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Impact of the Arthritis Foundation's Walk with Ease Program on Self-Efficacy, Quality of Life and Pain Reduction in a Group Format

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IMPACT OF THE ARTHRITIS FOUNDATION'S WALK WITH EASE PROGRAM ON SELF-EFFICACY, QUALITY OF LIFE AND PAIN REDUCTION IN A GROUP FORMAT

by

Kelly Reese

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ABSTRACT
IMPACT OF THE ARTHRITIS FOUNDATION'S WALK WITH EASE PROGRAM ON SELF-EFFICACY, QUALITY OF LIFE AND PAIN REDUCTION IN A GROUP FORMAT

by

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Objective: To evaluate the effectiveness of the Arthritis Foundation's *Walk With Ease Program* for individuals with self- or medically-diagnosed arthritis within a group format. The study also investigates the individuals' perceptions on self-efficacy, quality of life and pain reduction pre- and post- intervention.

Background: The prevalence of arthritis is increasing and this places a major burden on individuals, health systems and social care systems globally. Osteoarthritis, the most common arthritis condition, is a major cause of impaired mobility and disability for aging populations. Osteoarthritis affects millions of people around the world. Self-management programs like the *Walk With Ease Program* have proven evidence-based interventions that aim to reduce pain and disability, increase a person's sense of control and quality of life and help prolong pharmacological and surgical interventions.

Methods: The *Walk With Ease Program* was publicized in flyers sent to local senior centers, hospitals, rehabilitation hospitals, health clinics, public health departments, and various employers within the Maricopa County Area. An observational pre-post study design was used to evaluate the effects of the Arthritis Foundation's *Walk With Ease Program* on perceived pain reduction, increased self-efficacy, and quality of life. Twenty

eight individuals with self-reported or medically-diagnosed osteoarthritis or rheumatoid arthritis completed the program within two separate group sessions. The baseline mean values of all variables were calculated and the differences were examined with paired *t*-tests. The paired sample t-tests were used to determine whether significant differences between the average values of the same measurement were made pre/post intervention.

Results: Twenty eight participants were recruited on a voluntarily basis. After 6 weeks of participation in the program, significant adjusted mean improvements were seen for nearly all self-report measures. Statistical significance was seen for self-efficacy (1.42), pain level (-1.82), physical function (9.04) and mental function (8.39).

Conclusion: Self-management programs like *Walk With Ease* are important to individuals with self- and medically-diagnosed arthritis. Individuals with arthritis demonstrated significant improved quality of life and self-efficacy, as well as significant decreased pain. This study strongly suggests more self-management benefit individuals with arthritis by proving positive effects on quality of life, self-efficacy and decreased level of pain. Additionally, it is a brief, low-cost, and easy-to-do community-based walking program.

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LIST OF ABBREVIATIONS

AF: Arthritis Foundation

CDC: Center for Disease Control

ES: Effect Size

HRQL: Health-Related Quality of Life

OA: Osteoarthritis

OT: Occupational Therapy

PC: YOU Can Break the **P**ain **C**ycle Program

RA: Rheumatoid Arthritis

SF-12v2: The Short-Form 12-Item Health Survey

UW-Milwaukee: University of Wisconsin-Milwaukee

WWE: Walk With Ease Program

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Chapter 1

Purpose of Study

The purpose of this study was to evaluate the effectiveness of the Arthritis Foundation's *Walk With Ease (WWE) Program* on perceived quality of life, self-efficacy, and pain reduction for individuals who are community-dwelling (meaning those who are not in assisted living or nursing homes), and self- or medically-diagnosed with osteoarthritis or rheumatoid arthritis. It was anticipated from the review of the literature, that risk factors and etiology of this progressive disorder and current self-management interventions are deemed successful. Self-management programs are categorized as non-pharmacological interventions for arthritis. The *Walk With Ease Program* seems particularly well-suited for clients with arthritis. There is evidence to support this self-management program, which is shown in the literature review. Walking is a low-impact activity that is inexpensive, safe and acceptable to people with arthritis. "Walking has been shown to improve functional status in individuals with arthritis, without exacerbating pain" (Callahan et al 2011). Based on the findings, I hypothesized that participation in self-management programs for well-elderly individuals with arthritis will lessen pain levels, and improve an individual's perceived self-efficacy, as well as quality of life. Improving self-efficacy and quality of life will strengthen one's perceived ability to successfully participate in an exercise program or adhere to lifestyle changes that will help him or her improve health. Four articles were analyzed in an attempt to demonstrate and support these hypotheses.

