family member in the household.

Middle-aged women are between 40 and 64 years of age.

Newsletter is a small publication containing news of interest chiefly to a special group.

Assumptions

For the purpose of this study, the following assumptions were made.

1. All participants received the monthly Sage*Plus* newsletter.
2. All participants read the Sage*Plus* newsletter monthly.
3. All participants answered the questionnaire truthfully and to the best of their knowledge.
4. All participants were capable of reading the newsletter in English.
5. Motivation for behavior change is needed.

Limitations

The limitations of this study include.

1. The conclusions of this study are not applicable to the general population as it is only pertinent to the population that is receiving the monthly Sage*Plus* newsletter.
2. Individuals cannot attain a perfect exercise regimen.
3. Individual biological patterns vary.

Summary

Physical activity has a significant positive impact on health. Even with this knowledge the majority of Americans do not participate in the recommended 150 minutes per week of moderate-intensity aerobic activity, and therefore increase their risk of disease. Increasing awareness and engaging in physical activity may require behavior modification and continued motivation. Communication literature such as a newsletter may be useful to motivate individuals to engage in healthy lifestyle behaviors. Examining the impact of the Sage*Plus* newsletter and its ability to motivate participants to achieve their goals and increase physical activity will assist in providing appropriate interventions. Providers will then be able to implement these interventions to promote healthy lifestyles in these clients.

CHAPTER II

REVIEW OF THE LITERATURE

The purpose of this study was to determine the effectiveness of the Sage*Plus* newsletter in motivating low-income, middle-aged women to engage in regular physical activity, specifically reaching a 10,000 steps-a-day recommended goal or their identified physical activity goals. This chapter presents a review of the literature pertaining to the use of newsletters designed as an intervention technique to educate and motivate behavior change associated with physical activity. The specific topics discussed are lifestyle modification and health promotion, physical activity, barriers to physical activity, newsletters as a motivational intervention, and the theoretical framework.

Literature that was relevant to this study was reviewed from the years 1990-2010 using the following data bases: Cumulative Index for Nursing and Allied Health Literature (CINAHL), U.S. National Library of Medicine, Medline (PubMed), CDC, USDHHS, WHO, dissertations, theses, as well as a general internet search. Search terms included "physical activity," "exercise," "newsletter," "tailored newsletter," "behavior modification," "motivational interview," and "motivating behavior change."

Lifestyle Modification and Health Promotion

Lifestyle modification occurs when long-held habits such as eating or physical activity change and new habits are maintained over months and years. According to the National Institutes of Health, most people find it very difficult to make permanent lifelong changes to their eating habits and physical activity (Klein et al., 2004).

Anderson, Anderson, and Hurst, (2010) mailed a survey to 866 women aged 51 to 66 years participating in stage two of the Healthy Aging of Women Study from rural and urban locations in Queensland, Australia. The authors were exploring reasons that impact women to make positive changes in exercise and dietary behaviors (Anderson et al., 2010). The survey collected sociodemographic data, BMI, diagnosed chronic health conditions, and exercise and dietary self-efficacy and change data, as well as rating quality of life related to health (Anderson et al., 2010). The authors found that middle-aged women have a better opportunity to make a change happen by not having the demands of a young family and possibly a new career (Anderson et al., 2010). Role modeling in this age group was shown to be an important part of whether a woman was going to succeed in the behavioral change necessary to live a healthier lifestyle. Higher levels of education were also found to influence self-efficacy in relation to exercise (Anderson et al., 2010). Both the exercise and dietary models demonstrate a connection between BMI and self-efficacy, and self-efficacy and behavioral change (Anderson et al., 2010).

Self-efficacy may increase the odds of a successful outcome with behavioral change. Bandura (2004) suggested that self-efficacy relies on mastery experiences, role models, encouragement, and physical and emotional states to change behavior. Whatever the motivation, the main belief is the person has the capability to make changes by one's actions (Bandura, 2004). Unless the individual believes the outcome or goal is attainable by their behavior change, "they will have little incentive to act or to persevere in the face of difficulties" (Bandura, 2004, p. 622).

Participants in the Sixth Global Conference on Health Promotion defined health promotion as the "process of enabling people to increase control over their health and its determinants, and thereby improve their health" (WHO, 2005, para. 7). Adapting healthy behaviors is a long-term commitment to improve one's health. According to Anderson and Wadden (1999), maintaining long-term weight loss is more difficult than initially losing the weight. The relationship between obesity and disease becomes a fear of those trying to maintain weight loss (Anderson et al., 2010).

However, others make the claim that even though there is an association between obesity and disease, obesity does not necessarily cause disease and that losing weight will not necessarily reduce disease risk factors (Campos, 2004; Oliver, 2006). Obesity is a social stigma, and industry promotes this myth for its gain (Campos, 2004; Oliver, 2006). Regardless of the differing opinions, most professional guidelines recommend exercise and a proper diet to prevent or delay the onset of degenerative disease in most cases.

Health promotion can be beneficial to assist in developing a diet that will work for long-term weight loss or control. This includes educating as to what constitutes a low calorie/low fat diet, describing the necessary exercise required in terms of amount and techniques, and understanding what constitutes a portion (Klein et al., 2004). This instruction serves to empower the individual to take control of healthy-lifestyle choices (Klein et al., 2004). It is important that unhealthy behaviors are identified and realistic goals are set from the beginning of the lifestyle-modification process (Klein et al., 2004). Klein et al.'s (2004) approach for successful behavioral change is to implement a self-monitoring process, learn stimulus control, and solve problems to overcome barriers to facilitating lifestyle change (Klein et al., 2004).

Green and Boyle (2000) found that in New Zealand, the general population had a low awareness of what the health promotion message was being used by the majority of health organizations. This study involved 69 self-selected participants over the age of 40. Questionnaires were mailed to the participants to determine their awareness of national health promotion messages. Overall, the group met the New Zealand national guidelines for exercise, physical activity, and diet but only half of the participants had a general concept of the health promotional message. Thus, the authors concluded these healthy lifestyles were not associated with a high awareness of public health messages, and recommend health information be more readily available (Green & Boyle, 2000). However, specific recommendations for additional health resources were not listed in this study (Green & Boyle, 2000).

According to research by Brownson et al. (2004), promotion of walking as a primary strategy is currently underutilized despite the fact that those at greatest risk of physical inactivity due to lower socioeconomic status find it easily accessible as well as acceptable. The authors used a quasi-experimental design to examine walking behavior changes in six rural intervention communities in Missouri and in six comparison communities in Arkansas and Tennessee (Brownson et al., 2004). This study did not show a community-wide change of walking rates in rural communities, but it did show increased use of the walking trail, which if sustained may lead to community-wide improved health (Brownson et al., 2004). The moderate activity of walking provides many health benefits that are similar to more vigorous methods of exercise; however, it is a more acceptable type of activity for those who are inactive (Eyler, Brownson, Bacak, & Housemann, 2003; Siegel, Brackbill, & Heath, 1995).

Health promotion involves the empowerment of the individual through knowledge and education (Tyrrell & Eyles, 1999). In order for people to willingly and voluntarily engage in healthy-lifestyle behaviors, multiple strategies are typically used concurrently (Tyrrell & Eyles, 1999). These strategies can include educating individuals about the current physical activity recommendations, increase awareness of health messages, and creating strong environments.

Physical Activity

In the American Time Use Survey, a telephone survey was conducted with 80,000 people between 2003 and 2008. The telephone survey showed only 5% of American adults (20 years and older) did some type of vigorous physical activity within a 24-hour period (Bureau of Labor Statistics [BLS], 2010). Information on the benefits of physical activity and the dangers of an unhealthy lifestyle are more available to the general population yet the findings indicate minimal participation in vigorous physical activity. The most common moderate activity according to the study was food and drink preparation, which has no or very little benefit to one's health (BLS, 2010).

As people age they tend to exercise less (Emery, Crump, & Hawkins, 2007); therefore, it is important to remove any potential barriers that may exist within the environments of the elderly. It has been found that half of those over 50 years old and two-thirds of those older than 65 are not reaching the recommended amount of physical activity (CDC, 2005; Kamimoto, Easton, Maurice, Husten, & Macera, 1999; USDHHS, 1996). Although much more research is needed to explain this relationship, environmental variables that are conducive to exercising create increased opportunity for

behavioral change to occur (Humpel, Owen, & Leslie, 2002; Saelens, Sallis, & Frank, 2003; Sallis, Bauman, & Pratt, 1998; USDHHS, 2010b).