Significance to the Field of Occupational Therapy

Occupational therapy is a non-pharmacological approach to treat well-elderly individuals with arthritis. The prevalence of arthritis is increasing and this places a major burden on individuals, health systems and social care systems globally. Osteoarthritis (OA), the most common arthritis condition, is a major cause of impaired mobility and disability for aging populations. Osteoarthritis affects millions of people around the world. The pathology of osteoarthritis reflects the result of joint disease, with loss and erosion of articular cartilage, sclerosis and bone overgrowth.

> "Often called wear-and-tear arthritis, osteoarthritis occurs when the protective cartilage on the ends of your bones wears down over time. Osteoarthritis gradually worsens with time, and no cure exists. But osteoarthritis treatments can slow the progression of the disease, relieve pain and improve joint function" (Mayo Clinic, 2012, p. 1).

Another common form of arthritis is rheumatoid arthritis (RA). "Rheumatoid arthritis is a systemic disease that typically affects the small joints in your hands and feet. Unlike the wear-and-tear damage of osteoarthritis, rheumatoid arthritis affects the lining of your joints, causing a painful swelling that can eventually result in bone erosion, and joint deformity" (Mayo Clinic, 2011, p. 1). Rheumatoid arthritis pathology consists of change that takes place in the tissues, and these changes are mainly seen in the synovium which is the tissue that is covering the inner lining of the joints. The synovium becomes thick and swollen. "As the disease progresses the synovium develops a characteristic picture of chronic (long standing) inflammatory arthritis" (Agnihotri, 2009, p. 17).

One goal of occupational therapy is to improve individuals' quality of life by decreasing the impact of disease or disability. Health-related quality of life (HRQL)

focuses on the impact of arthritis on functional health status and well-being as perceived and reported by an individual. Environmental and economic factors can also substantially influence well-being. “HRQL is likely to be a good indicator of both the global effects of arthritis on individuals as well as the effects of treatment” (Fontaine, 2009, p. 4). A good HRQL assessment can help assist with treatment and efforts to regain normality within an affected individual’s life. “A health survey given annually in the United States indicates that adults with arthritis report significantly greater HRQL impairment compared to adults without arthritis” (Fontaine, 2009, p. 4). Using self-management programs for individuals with arthritis, occupational therapists promote self-management of arthritis symptoms, promote healthy lifestyles and develop promising research to contribute to evidence that supports occupational therapy practice.

Occupational therapists can do all of the following to help an individual with arthritis: raise awareness of the diagnosis of arthritis and joint injury prevention, reduce the prevalence of risk factors, provide education to improve knowledge, skills and self-confidence, improve timeliness of joint replacement surgeries and improve their quality of life. “Lastly, since arthritis takes a toll on HRQL, it is essential that interventions are found to promote positive changes in the HRQL of persons with arthritis” (Fontaine, 2009, p. 9). The *Walk With Ease Program* can assist arthritis patients in taking a more active role in managing their disease (physical activity, weight control, etc.). It is expected there will be improvements in the HRQL of arthritis patients.

Chapter 2

Literature Review

Recent literature reveals that arthritis is one of the most common chronic diseases, and a leading cause of disability in the United States and other developed countries. An estimated 50 million people reported medically-diagnosed arthritis from 2007-2009, and it is anticipated to increase to 67 million by 2030 (Cheng, 2010, p. 1264). This increase in the diagnoses of arthritis can put an economic stress on society. *Healthy People 2010* reports that, "Arthritis is the source of at least 44 million arthritis-related visits to healthcare providers, 744,000 hospitalizations, and 4 million days of hospital care per year" (DHHS, 2000, p. 1). As these numbers continue to increase, there is an increasing need to provide and promote effective arthritis self-management education programs.

Self-management programs such as the *Walk With Ease Program* show significant positive changes in individuals' behaviours, as well as positive health outcomes. Self-management education teaches problem-solving skills. A central concept in self-management is self-efficacy—confidence to carry out a behavior necessary to reach a desired goal. Self-efficacy is enhanced when patients succeed in solving patient-identified problems. Arthritis self-management is an intervention strategy that aims to reduce pain and disability, increase a person's sense of control and improve quality of life (AF, 1999, p. 14). Numerous studies have shown that self-management programs, including community-based programs, with elements of physical activity, or health education, or both, are helpful in managing symptoms while reducing hospitalization and other medical expenditures (Kovar, Lorig, Ettinger, Lindroth & Kruger, 1998, p. 12). People who participate in them increase exercise, manage their symptoms better, as well

as report better health-reduced fatigue and have fewer limits on their activities. In addition, they gain these benefits with fewer doctor visits and hospitalizations. The benefits of arthritis health education programs on health behavior and health status have been identified using mixed populations of patients with varying forms of arthritis.