HealthPartners developed a 10,000 Steps program which is a 21-week program that aims to change the activities of those who enroll in their insurance program. This program was designed to change behaviors by utilizing a pedometer, an online resource, and health promotional activities to motivate people to be more physically active (Speck, Hill, Pronk, Becker, & Schmitz, 2010). Success of the program is determined by monitoring the proportion of participants who remained active in the program by utilizing the tracking system on the website. Speck et al. (2010) found that only 9% of enrollees at an academic work site successfully completed the 21-week program.

In spite of the widespread knowledge of the benefits of exercising 30 minutes per day, effective methods of promoting and encouraging people to exercise are unknown (Ashley & Bartlett, 2001). Health Walks is a community-based program that emphasized brisk walking in the Thames Valley (Ashley & Bartlett, 2001). The Thames Valley Health Walks Scheme includes an itinerary of the walk and social activity as well as meetings to motivate physical activity. The program uses volunteers assisting people in the walks. The volunteers also lead a warm-up period before the walk and a period of stretching after the walk. A mailed survey was utilized to determine the motivation level of the individuals participating in the Health Walks program. This program resulted in 90% of participants planning to continue their walking regimen when asked about their future plans (Ashley & Bartlett, 2001). The authors concluded an effective method of motivating people to be more physically active may coincide with programs that include accountability and coordinated physical activity (Ashley & Bartlett, 2001).

Barriers to Physical Activity

Barriers are perceptions, attitudes, or physical and environmental obstacles that restrict someone from pursing health-enhancing physical activity. There are studies that demonstrate a correlation between barriers and physical activity as well as a relationship between barriers and physical activity behavior change over time (Emery et al., 2007; Booth, Bauman, & Owen, 2002; Kowal & Fortier, 2007).

Mosca, McGillen, and Rubenfire (1998) conducted a cross-sectional survey of 293 participants both men and women ages 37 to 70 from the Preventative Cardiology Program. The participants completed a standardized questionnaire rating priorities and listed barriers to encourage lifestyle change. The authors concluded that age was not a significant barrier to exercising; however, there was a correlation between gender and the increased dependence on physician support to make lifestyle changes (Mosca et al., 1998). Women perceived support from their physician to be an important component to overcome physical activity barriers. In women, the authors concluded that low self-esteem is the most common barrier to lifestyle modification (Mosca et al., 1998). This is a very important obstacle that must be considered when developing a positive lifestyle modification program for women. Mosca et al. (1998) drew two conclusions, addressing the issue of low self-esteem will increase the likelihood of success for women and success at overcoming barriers is limited in programs that only address knowledge and skills (Mosca et al., 1998). It is important that attempts to change physical activity be specific to the barrier it is addressing (Kowal & Fortier, 2007).

Other authors concluded that some of the most common barriers women reported were lack of time, a lack of energy, fatigue, and health problems (Kowal & Fortier,

2007). Because different studies cite different barriers, it becomes difficult, yet necessary, to adopt individualized programs based on the barriers each person experiences rather than standardized programs to move the middle-aged female population into a health-changing active lifestyle. In addition, barriers such as time, money, knowledge, skills, self-esteem, stress, and others become more common with women who are less active versus those who have implemented an active lifestyle (Booth et al., 2002; Cameron, Craig, Stephens, & Ready, 2002; King et al., 2000; Wilcox, Castro, King, Housemann, & Brownson, 2000).

Barriers are fluid over time and can vary based on age, socioeconomic status, environmental influences, and whether one is currently sedentary or physically active. This makes it difficult to target a broad range of the population in a standardized program. However, there are strategies or recommendations that could potentially address more than one barrier. A descriptive study to determine beginning and maintaining a walking program by Nies and Motyka (2006) found that 95% of the 97 participants in a walking program experienced some barriers. Barriers identified in this study were personal or professional obligations, psychosocial factors, weather, and injuries or illnesses (Nies & Motyka, 2006).

Newsletters as a Motivational Intervention

Newsletters have been used to provide information to many age groups due to their accessibility and user-friendliness (Harmon, Grim, & Gromis, 2007; Shepherd & Roker, 2005). Newsletters are an economical way to provide a person with information and support that contributes to healthy lifestyle choices (Harmon et al., 2007). Styles, format, and types of information have been studied and make a difference to the intended

reader. The demographics of the intended population need to be identified and included in the design and collection stage of information when producing health newsletters.

Newsletters can contain generic or tailored information communicated to the individual or group of readers. The generic newsletter is a form of communication that includes information that is applicable to an entire group or class, gives general information, and is not based on any kind of individual assessment (Dictionary.com, 2010; Noar, Benac, & Harris, 2007). An example of this type of communication is a newsletter sent by insurance companies on health risks associated with smoking. Newsletters that are generic in content have limited effectiveness for lasting health modifications (Richards et al., 2007).

Studies have found that tailoring the health message to the specific individual has had favorable results (Noar et al., 2007; Richards et al., 2007; Updegraff, Sherman, Luyster, & Mann, 2003). The concept of tailoring is to customize the newsletter to a specific person's health need or interest. "Tailored health promotion materials are any combination of information and behavior change strategies intended to reach one specific person, based on characteristics that are unique to that person, related to the outcome of interest, and derived from an individual assessment" (Kreuter, Farrell, Olevitch, & Brennan, 2000, p. 5). Tailoring could mean that an individual could be given information in a written format generated specifically for her characteristics and specific health problems and is goal centered (Kreuter et al., 2000). Tailored information customizes health information that may be used to meet specific healthcare goals.

Noar et al. (2007) conducted a meta-analytic literature review of 56 tailored printed health behavior change studies. Of the reviewed literature, four of the studies

were specific to newsletters with a sample size of 1,816 participants. Conclusions of this study were:

> (a) printed material and behavior change interventions were strongest when used with preventative or screening behaviors; (b) when pamphlets, newsletters, or magazines were used; (c) more than one intervention contact was made; (d) were conducted with non-U.S. participants; had shorter periods between intervention and follow-up; (e) used tailored theoretical concepts; and (f) used behavior theory that included concepts such as attitudes, stage of change, processes of change, and social support influences. (p. 689)

A metasynthesis by Richards et al. (2007) compared the results from 63 randomized clinical and controlled trials during 1996 through 2005 to evaluate effects of tailored interventions to those of a generic condition. Tailored interventions that were most commonly used in the studies were print, including letters, messages, feedback, and other materials (Richards et al., 2007). Strong support of tailored interventions was found in 49 studies over generic conditions on one or more of the main outcomes measured (Richards et al., 2007). However, the authors note that it is difficult to draw specific conclusions from the comparisons of tailored and generic conditions based on the variety of interventions used in generic condition studies (Richards et al., 2007).

Peardon et al. (2009) found over a 3-year period, 50 congestive heart failure (CHF) patients living in social isolation benefited from volunteer befriending and a supportive newsletter. Information of personal interest was given by the participants after the majority attended 12 quarterly CHF meetings with trained supportive personnel. This information was collected and included in supportive newsletters and then mailed to

each participant by the Heart Failure Supportive Service. The newsletter summarized the topics discussed at the meeting and addressed further questions and topics that were requested by the participants. A client survey indicated that 100% of the patients involved in this study would recommend the service and found it worthwhile (Peardon et al., 2009). This format contributed to self-management and encouraged communication between professionals and patients and supportive personnel (Buijs, Ross-Kerr, O'Brien, Cousins, & Wilson, 2003; Peardon et al., 2009).

Walker et al. (2010) mailed questionnaires to 225 women ages 50 to 69 to compare the maintenance of change in healthy dietary and physical activity over a period of 12 months following generic newsletter and newsletters tailored based on the Health Promotion Model (HPM). It was found that both the tailored and generic newsletters helped the women maintain change in healthy eating and physical activity in a 12-month period (Walker et al., 2010). The women receiving the tailored newsletter significantly increased their weekly minutes of activity by 74% compared to those women receiving the generic newsletters (Walker et al., 2010). Middle-aged women who continued to receive the tailored newsletters versus those receiving generic newsletters were more successful in maintaining changed physical behavior (Walker et al., 2010).

Theoretical Framework

The Pender's Health Promotion Model (HPM) is the theoretical framework for this study and was the foundation for several studies found in this literature review (Buijs, et al., 2003; Nies & Motyka, 2006; Walker et al., 2010). Nora J. Pender is the developer of the HPM and defines health promotion as "behavior motivated by the desire to increase the well-being and actualize human health potential" (Kozier, Erb, Berman, &

Snyder, 2004, p. 120). The Pender HPM is principally centered on two theories of health behavior: expectancy value theory and social cognitive theory (McCullagh, 2009). Expectancy value theory concludes that people will work toward goals which have value associated with them and must be achievable and have the desired result (McCullagh, 2009). Social cognitive theory is based on self-efficacy. A major component of this model is the recommendation for communities to promote health and disease prevention to those who live within them. Pender identified that nurses have a common primary concern of educating and promoting health to every individual (Kozier et al., 2004). It is through health promotion that individuals prevent health problems and deal with illness when it is necessary (Kozier et al., 2004).

Summary

The literature reviewed identified methods that may enhance lifestyle modification and barriers that keep people from meeting or reaching their healthcare goals. The studies reviewed have found that newsletters provide continued motivation to reach their goals (Buijs et al., 2003; Peardon et al., 2009; Walker et al., 2010). There are several published studies that have assessed newsletters as a motivational tool to increase physical activity; however, much of the evidence pertains to tailored newsletters (Kreuter et al., 2000; Noar et al., 2007; Updegraff et al., 2003). Pender's HPM emphasizes the need for health promotion and disease prevention within the community.

CHAPTER III

METHODOLGY

Introduction

The purpose of this study was to determine the effectiveness of the Sage*Plus* newsletter in motivating low-income, middle-aged women to adopt more active lifestyles, specifically increasing physical activity. The research questions for this study were:

1. Have the participants' exercise habits increased with reading the monthly Sage*Plus* newsletter?
2. Does reading the newsletter motivate the participants to continue working on their exercise goals?
3. When the newsletter is received, does the newsletter motivate behavior change to work on increasing physical activity or exercise?

Although there is research that has been completed on behavior modification, motivation, and newsletters, there are gaps in the literature in these areas on specific populations. This chapter discusses the design, sample, ethical considerations, instrument, data collection, data analysis, and limitations of the study.

Design

A nonexperimental, descriptive correlational design was used to guide data collection and analysis for this study which was a component of a larger project evaluating the Sage*Plus* newsletters. This method was chosen for several reasons. A nonexperimental design has no control variables. Descriptive studies are commonly used to obtain knowledge on a new research topic. Correlational research is completed to

examine relationships among variables. The combination of these three types of research in a nonexperimental, descriptive correlational study allows the researchers to examine the relationship among variables obtained from a single group. This type of study design is typically used to examine the relationships of variables that exist in a single situation and also allows researchers to identify any interrelationships between the study variables (Burns & Grove, 2009).

This allows researchers to focus on relationships among the study's variables and lead to potential hypotheses for future studies. Advantages of a nonexperimental, descriptive correlational study include the ability to establish a positive or negative correlation between two variables. The disadvantage of this type of study design is that one cannot prove that an actual cause and effect connection exists. This design was selected due to the diversity of the population and demographics of the participants that were included in the sample. The specific research variables in this study were newsletters, behavior change, and physical activity to motivate a healthier lifestyle.

Sample

The sample population was English-speaking, middle-aged women, currently enrolled in the Sage*Plus* program in the State of Minnesota for 6 to 12 months who are participating in both the steps and smart choices program. The Sage*Plus* program eligibility criteria include women ages 40 to 64 who meet low income specifications. This includes women with a monthly income of less than $2,256 with an additional $779 allowed for each family member in the household. This study excluded non-English-speaking participants in the Sage*Plus* program. The sample size in this study was 40 participants.

Ethical Considerations

Institutional Review Board (IRB) approvals were obtained from the Minnesota Department of Health (MDH) and Minnesota State University, Mankato prior to data collection (see Appendix A). Data collection was collected within 1 year of receiving IRB approval. A scripted verbal informed consent was read at the beginning of the telephone call with each potential participant in order to gain consent prior to any data collection (see Appendix B). The researcher successfully completed the web based training course "Protecting Human Research Participants" by the National Institutes of Health (NIH) Office of Extramural Research. The purpose of this training is to protect the human rights and welfare of each participant who volunteers to participate in research.

The informed consent included an introduction regarding the research and its purpose to evaluate the effectiveness of the newsletter. Participants were informed who was conducting the study and the purpose for the study. The procedure of the study was explained, and then they were asked to take part in a 10 to 15-minute telephone survey regarding their experience with the Sage*Plus* newsletter. Participants were informed that the survey was completely voluntary and no portion of the conversation would be recorded. The participants were assured that their choice to participate in this study would not affect their participation in the Sage*Plus* program.

Participants were assured that records of this study were kept private by assigning an alphanumeric code to each participant in the study to maintain confidentiality. Information shared with MDH did not have their name in it. MDH was not made aware of who participated in the study. Any information in any report or paper did not include

any information that would make it possible to identify them. Research records were kept on a password protected computer and only researchers for the study had access to the records. Contact information was given to the participants including names and telephone numbers at Minnesota State University and the University's IRB. This information included Dr. Diane Witt, thesis chairperson (507) 389-1725, and Dr. Terrance Flaherty, MSU IRB Administrator (507) 389-2321.

Upon completion of the study the alphanumeric list will be saved for 2 years by the primary investigator in their office at MSU on a data disc. After 2 years the alphanumeric list will be destroyed. Completed questionnaires were identified with the alphanumeric code. The questionnaires were stored at the researcher's home until they were given to the principle investigator, to be stored in their office at MSU; this office is locked when it is vacant.

Participants who agreed to participate were free to withdraw any time from the study. The name and contact information was given for the MSU IRB chairperson should they have any ethical concerns regarding the study or how it was carried out. Time for questions was allowed prior to verbal consent to participate in this research study. Verbal informed consent was obtained prior to data collection.

Instrument

This study used a modified version of a questionnaire that was initially developed for the Minnesota Women's Healthy Heart Program (MWHHP). The reliability and validity of the MWHHP and the modified version have not been established. The modified questionnaire contains 19 multiple choice questions and one open-ended question that were used to meet the objectives of the study (see Appendix C). Questions

were formatted to enable gathering information to evaluate the effectiveness, utilization, and motivational quality of the Sage*Plus* newsletter. The questions focused on which part of the newsletter they liked best, if they felt the newsletter motivated them to make healthy changes, and if the participants thought the newsletter was clearly written.

Demographic data including date of birth, race, highest educational level completed, baseline activity level, and intake of servings of fruits and vegetables per day were obtained from MDH Sage*Plus* enrollment forms in the MDH database (see Appendix D).

Data Collection Procedure

This study was part of a larger Sage*Plus* newsletter evaluation project. A list of potential participants who are currently enrolled in both the Sage*Plus* Steps and Veggies and Fruit Programs was obtained from the MDH. Telephone calls were made by researchers evaluating the Sage*Plus* newsletter program to potential participants.

For randomization purposes every third person on the list of potential participants was called. When the list of participants was exhausted before reaching the minimum sample size, the telephone calls begin at the first uncalled name and then continue calling every third person until the minimum sample size was attained. When a telephone call was unanswered, the name was marked as unanswered with the time and date recorded and a second telephone call was attempted at another time. If there was no answer on the second attempt, the person's name was crossed off the list and marked as unanswered. When a telephone call was refused or disconnected, the researcher crossed this name off the list and continued with the every third person pattern. Every eligible participant on

the entire list was called at least two times. Calls were made over a two-day period from morning till late evening until the list of potential participants was exhausted.

At the beginning of the telephone call, the researcher read the informed consent to the participant. Upon their verbal informed consent agreement to participate, the researcher read the Sage*Plus* questionnaire to the participant and marked their responses. Each telephone call to the consenting participant required between 10 to 15 minutes.

Data Analysis

Descriptive and correlation statistics were calculated using Statistical Package for the Social Sciences (SPSS) version 12. The descriptive statistics included frequencies and means of demographic data and questionnaire responses. The demographic data provided by the MDH from the participants Sage*Plus* enrollment forms were used to develop a profile of the participants. The questionnaire responses were used to determine the newsletter's impact on the participants' motivation and physical activity. The participant's questionnaire and demographic data responses were entered into an Excel spreadsheet. A Kendall Tau correlational coefficient was calculated to determine if relationships exist between age, body mass index (BMI), race, education, and physical activity at the time of enrollment in the Sage*Plus* program and the time of data collection. This method is commonly used to establish whether two variables may be regarded as statistically dependent (Burns & Grove, 2009).

Limitations

1. Results are not applicable to populations other than those studied because the study is completed on a specific group.

2. There are never ideal exercise patterns, and there is always room for improvement.
3. Individual biological patterns vary with each patient so each intervention does not affect each patient similarly.

Summary

In this study, an evaluation of the effectiveness of the Sage*Plus* newsletter in motivating low-income, middle-aged women to increase physical activity was performed. The data was collected through telephone surveys with qualifying Sage*Plus* program enrollees. Calls were made using a modified questionnaire containing 19 multiple choice and one open-ended question until the list of potential participants was exhausted. Forty English speaking participants were contacted and agreed to participate in the telephone surveyed. The descriptive statistics included frequencies and means of demographic data and questionnaire responses. The correlation coefficient was calculated to determine if relationships existed between age, BMI, race, education, and physical activity at the time of enrollment in the Sage*Plus* program and the time of data collection.