The *Walk With Ease (WWE) Program* was developed by the Arthritis Foundation to be used in community settings for individuals who are self- or medically-diagnosed with a form of arthritis. The program is also beneficial for people without arthritis, particularly those with diabetes, heart disease and other chronic conditions, who want to get more physically active. "Developed in 1999, and updated in 2009, the Arthritis Foundation *Walk With Ease Program* strives to teach participants how to safely make physical activity part of their everyday life through a workbook and the choice of participating in a six-week group program led by a trained leader or doing the program on a self-directed basis, using the workbook as a guide" (AF, 2012, p. 1).

For this study, it was conducted within a group format, which is an additional benefit to the success of the program, supported by Bandura's Social Learning Theory. The Social Learning Theory states:

> "People learn through observing others' behavior, attitudes and outcomes of those behaviors. Most human behavior is learned observationally through modeling: from observing others, one forms an idea of how new behaviors are performed and on later occasions this coded information serves as a guide for action. Social learning theory explains human behavior in terms of continuous reciprocal interaction between cognitive, behavioral, and environmental influences" (Bandura, 2007, p. 2).

Therefore, I predicted will be greater benefits from the group format, than from the self-directed format for the *Walk With Ease Program*. All participants received the *Walk With Ease* workbook which is organized in a progressing sequence to provide the information needed to help participants get ready to walk, begin walking and stay motivated to continue walking. Both the workbook and the corresponding lecturettes conducted during the group sessions provide basic information on arthritis, managing pain and stiffness, tips on proper clothing and equipment, self-monitoring for physical problems, what to do when exercise hurts and how to anticipate and overcome barriers to being physically active. The only prerequisite is the ability to stand on your feet for 10 minutes without increased pain. *Walk With Ease* is a multi-dimensional program, with the primary dimension of walking. The self-management program also includes health education, stretching and strengthening exercises and motivational strategies. These motivational strategies include: self-tests, a six week contract and walking diaries to help participants identify their needs and interests, to set goals and rewards, and to track progress. In addition, the group-format sessions include socialization time, informative lectures and warm up-and cool-down sessions.

The *Walk With Ease Program* is set up as a structured six-week program for walking. Walking is the central activity. Research shows that people with arthritis gain benefits if they walk at least three times a week. Each session is based on: a pre-walk discussion about related topics of arthritis, exercise, or walking safely and comfortably; followed by warm-up exercises; then a walk of ten to thirty minutes; then a cool-down; followed by closing remarks. The idea is to start at a reasonable amount of time and at a

reasonable pace for participants at each session and then build up to thirty minutes or more of walking.

Bruno (2006) evaluated the effectiveness (changes in arthritis knowledge, self-efficacy, quality of life, functional status, pain status and physical abilities) of the *YOU Can Break the Pain Cycle (PC) Program* and the *Walk With Ease Program* exercise program in community dwelling adults with self- or medically-diagnosed arthritis. Variables were studied at six-weeks and four-months post-intervention. The focus of the investigation was to support previous findings that the use of the *YOU Can Break the Pain Cycle* and *Walk With Ease* programs were effective strategies for managing arthritis-related symptoms.

Participants (n=163) were community-dwelling individuals who volunteered through local recruiting (mailings, newspapers and flyers). The participants were divided into three groups (A, B, C). Subjects in group A were to participate in a 90-minute *YOU Can Break the Pain Cycle* Seminar; Subjects in group B completed a 6 week *Walk With Ease (WWE)* program, and subjects in group C completed both programs. Measurements were recorded through a variety of self-reported surveys as well as three physical tests (The Six Minute Walk Test, The Timed Get Up and Go Test and The Functional Walking Test).

Results of this study showed, "The subjects who self-selected *Walk With Ease* (Group B) had more confidence in their ability to do things, were less depressed, had lower scores in regards to health distress and were in less pain from their arthritis as compared with the individuals who participated in the pain management program (Group A)" (Bruno et al 2006, p. 299). The limitations to this study were: fewer significant

results than expected from survey components, self-selection bias and the differences in times participated in each program. Participants' knowledge of arthritis regarding pain management options, exercise and general arthritis facts increased at the four month follow-up for both programs. As a whole, these results speak favorably for the educational component of the WWE program.