CHAPTER IV

RESULTS OF ANALYSIS

The purpose of this study was to determine the effectiveness of the Sage*Plus* newsletter in motivating low-income, middle-aged women to engage in regular physical activity. This chapter describes the sample of the Sage*Plus* participants, data analysis process, results, and summary of research findings.

Description of Population

The MDH provided 263 names of women enrolled in the Sage*Plus* program Steps and Fruits and Veggies Programs. Seventy three participants were eliminated from the pool of potential participants because they were non-English speaking. The sample population of this study was 190 English speaking, middle-aged women, currently enrolled in the Sage*Plus* Program in the State of Minnesota for at least 6 months and not greater than 12 months and are participating in both the Steps and Fruits and Veggies Program. Disconnected telephone numbers resulted in the elimination of 25 potential subjects. Telephone numbers called twice with no answer before they were eliminated were 111. Nine participants declined or were not able to take part at that specific time and one potential participant denied being enrolled in the Sage*Plus* program.

Forty-four women who are currently enrolled in the Sage*Plus* program agreed to participate in the study. Three of these women were excluded because they were not receiving the newsletter and one was excluded because they were English speaking and receiving the newsletter in Spanish. Participants were from twenty-six cities representing

thirteen counties with the majority (32) living in the greater 7 county Twin City Metro Area.

The mean age of the participants was 55 with a range from 43 to 64 years of age. The mean income was $1,492 with a range of $111 to $4,160 per month**.** The income on average supported one person 57.5% of the time and two people 37.5% of the time. The sample was comprised of twenty-eight (71.8%) Caucasian participants, six (15.4%) African American, four (10.3%) Native American, and one (2.6%) Hispanic woman. One participant did not list their race. The sample was not congruent with the racial demographics in the state of Minnesota. The 2009 U.S. Census Bureau reported the following percentage of populations residing in Minnesota: Caucasians 88.6%, African Americans 4.7%, Native Americans 1.3% and Hispanic 4.3% (U.S. Census Bureau, 2010). Both Caucasians and Hispanic women are represented less than in the general population in Minnesota. The African American and Native American are represented at a greater percentage in the Sage*Plus* sample than that of the general population Minnesota.

The BMI ranged from 19.60 to 47.60 with only six participants (15.8%) with a BMI in the normal range of <25. Ten participants (34.2%) were overweight with a BMI between 25 and 29.9. The number of obese participants made up half of the surveyed sample, with a BMI >30. It is estimated in the state of Minnesota that 36.8% of people are neither overweight nor obese, 37.9% are overweight and those that are categorized as obese make up 25.4% (CDC, 2009). The high obesity rate among participants was double the Minnesota overweight rate and obesity rate of 24.6% reported in 2009 (CDC, 2011).

The education level among the 40 sample participants revealed one (2.7%) with less than a 9th grade education level, two (5.0%) participants with a 9th-11th grade education level, those that had a high-school diploma or equivalent nine (24.3%). Further educational demographics showed that thirteen participants (35.1%) had some college and two (5.4%) had a two year and 10 (27.0%) participants had a four year degree. Those in the sample with an overall less than a high school education are comparable with the Minnesota 2009 U.S. Census Bureau report of people age 25 or above, 7.7% and 8.8% respectively (U.S. Census Bureau, 2010). The Sage*Plus* sample having a minimum of a high school diploma or equivalent was 92.3% and the general population in Minnesota with a minimum of a high school diploma or equivalent is 91.2%. Those participants with a high school education level only were 24.3% versus 28.1% for the general population in Minnesota. The category of some college in this sample accounted for 35.1% versus 22.3% of people in Minnesota and those with a 2 year degree were 5.4% versus 9.5%. Twenty-seven percent of women in this study have a bachelor's degree versus 21.2% of people in Minnesota according to the 2009 U.S. Census Bureau report which was slightly higher (U.S. Census Bureau, 2010).

The participants identified many reasons for participating in the Sage*Plus* Program. The most frequent identified reason for participating was the free heart screening which was reported by eighteen participants, (45%), while 11 (27.5%) participants reported other reasons for example "the free mammogram," "my doctor said it's a good program," and "I needed to have tests done" were the most common responses. Participants enrolled because they were worried about their heart health were eight (20%) and a friend or relative recommended it to three (7.5%) participants.

Data Analysis

Data was analyzed using SPSS software version 12. The research questions and results for each question are as follows.

Research Question One

Research question one was: Have the participants exercise habits increased with reading the monthly Sage*Plus* newsletter? Moderate activity was described as activity that did not include walking and made you breathe somewhat harder than normal. Table 1 presents the reported moderate physical activity when enrolling in the Sage*Plus* program compared to what was reported on the survey. No change was found in the number of days of moderate activity with 8 (20%) of the participants. Additionally, 30% or 12 participants increased the number of days they participated in moderate activity. Twenty or 50% actually decreased the number of days they had moderate activity.

Table 1

Change in the Number of Days of Moderate Physical Activity

Valid	Frequency	Percent	Valid %	Cumulative %
-7.00	1	2.5	2.5	2.5
-5.00	2	5.0	5.0	7.5
-4.00	3	7.5	7.5	15.0
-3.00	2	5.0	5.0	20.0
-2.00	6	15.0	15.0	35.0
-1.00	6	15.0	15.0	50.0
.00	8	20.0	20.0	70.0
1.00	3	7.5	7.5	77.5
2.00	2	5.0	5.0	82.5
3.00	6	15.0	15.0	97.5
5.00	1	2.5	2.5	100.0
Total	40	100.0	100.0	

The change in the average number of minutes of moderate activity showed that twelve (30.0%) participants stayed the same, 20 (50%) participants increased their minutes of activity, and eight (20%) participants decreased their minutes of moderate activity.

Table 2 presents that of the 20 participants who increased their moderate activity; eleven had an increase of 30 minutes. Three people increased their moderate activity minutes 45, 60, 90 minutes respectively.

Table 2

Change in the Number of Minutes of Moderate Physical Activity

Valid	Frequency	Percent	Valid %	Cumulative %
-45	1	2.5	2.5	2.5
-30	5	12.5	12.5	15.0
-5	2	5.0	5.0	20.0
0	12	30.0	30.0	50.0
15	1	2.5	2.5	52.5
20	2	5.0	5.0	57.5
30	11	27.5	27.5	85.0
35	1	2.5	2.5	87.5
40	2	5.0	5.0	92.5
45	1	2.5	2.5	95.0
60	1	2.5	2.5	97.5
90	1	2.5	2.5	100.0
Total	40	100.0	100.0	

When comparing the change of days per week the participants walked at least 10 minutes at a time, 12 (30%) had no change, and 9 (22.5%) increased the number of days walking per week.

Table 3 presents nineteen or 47.5% actually decreased the number of days walked per week. Seven participants decreased their days per week walked 10 minutes by 1 day and six participants decreased by 2 days, the remaining participants decrease ranged from 3 to 7 days.

Table 3

Change in the Number of Days Per Week Walked 10 Minutes at a Time

Valid	Frequency	Percent	Valid %	Cumulative %
-7.00	1	2.5	2.5	2.5
-5.00	1	2.5	2.5	5.0
-4.00	2	5.0	5.0	10.0
-3.00	2	5.0	5.0	15.0
-2.00	6	15.0	15.0	30.0
-1.00	7	17.5	17.5	47.5
.00	12	30.0	30.0	77.5
1.00	1	2.5	2.5	80.0
2.00	3	7.5	7.5	87.5
3.00	3	7.5	7.5	95.0
4.00	1	2.5	2.5	97.5
7.00	1	2.5	2.5	100.0
Total	40	100.0	100.0	

Table 4 presents the change in the average number of minutes walked which showed 7 or 17.5 % stayed the same, 6 (15%) decreased, and the rest of the participants 27 (67.5%) increased. Twelve (30%) of the participants added 30 minutes of walking time from when they had started the Sage*Plus* program.

Table 4

Change in the Average Number of Minutes Walked

Valid	Frequency	Percent	Valid %	Cumulative %
-30	2	5.0	5.0	5.0
-15	1	2.5	2.5	7.5
-10	2	5.0	5.0	12.5
-8	1	2.5	2.5	15.0
0	7	17.5	17.5	32.5
10	6	15.0	15.0	47.5
15	4	10.0	10.0	57.5
20	3	7.5	7.5	65.0
30	12	30.0	30.0	95.0
40	1	2.5	2.5	97.5
60	1	2.5	2.5	100.0
Total	40	100.0	100.0	

Research Question Two

Research question two was: Does reading the newsletter motivate the participants to continue working on their exercise goals?

When the participants were asked how much thought they have done about making healthy changes 57.5% gave the response “much thought, some change,” and 27.5% responded “much thought, much change.” Participants rating their health “somewhat better” or “much better” since their enrollment in the SagePlus program was 77.5% while only 2.5 percent rated their health much worse (see Appendix E).

Reading the newsletter improved the majority of the participants exercise habits. "Somewhat" and "quite a bit" were the answers given by 31 participants that total 77.5% (see Table 5). The remaining participants did not think reading the newsletter improved their exercise habits with 4 answering "not at all" and 5 participants answering "not very much."

Table 5

Has Reading Newsletter Improved Your Exercise Habits

Valid	Frequency	Percent	Valid %	Cumulative %
Not at all	4	10.0	10.0	10.0
Not very much	5	12.5	12.5	22.5
Somewhat	24	60.0	60.0	82.5
Quite a bit	7	17.5	17.5	100.0
Total	40	100.0	100.0	

The data showed reading the newsletter motivated 82.5% of the participants to work towards their exercise goals (see Table 6). Six participants said reading the newsletter didn't motivate them very much to work on exercise goals and one said not at all. The participant's specific goals identified at the initial Sage*Plus* appointment is not known only that 33 participants identified that the newsletter motivated them to work on the exercise goals they made at their Sage*Plus* lifestyle counseling appointment.

Table 6

Does Reading Newsletter Motivate You to Work on Exercise Goals

Valid	Frequency	Percent	Valid %	Cumulative %
Not at all	1	2.5	2.5	2.5
Not very much	6	15.0	15.0	17.5
Somewhat	22	55.0	55.0	72.5
Quite a bit	11	27.5	27.5	100.0
Total	40	100.0	100.0	

Research Question Three

Research question three was: When the newsletter is received, does the newsletter motivate behavior change to work on increasing physical activity or exercise? A more general question was asked about receiving the newsletter and its ability to motivate the participant to work on their physical activity goals set in the Sage*Plus* program. The majority of participants 36 (90%) reported it either "somewhat" or "quite a bit" motivated them to work on their goals, three (7.5%) said "not very much," and one (2.5%) reported not at all (see Table 7).

Table 7

Does Receiving Newsletter Motivate You to Work on Goals

Valid	Frequency	Percent	Valid %	Cumulative %
Not at all	1	2.5	2.5	2.5
Not very much	3	7.5	7.5	10.0
Somewhat	23	57.5	57.5	67.5
Quite a bit	13	32.5	32.5	100.0
Total	40	100.0	100.0	

In response to the question if the participants thought that the newsletter impacted their physical activity, thirty participants (75%) said that it had and 10 participants (25%) said it had not (see Table 8). Overall receiving the newsletter improved and impacted Sage*Plus* participant's motivation to work towards exercise goals and physical activity level.

Table 8

Has Receiving Newsletter Impacted Physical Activity Level

Valid	Frequency	Percent	Valid %	Cumulative %
No	10	25.0	25.0	25.0
Yes	30	75.0	75.0	100.0
Total	40	100.0	100.0	

Using Kendall's Tau correlation coefficient there were no statistically significant correlations between the change in number of days of moderate activity or minutes of moderate activity level and BMI (r = -.109, r = -.103), monthly income (r = .015, r = -.027), or educational level (r = -.185, r = -.199). No significant correlations were found between change in the number of days per week walked at least 10 minutes or change in number of minutes walked with BMI (r = .022, r = -1.25), monthly income (r =-.038, r = -.016), or educational level (r = .043, r = -.063).

No statistical significant correlations were found regarding change in number of days of moderate activity or number of days per week walking at least 10 minutes at a time and improved exercise habits with reading the newsletter (r = .128, r = .172).

Summary

A telephone survey was conducted with participants in the Sage*Plus* program to evaluate the effectiveness of the Sage*Plus* newsletter in motivating physical activity changes. The Sage*Plus* participant sample size for this study included forty English speaking, middle-aged women, primarily white, single, and educated living in the Twin City Metro Area. Data was analyzed using the SPSS software version 12. Minutes of walking increased for 67.5% of the sample and twenty participants (50%) increased in the number of minutes of moderate activity. However, results showed a decrease in their days of moderate activity or days of walking activity. Participants that received and read the newsletter identified that they were motivated to work on exercise habits and improve exercise goals. Seventy-five percent of the participants receiving the newsletter thought the newsletter impacted their physical activity level. Overall, the participants reading and receiving the SagePlus newsletter were motivated to continue to work on their

activity/exercise habits and goals, however less than half had any change in physical activity with the exception of change in moderate activity minutes and walking minutes.

CHAPTER V

DISCUSSIONS AND CONCLUSIONS

The purpose of this study was to determine the effectiveness of the Sage*Plus* newsletter in motivating low-income, middle-aged women to adopt more active lifestyles, specifically increasing physical activity. The research questions for this study were: 1) Have the participants' exercise habits increased with reading the monthly Sage*Plus* newsletter? 2) Does reading the newsletter motivate the participants to continue working on their exercise goals? 3) When the newsletter is received, does the newsletter motivate behavior change to work on increasing physical activity or exercise? This chapter summarizes the background literature, methodology and results of the study. Discussion and conclusions, scope and limitations and implications for practice and research are included in this chapter.

Research Questions

1. Have the participants exercise habits increased with reading the monthly Sage*Plus* newsletter? Twenty-seven (67.5%) participants increased the amount of minutes walked since enrolling in the Sage*Plus* program. Twelve (30%) of those participants added 30 minutes of walking time from when they had started the Sage*Plus* program. The activity of walking provides many health benefits that are similar to as more vigorous methods of exercise; however, it is a more acceptable type of activity for those who are inactive (Eyler, Brownson, Bacak, & Housemann, 2003; Siegel, Brackbill, & Heath,

1995). Further, an increase in minutes of moderate activity was found in 50% of the participants in the sample.

The majority of participants did not increase their days of moderate activity or days of walking activity since enrolling in the Sage*Plus* program. According to the National Institutes of Health, most people find it very difficult to make permanent lifelong changes to their eating habits and physical activity (Klein et al., 2004). Change in moderate and physical activity at the time of enrollment in the SagePlus Program when compared to day of survey showed that about half of the participants stayed the same or decreased in days and minutes of moderate activity.

One possibility for these results could be that the participants are exercising longer on the days they are engaging in physical activity. They may try to fit more exercise into fewer days. It is important that attempts to change physical activity be specific to the barrier it is addressing (Kowal & Fortier, 2007). The location and time of the year may impact the participants and have an effect on why they have fewer days of exercise but increased number of minutes. Those participants that stayed the same may be continuing their current exercise pattern but just haven't increased their days or minutes of physical activity. The participants that decreased still may be exercising just not as much as at the time of enrollment in the Sage*Plus* Program. According to research by Brownson et al. (2004), promotion of walking as a primary strategy is currently underutilized despite the fact that

those at greatest risk of physical inactivity due to lower socioeconomic status find it easily accessible as well as acceptable.

More than half of the participants (23) have a BMI over 30, nine are overweight and only 6 participants are considered in the normal range. Although no correlation between BMI, exercise and reading the newsletters was found these women say the newsletter motivates them to work on their goals. Working on goals may include other components other than physical activity. Obesity risk and lack of physical activity are correlated with time spent in sedentary behaviors (Dunton, Berrigan, Ballard-Barbash, Graubard, & Atienza, 2009).

2. Does reading the newsletter motivate the participants to continue working on their exercise goals? Overall reading the newsletter motivated the Sage*Plus* participants to continue working on their exercise habits and physical activity level. This study found that reading the Sage*Plus* newsletter motivates the majority of participants, (77.5%) to improve on overall their exercise habits. Specifically pertaining to exercise goals, 82.5% of the participants said reading the newsletter helped them work toward their set goals. Studies have found that tailoring the health message to the specific individual has had favorable results (Noar et al., 2007; Richards et al., 2007; Updegraff, Sherman, Luyster, & Mann, 2003). This finding may indicate that the participants reading the SagePlus newsletter are reflecting on changes they need to be working towards in order to increase exercise habits and goals. Reading the general content and exercise section of the newsletter provides

continued motivation and direction in working towards set goals. Some participants may be saying what they want the researcher to hear or what they don't want to admit on the phone. Possibly some participants have seen results from exercising and may attribute these to reading the newsletter even if the results have been minimal they attribute it to being successful.