Overall, the results of the multifactor community-based study revealed that participation in the WWE and PC programs both have positive cognitive and physical benefits and that this study expands findings of past research that support the use of arthritis self-management programs in effectively controlling symptoms. "WWE and PC are shown to be two such programs available to community-based individuals with self- or medically-diagnosed arthritis, that is affordable, easily implemented and easily accessible" (Bruno et al 2006, p. 305).

Another article by Callahan (2011) evaluated the Arthritis Foundation's *Walk With Ease Program* within a group or instructor-led format as well as self-directed format. The study was an observational pre-post study design and was a small pilot of the revised WWE program to further refine materials of the program based on feedback. "The purpose of the current study was to conduct a large community-based evaluation of the revised WWE program in both group and self-directed format" (Callahan, 2011, p. 1099). The study assured that the revised *Walk With Ease Program* is a safe, easy and inexpensive program that can promote community-based physical activity, decrease disability and improve arthritis symptoms.

Participants (n= 462) in the study were community-dwelling and had to have self-reported joint pain, stiffness or any type of doctor-diagnosed arthritis, without any serious

medical conditions or cognitive impairments. The programs were conducted at 33 sites in the community including senior centers, churches, community health/fitness/wellness centers and departments or councils on aging. Once enrolled, participants selected the group (n= 192) or the self-led (n= 270) format in which they would engage for the next six weeks. Baseline assessments were taken one week prior to the start of the programs and participants were provided, "informed consent, self-report questionnaires (paper and computer-based), and underwent a series of performance-based tests administered by a trained research team member" (Callahan, 2011, p. 1099). Six-week follow-up assessments included performance-based physical function tests, self-report surveys and a written satisfaction survey. In addition, one year after the WWE programs were complete, a survey was mailed to participants to assess long-term effects.

Within this study, there were primary outcome measures as well as secondary outcome measures. According to Callahan, "Primary outcomes included physical function (performance-based and self-report) and arthritis symptoms (pain, fatigue, stiffness)". Participants completed the five following physical performance-based tests: 1) timed chair stands, 2) turn tests, 3) single-leg stance, 4) walking speed and the 5) 2-minute step test. In addition, participants completed the *Health Assessment Questionnaire (HAQ),* a self-reported physical function assessment and the visual analog scale to rate pain, stiffness and fatigue related to their arthritis. Performance-based assessments were lower in score than self-reported assessments for participants in both formats at the six-week follow-up. Secondary outcome measures were based on scores from: *Arthritis Self-Efficacy (ASE) pain and symptom scales, Rheumatology Attitudes Index (RAI),* and *Self-Efficacy for Physical Activity (SEPA).*

This study initially started with 462 participants, but due to conflicts, 38% of the self-directed participants, and 22.6% of the group participants did not complete performance-based assessments. Data was restricted to 403 participants at the six-week follow-up. Of the 403 participants, 362 returned the one year follow-up survey. The limitations within this study were: there was no control group, many participants were female, there was an absence of a measure of physical activity levels as well as the study was limited to a smaller percentage of participants completing all components and assessments.

Results showed that the revised AF WWE program appeared to improve arthritis symptoms, self-efficacy and perceived control, balance, strength and walking pace based on self-reported surveys within both groups. In addition, self-directed participants were more likely to continue walking and retain improvement in more self-reported physical function, symptoms and psychosocial outcomes.

This study concluded that the revised AF WWE program, regardless of delivery (group or self-directed) modestly improves symptoms and function after a six-week intervention. Lastly, future studies need to be completed to analyze the success of motivational strategies within group-format programs.

A study conducted by Nyrop (2011) looked at the effects and evaluated the impact of the Arthritis Foundation's evidence-based *Walk With Ease* (WWE) *Program* on places of employment with individuals who have activity limitations and have self-reported or doctor-diagnosed arthritis. Ninety-four employees and/or participants completed the *Workplace Activity Limitation Scale (WALS)* as a follow-up to the *Walk With Ease Program*. At a one-year follow-up, 69 employees and/or participants

completed the *WALS* again and a paired *t*-test was used to determine whether there was a reduction in workplace limitations.

This study reported a significant increase in *WALS* scores at the six-week follow-up and improvements were maintained at the one-year follow-up, with no changes from the six-week follow-up. Components of the *WALS* scale, which showed the highest improvements were: “crouch/bend/kneel/work in awkward positions”, “stand for long periods”, and “lift/carry/move objects”. Finally, the component of, “concentrate/keep your mind on the job” also improved significantly.