3. When the newsletter is received, does the newsletter motivate behavior change to work on increasing physical activity or exercise? Receiving the Sage*Plus* newsletter motivated the majority of participants, 90% to improve on general health goals. However, half of the participants reported a decrease in days of moderate activity or days of walking. Behavior change interventions were strongest when used with preventative or screening behaviors and when newsletters and other printed material were used (Noar et al., 2007). Motivation to work on goals after receiving the newsletter included 90% of the sampled population but some of the participants (52.5%) aren't reading the entire newsletter which could mean that just receiving the newsletter acts as an effective motivator to work on or increase physical activity.

A major component of the Health Promotion Model is the recommendation for communities to promote health and disease prevention to those who live within them. Pender identified that nurses have a common primary concern of educating and promoting health to every individual (Kozier et al., 2004). It is through health promotion that individuals prevent health problems and deal with illness when it is necessary (Kozier et al.,

2004). The Sage*Plus* newsletter serves as an intervention and provides information to encourage healthy lifestyle choices to this population.

No correlation existed between income, education, and BMI with activity levels. The participants identified that reading the newsletter motivates them to make lifestyle changes yet 30% have not made any changes and 20% have actually decreased their physical activity specifically minutes of moderate activity. This indicates there are unknown factors interfering with behavior change in these women. This finding is significant from a clinical perspective, because although the women are motivated to work towards their activity goals they are not making progress towards them and in many cases are worsening. Healthcare providers may need to assist in identifying individual barriers and modify the physical activity goal appropriately. It is important that attempts to change physical activity be specific to the barrier it is addressing (Kowal & Fortier, 2007).

Scope and Limitations

Several limitations were found with this study. First, the results are not applicable to populations other than those surveyed because the study was on a specific group. The sample size was small and further limited to those who were receiving the newsletters.

It is not possible to know whether the information received from the participants is true because there is no way of verifying the veracity of the statements given at the time of collection. The time of the year was a limitation to this study based on some of the participants stating they exercise more at other times of the year versus winter months.

Although the focus is on the newsletter, it is not likely that all motivation for activity change can be attributed to it. Although the participants were instructed to answer the questions in relation to receiving and reading the SagePlus newsletter their answers may reflect other components of the Sage*Plus* program or other factors in their personal lives that contribute to healthy lifestyle modifications.

Implications for Practice

Health promotion in the form of a newsletter can encourage self-awareness and direct behaviors to achieve health outcomes such as exercise, dietary changes, weight control as well as a wide variety of other topics.

The newsletter as an intervention in this study creates awareness of its benefits and serves as a motivator to increase physical activity. Providers may positively impact individuals to promote healthy lifestyles, specifically physical activity with monthly educational material such as newsletters.

Simply motivating a person to make changes in their health does not equate with change. People can be very motivated to make changes without actual changes in their behavior. The barriers they experience may outweigh their motivation. Any specific individual barriers must be addressed for behavior change to occur.

Implications for Research

Since the present study was only focused on middle aged, low income, and English-speaking women it would be useful for further research to examine and compare the various ages, incomes, and cultural groups. Expanding the length of time the sample has been participating in the Sage*Plus* Program to include second and third year enrollees may have provided a more accurate reflection of a person's attainment of goals. This

could include the collection of the BMI at subsequent visits in order to gauge success of activity. Further research could also investigate if physical activity would increase if data collection was completed during different seasons throughout the year.

Additionally, research should be done on why the majority of women reported the newsletter motivated them to work on exercise goals but change in moderate and walking days per week reflected that at least half or more of the participants stayed the same or decreased.

Summary

In the present study, the participants reading and receiving the SagePlus newsletter were motivated to continue to work on their activity/exercise habits and goals. An increase in physical activity was found only in minutes of moderate physical activity and minutes of walking activity. Further research would be useful in discovering why the newsletter provided motivation for behavior change, but the change in physical activity did not reflect this. The newsletter as an intervention in this study creates awareness of its benefit and serves as a reminder and motivator to work on physical activity habits and goals. Newsletters are an effective way to help motivate people to be physically active however individual barriers need to be addressed to help people take action towards behavior change.

REFERENCES

REFERENCES

Acree, L., Longfors, J., Fjeldstad, A., Fjeldstad, C., Schank, B., Nickel, K., …Gardner, A. (2006). Physical activity is related to quality of life in older adults. *Health & Quality of Life Outcomes, 4*(37), 1-6.

Anderson, D., & Wadden, T. (1999). Treating the obese patient: Suggestions for primary care practice. *Archives Family Medicine, 8*(28), 156-167.

Anderson, R., Anderson, D., & Hurst, C. (2010). Modeling factors that influence exercise and dietary change among midlife Australian women: Results from the Healthy Aging of Women Study. *Maturitas, 67*(6), 151-158.

Ashley, A., & Bartlett, H. (2001). An evaluation of a walking scheme based in primary care: The participants' perspective. *Primary Health Care Research & Development (SAGE Publications, Ltd.), 2*(2), 98-106.

Bandura, A. (2004). Swimming against the mainstream: The early years from chilly tributary to transformative mainstream. *Behaviour Research and Therapy, 42*(28), 613-630.

Booth, M., Bauman, A., & Owen, N. (2002). Perceived barriers to physical activity among older Australians. *Journal of Aging and Physical Activity, 10*(28), 271-280.

Brownson, R., Baker, E., Boyd, R., Caito, N., Duggan, K., Housemann, R., …Walton, D. (2004). A community-based approach to promoting walking in rural areas. *American Journal of Preventive Medicine, 27*(1), 28-34.

Buijs, R., Ross-Kerr, J., O'Brien Cousins, S., & Wilson, D. (2003). Promoting participation: Evaluation of a health promotion program for low income seniors. *Journal of Community Health Nursing, 20*(2), 93-107.

Bureau of Labor Statistics. (2010). American Time Use Survey. Retrieved from: http://www.bls.gov/news.release/atus.nr0.htm

Burns, N., & Grove, S. K. (2005). *The Practice of nursing research: Conduct, critique, and utilization* (5th ed.). St. Louis, MO: Elsevier.

Cameron, C., Craig, C., Stephens, T., & Ready, T. (2002). Increasing physical activity: Supporting an active workplace. Ottawa, Ontario: Canadian Fitness and Lifestyle Research Institute. Retrieved from: www.cflri.ca/pdf/e/2001pam.pdf

Campos, P. (2004). The obesity myth: Why our obsession with weight is hazardous to our health. New York, NY: Penguin.

Centers for Disease Control and Prevention. (2005). *Behavioral Risk Factor Surveillance System Survey Data*. Atlanta, GA: USDHHS, CDC.

Centers for Disease Control and Prevention. (2010a). How much physical activity do adults need? Retrieved from: http://www.cdc.gov/physicalactivity/everyone/guidelines/adults.html

Centers for Disease Control and Prevention. (2010b). Press Release: Number of Americans with Diabetes Projected to Double or Triple by 2050. Retrieved from: http://www.cdc.gov/media/pressrel/2010/r101022.html

Centers for Disease Control and Prevention. (2010c). WISEWOMAN. Retrieved from http://www.cdc.gov/wisewoman/

Centers for Disease Control and Prevention. (2011). Overweight and Obesity: Minnesota. Retrieved from http://www.cdc.gov/obesity/stateprograms/fundedstates/minnesota.html

Craig, C., Cameron, C., Russell, S., & Beaulieu, A. (2001). Increasing physical activity: Creating a supportive recreation and sport system. Ottawa, Ontario: Canadian Fitness and Lifestyle Research Institute.

Dictionary.com. (2010). Newsletter. Retrieved from: http://dictionary.reference.com/browse/newsletter?fromAsk=true&o=100074

Djousse, L., Driver, J., & Gaziano, M. (2009). Relation between modifiable lifestyle factors and lifetime risk of heart failure. *Journal of the American Medical Association, 302*(4), 394-400.

Dunton, G. F., Berrigan, D. D., Ballard-Barbash, R. R., Graubard, B. B., & Atienza, A. A. (2009). Joint associations of physical activity and sedentary behaviors with body mass index: results from a time use survey of US adults. *International Journal of Obesity*, 33(12), 1427-1436.

Emery, J., Crump, C., & Hawkins, M. (2007). Formative evaluation of AARP's active for life campaign to improve walking and bicycling environments in two cites. *Society for Public Health, 8*(4), 403-414.

Eyler, A., Brownson, R. C., Bacak, S. J., & Housemann, R. A. (2003). The epidemiology of walking for physical activity in the United States. *Medical Science Sports Exercise, 35*, 1529-1536.

Eyler, A., Matson-Koffman, D., Vest, J., Evenson, K., Sanderson, B., Thompson, J., …Young, D. (2002). Environmental, policy, and cultural factors related to physical activity in a diverse sample of women: The women's cardiovascular health network project-summary and discussion. *Women and Health, 36*(28), 123-134.

Fisher, K., Li, F., Michael, Y., & Cleveland, M. (2004). Neighborhood-level influences on physical activity among older adults: A multilevel analysis. *Journal of Aging and Physical Activity, 12*(28), 45-63.

Foreman, J., Stampfer, M., & Curhan, G. (2009). Diet and lifestyle risk factors associated with incident hypertension in women. *The Journal of the American Medical Association, 302*(4), 401-411.

Green, J., & Boyle, F. (2000). Lack of awareness of public health promotion messages among a group of adult New Zealanders who meet national guidelines for food intake and physical activity. *Asia Pacific Journal of Clinical Nutrition, 10*(1), 17-20.

Harmon, A., Grim, B., & Gromis, J. (2007). Improving nutrition education newsletters for the food stamp eligible audience. *Health Promotion Practice, 8*(4), 394-402.

Healthy People 2020. (2010). U.S. Department of Health and Human Services. Retrieved from: http://www.healthypeople.gov/2020/topicsobjectives2020/pdfs/HP2020objectives.pdf

Humpel, N., Owen, N., & Leslie, E. (2002). Environmental factors associated with adults' participation in physical activity: A review. *American Journal of Preventive Medicine, 22*(3), 188-199.

Kamimoto, L. A., Easton, A. N., Maurice, E., Husten, C. G., & Macera, C. A. (1999). Surveillance for five health risks among older adults-United States, 1993-1997. In CDC Surveillance Summaries. *Morbidity and Mortality Weekly Report, 48*(SS-8), 89-130.

King, A., Castro, C., Wilcox, S., Eyler, A., Sallis, J., & Brownson, R. (2000). Personal and environmental factors associated with physical inactivity among different racial-ethnic groups of U.S. middle-aged and older-aged women. *Health Psychology, 19*(28), 354-364.

Klein, S., Sheard, N., Pi-Sunyer, X., Daly, A., Wylie-Rosett, J., Kulkarni, K., & Clark, N. (2004). Weight management through lifestyle modification for the prevention and management of Type 2 diabetes: Rationale and strategies. *Diabetes Care, 27*(8), 2067-2073.

Kowal, J., & Fortier, M. (2007). Physical activity behavior change in middle-aged and older women: The role of barriers and of environmental characteristics. *Journal of Behavioral Medicine, 30*(3), 233-242.

Kozier, B., Erb, G., Berman, A., & Snyder, S. (2004). *Fundamentals of nursing: Concepts, process, and practice* (7th ed.). Quezon City, Philippines: Pearson Education South Asia.

Kreuter, M., Farrell, D., Olevitch, L., & Brennan, L. (2000). *Tailoring health messages: Customizing communication with computer technology.* Manwah, NJ: Lawrence Erlbaum Associates, Inc.

McCullagh, M. C. (2009). Health promotion. In S. Peterson & T. Bredow (Eds.), *Middle range theories: Application to nursing research* (2nd ed., pp. 290-303). Philadelphia, PA: Wolters Kluwer/ Lippincott Williams & Wilkins.

Minnesota Department of Health: Sage Plus website. (2009). Retrieved from http://www.health.state.mn.us/divs/hpcd/ccs/sageplus/sageplus.htm

Mosca, L., McGillen, C., & Rubenfire, M. (1998). Gender differences in barriers to lifestyle change for cardiovascular disease prevention. *Journal of Women's Health, 7*(6), 711.

Nies, M., & Motyka, C. (2006). Factors contributing to women's ability to maintain a walking program. *Journal of Holistic Nursing, 24*(1), 7-14.

Noar, S., Benac, C., & Harris, M. (2007). Does Tailoring Matter? Meta-Analytic Review of Tailored Print Health Behavior Change Interventions. *Psychological Bulletin, 133*(4), 673-693.

Oliver, J. (2006). *Fat politics: The real story behind America's obesity epidemic.* New York, NY: Oxford University Press.

Peardon, L., Yellowlees, D., Pratt, R., Reid, J., O'Donnell, M., Ness, A., …Denvir, M. (2009). The use of innovative methods designed to relieve social isolation in patients with chronic heart failure; volunteer befriending, forums and a newsletter. *European Journal of Cardiovascular Nursing, 9*(3), 181-187.

Richards, K., Enderlin, C., Beck, C., McSweeney, J., Jones, T., & Roberson, P. (2007). Tailored biobehavioral interventions: A literature review and synthesis. *Research and Theory for Nursing Practice, 21*(4), 271-285.

Saelens, B. E., Sallis, J. F., & Frank, L. D. (2003). Environmental correlates of walking and cycling: Findings from the transportation, urban design, and planning literature. *Annals of Behavioral Medicine, 25*(2), 80-91.

Sallis, J. F., Bauman, A., & Pratt, M. (1998). Environmental and policy interventions to promote physical activity. *American Journal of Preventive Medicine, 15*(4), 379-397.

Shepherd, J., & Roker, D. (2005). The parenting of young people: Using newsletters to provide information and support. *Children & Society*, *19*(4), 264-277. doi:10.1002/CHI.832.

Siegel, P., Brackbill, R., & Heath, G. (1995). The epidemiology of walking for exercise: Implication for promoting activity among sedentary groups. *American Journal of Public Health, 85*, 706-710.

Speck, R., Hill, R., Pronk, N., Becker, M. K., & Schmitz, K. (2010). Assessment and outcomes of HealthPartners 10,000 Steps Program in an academic work site. *Health Promotion Practice, 11*(5), 741-750.

Tyrrell, A., & Eyles, P. (1999). Health promotion in elementary school: A newsletter as one strategy. *Journal of School Health*, *69*(8), 341-343.

U.S. Census Bureau. (2010). State and county quick facts: Minnesota. Retrieved from: http://quickfacts.census.gov/qfd/states/27000.html

U.S. Department of Health and Human Services. (1996). *Physical activity and health-a report of the Surgeon General Executive Summary.* Atlanta, GA: USDHHS, CDC, National Center for Chronic Disease Prevention and Health Promotion.

U.S. Department of Health and Human Services. (2010a). Healthy People 2020: Physical activity. Retrieved from: http://healthypeople.gov/2020/topicsobjectives2020/overview.aspx?topicid=33

U.S. Department of Health and Human Services. (2010b). The Surgeon General's Vision for a Healthy and Fit Nation 2010. Retrieved from: http://www.surgeongeneral.gov/library/obesityvision/obesityvision2010.pdf

United States Department of Agriculture (USDA) and United States Department of Health and Human Services (HHS). Dietary guidelines for Americans, 5th ed. USDA; 2000. Home and Garden Bulletin No. 232. p. 10-12.

Updegraff, J., Sherman, D., Luyster, F., & Mann, T. (2003). The effects of message quality and congruency on perceptions of tailored health communications. *Journal of Experimental Social Psychology, 43*(2), 249-257.

Walker, S., Pullen, C., Boeckner, L., Hageman, P., Hertzog, M., Oberdorfer, M., & Rutledge, K. (2009). Clinical trial of tailored activity and eating newsletters with older rural women. *Nursing Research, 58*(2), 74-85.

Walker, S., Pullen, C., Boeckner, L., Hageman, P., Hertzog, M., Oberdorfer, M., & Rutledge, M. (2010). Maintenance of activity and eating change after a clinical trial of tailored newsletters with older rural women. *Nursing Research, 59*(5), 311-321.

Wilcox, S., Castro, C., King, A., Housemann, R., & Brownson, R. (2000). Determinants of leisure-time physical activity in rural compared to urban older and ethnically diverse women in the United States. *Journal of Epidemiology and Community Health, 54*(28), 667-672.

World Health Organization. (2010). Physical Activity. Retrieved from: http://www.who.int/topics/physical_activity/en/

World Health Organization, Bangkok Charter. (2005). The Bangkok Charter for health promotion in a globalized world. Retrieved from: http://www.who.int/healthpromotion/conferences/6gchp/hpr_050829_%20BCHP.pdf

APPENDICES

APPENDIX A

IRB

From: Rode, Peter (MDH) [Peter.Rode@state.mn.us]
Sent: Monday, February 28, 2011 11:56 AM
TO: Witt, Diane E
Cc: Kowski, Ann (MDH)
Subject: RE: IRB submission SagePlus Newsletter Evaluation

Hi Diane:

Thank you for sending information about another study related to SagePlus titled "Minnesota Department of Health SagePlus program evaluation: Newsletter Effectiveness". In this study, participants are asked to respond to a telephone survey about the newsletter. The focus is on participants' reaction to the newsletter of this specific project. After reviewing the material, we find that the study is program evaluation of a public health program and does not constitute research as defined by federal regulations. This study also does not need further review by the Department of Health's IRB.

Please feel free to contact me if you want to discuss this study further.

Sincerely,
Pete Rode
IRB Administrator

MINNESOTA STATE UNIVERSITY
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February 28, 2011

Dear Diane, Karen, Nichole and JoLene:

Re: IRB Proposal, Log **#3758** entitled *"Minnesota Department of Health SagePlus program evaluation: Newsletter effectiveness"*

Your IRB Proposal has been approved as of February 28, 2011. On behalf of the Institutional Review Board I wish you success with your study. Remember that you must seek approval for any changes in your study, its design, funding source, consent process, or any part of the study that may affect participants in the study. Should any of the participants in your study suffer a research-related injury or other harmful outcome, you are required to report them to the IRB as soon as possible.

The approval of your study is for one calendar year from the approval date. When you complete your data collection, or should you discontinue your study, you must notify the IRB. Please include your log number with any correspondence with the IRB.

This approval is considered final when the full IRB approves the monthly decisions and active log. The IRB reserves the right to review each study as part of its continuing review process. Continuing reviews are usually scheduled. However, under some conditions the IRB may choose not to announce a continuing review.

Sincerely,

Patricia Hargrove

Patricia M. Hargrove, Ph.D.
IRB Coordinator
CC: File

APPENDIX B

CONSENT FORM

Consent Form

Project: The Evaluation of a Health Newsletter

Hello, may I speak with _____ (name of potential participant)?

If NO: Thank you. (End the call.)

If they ask if there is a message: No message today, is there another time I can call back? (Log time). Thank you. (End the call.)

If YES,

Introduction:

I am calling with you from Minnesota State University, Mankato regarding an evaluation of the Sage*Plus* newsletter.

How Selected: You were selected as a possible participant because you are enrolled in the Sage*Plus* program through the Minnesota Department of Health.

Voluntary: Your participation is completely voluntary. Your participation has no impact on your enrollment in the Sage*Plus* program. You can skip any questions you don't want to answer. You can stop at any time.

Procedure:

If you agree to be in this study, we will ask you to do take part in a 10-15 minute telephone survey about your experiences with the Sage*Plus* newsletter.

Confidentiality:

The records of this study will be kept private. Your name will not appear on the completed questionnaire, it will be coded and answers are completely confidential. MDH

will not know who participated in the study or answers. Only the researchers for this study will have access to the records.

Risks and Benefits:

There are no risks to you. The benefits of this study will help us make improvements to the newsletter.

Contacts:

If you have questions later, you may contact JoLene Schlegel, by calling (320) 894-3787. If you are concerned about an ethical concern you will need to call IRB personell or the principle investigator, Diane Witt, (507) 389-1725.

Questions: Do you have any questions?

Consent: Do you agree to participate?

YES. Interviewer Print Name _____ Code # _____

NO. Interviewer: Thank you for your time. If you have further questions you can call me back at 507-389-xxxx.

APPENDIX C

MODIFIED MINNESOTA WOMEN'S HEALTHY HEART PROGRAM QUESTIONNAIRE

Modified Minnesota Women's Healthy Heart Program Questionnaire

Code: _____

Length in Program: _____

1. What motivated you to choose to participate in the Sage*Plus* program?
    1. ___Free heart health screening
    2. ___I was worried about my heart health
    3. ___A friend or relative recommended it
    4. ___Gift card or check
    5. ___Other_____

2. How much have you thought about making healthy changes in your lifestyle?
    1. ___No thought.
    2. ___Some thought, but have made no changes.
    3. ___Some thought and have made some changes.
    4. ___Much thought, but have made no changes.
    5. ___Much thought and have made some changes.
    6. ___Much thought and have made many changes.

3. Compared to before you began the program, how would you rate your health in general today?
    1. ___Much worse
    2. ___Somewhat worse
    3. ___About the same
    4. ___Somewhat better
    5. ___Much better

Please answer the following questions, thinking about since you began receiving the Sage*Plus* newsletter:

4. What is your overall impression of the Sage*Plus* newsletters?
    1. ___I have not received the newsletter---If yes, end survey here.
    2. ___I am very impressed with the newsletter.
    3. ___I am somewhat impressed with the newsletter.
    4. ___I am somewhat unimpressed with the newsletter.
    5. ___I am not impressed with the newsletter.

5. What percent of the newsletter do you read?
    1. ___20%
    2. ___40%
    3. ___60%
    4. ___80%
    5. ___100%

6. When you receive the newsletter every month, does it motivate you to work on your goals set in the Sage*Plus* program?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

7. How much does reading the newsletter continue to motivate you to work toward your dietary goals throughout the month?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

8. How much does reading the newsletter continue to motivate you to work toward your exercise goals throughout the month?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

9. How much has reading Sage*Plus* newsletter motivated you to make healthy changes in your lifestyle?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

10. How much has reading the Sage*Plus* newsletter improved your overall dietary habits?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

11. How much has reading the Sage*Plus* newsletter improved your overall exercise habits?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

12. How many servings of fruits and vegetables do you eat daily?

    Fruits: _____ Vegetables: _____

13. How many days a week do you participate in moderate physical activity? (Moderate physical efforts that make you breathe somewhat harder than normal. Do not include walking.)

    Number of days/week _____ Average number of minutes _____

14. How many days per week do you walk for at least 10 minutes at a time?

    Number of days/week _____ Average number of minutes _____

15. Has the newsletter impacted your change in fruit and vegetable intake?
    1. ___No 2. ___Yes

16. Has the newsletter impacted your change in physical activity level?

    1. ___No 2. ___Yes

17. Is the newsletter written clearly?
    1. ___Not at all
    2. ___Not very much
    3. ___Somewhat
    4. ___Quite a bit

18. If the answer to #17 is rated 1-3, what part(s) of the newsletter are not clear? Please check all that apply.
    1. ___Ask Anne
    2. ___Recipe
    3. ___Exercise
    4. ___Current interest article

19. What part(s) of the newsletter did you routinely read? Please check all that apply.
    1. ___Ask Anne
    2. ___Recipe
    3. ___Exercise
    4. ___Current interest article

20. What do you think we could do to improve the Sage*Plus* newsletter?

APPENDIX D

DEMOGRAPHIC QUESTIONNAIRE

Demographic Questionnaire

Code: _____

Age: _____ Race: _____

Primary language spoken in the home: _____

City of Residence: _____ County of Residence: _____

Monthly household income: _____

Number of people supported by this income: _____

Highest level of education:

1) Grade 8 or less
2) Grade 9-11(some High School)
3) Grade 12 or GED (High School Graduate)
4) College or Tech. School, but no degree
5) Associate degree (2-year college graduate)
6) Bachelor's degree (4-year college graduate)
7) Post-graduate degree (Master's, Professional or Doctorate)

Height: _____ Weight: _____

At the time of enrollment in the Sage*Plus* program:

Number of fruit servings eaten daily: ____ **B35 is between 3 and 5**

Number of vegetable servings eaten daily: ____ **B35 is between 3 and 5**

Number of days per week they engaged in vigorous activity: _____
Hours: _____ Minutes: _____

Number of days per week they engaged in moderate activity: _____
Hours: _____ Minutes: _____

Number of days per week they walked at least 10 minutes at a time: _____
Hours: _____ Minutes: _____

APPENDIX E

SAGE*PLUS* GENERAL QUESTION STATISTICS

Motivation to Participate in SagePlus

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Free Heart Screening	18	40.9	40.9	40.9
	Worried About Heart Health	8	18.2	18.2	59.1
	Friend or Relative Recommended It	4	9.1	9.1	68.2
	Gift Card or Check	1	2.3	2.3	70.5
	Other	13	29.5	29.5	100.0
	Total	44	100.0	100.0	

How Much Thought About Making Healthy Changes

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Some Thought, Some Change	5	11.4	11.4	11.4
	Much Thought, No Change	2	4.5	4.5	15.9
	Much Thought, Some Change	25	56.8	56.8	72.7
	Much Thought, Much Change	12	27.3	27.3	100.0
	Total	44	100.0	100.0	

How Would You Rate Your Health in General Today

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Much Worse	1	2.3	2.3	2.3
	Somew hat Worse	1	2.3	2.3	4.5
	About the Same	8	18.2	18.2	22.7
	Somew hat Better	21	47.7	47.7	70.5
	Much Better	13	29.5	29.5	100.0
	Total	44	100.0	100.0	