These results provided additional evidence that the Arthritis Foundation’s *Walk With Ease Program* is an easy-to-do, community-based intervention with immediate, and long-term benefits for individuals with self-reported or doctor-diagnosed arthritis. These benefits can be seen within the community, even within the workplace, with individuals who had physical limitations prior to the program.

In December 2010, the Arthritis Foundation’s *Walk With Ease Program* was revised and prepared for the Center for Disease Control (CDC). “For over 60 years, the CDC has been dedicated to protecting health and promoting quality of life through the prevention and control of disease, injury and disability. They are committed to programs that reduce the health and economic consequences of the leading causes of death and disability, thereby ensuring a long, productive, healthy life for all people” (CDC, 2012, p. 12). There was a cooperative agreement and pilot study within the report which discussed the program’s overview, purpose, evaluations, observations, results, lessons and conclusions. The purposes of this pilot study were to assess program satisfaction, facility/instructor and participant levels, obtain feedback about the online training and the

in-person training workshop. Additionally they studied new marketing materials and implementation guides and identify best practices in disseminating the group and individual program within communities, including how to keep individual participants engaged with the Arthritis Foundation (AF). This study discussed recruitment sites, and found the most common sites are senior centers, parks and recreation departments, hospitals/medical centers, independent and assisted living residencies and business corporations.

According to the pilot study, instructors of the WWE program completed a questionnaire with the following components: 1) previous experience leading other Arthritis Foundation exercise or self-management programs, 2) what roles leaders played in implementing the *Walk With Ease* classes, besides leading the classes, 3) the extent leaders were satisfied with the class, 4) problems experienced with delivering the course as it is formatted and 5) space and equipment needs. From a participant perspective, the following components were evaluated, "the information, tools, workbook, main reasons for attending, amount of the *Walk With Ease* workbook read, tools used, presentation of the program, use of strengthening exercises at home, methods used to measure or track walking, walking or doing physical activity outside of class, confidence of continuing walking after *Walk With Ease*, and overall opinions about the *Walk With Ease Program*.

Walk with Ease's information and strategies are based on research and tested programs in exercise science, behavior change and arthritis management. Evaluated by the Thurston Arthritis Research Center and the Institute on Aging at the University of North Carolina, the program has shown to increase balance, strength and walking pace as well as reduce pain for participants. The revised *Walk with Ease Program* decreases

disability and improves arthritis symptoms, self-efficacy and perceived control, balance, strength and walking pace, regardless of whether they are taking a group class or doing the program as self-directed walkers"(AF, 2012, p. 1). It is important to continue evidence-based studies on the *Walk With Ease (WWE) Program* to find the best way to get this information to individuals with arthritis, or to those who are at risk for arthritis and to get them to participate. This study measures improved perceived self-efficacy and quality of life as well as pain reduction in a group format for individuals who are community-dwelling and self- or medically-diagnosed with arthritis.

Hypotheses

This study will test the following hypotheses:

1) Participation in the Arthritis Foundation's *Walk With Ease Program* will decrease perceived pain levels in participants within a group format.
2) Participation in the Arthritis Foundation's *Walk With Ease Program* will increase perceived self-efficacy in participants within a group format.
3) Participation in the Arthritis Foundation's *Walk With Ease Program* will increase perceived quality of life in participants within a group format.

Chapter 3

Methodology

Design

An observational pre-post study design was used to evaluate the effects of the Arthritis Foundation's *Walk With Ease Program* on perceived pain reduction, and increased self-efficacy and quality of life. Twenty eight (n=28) individuals with self-reported or medically-diagnosed osteoarthritis or rheumatoid arthritis completed the program within a group format. The independent variable was the Arthritis Foundation's *Walk With Ease Program.* The dependent variables were perceived pain levels, perceived self-efficacy, and perceived quality of life.

Variables were assessed at baseline, and following six weeks of participation in the program.

Participants

To be eligible for the community trial study, participants had to self-report arthritis or were medically-diagnosed with arthritis, be over 18 years old, be without a serious medical condition (exercise-induced asthma, pulmonary hypertension, cystic fibrosis, heart failure, resting tachycardia and uncontrolled hypertension), be able to speak English and have no cognitive impairments. In addition, they needed be able to stand independently for ten minutes. The *Walk With Ease Program* was publicized in flyers sent to local senior centers, hospitals, rehabilitation hospitals, health clinics, public health departments, and various employers within the Maricopa County Area.

Participants who enrolled in the group format of *Walk With Ease* were taught by a trained *Walk With Ease* instructor. The instructor had completed a one-day certification online program, using the newly created AF WWE Leader Training Guide. The instructor was also certified in cardiopulmonary resuscitation. The instructor purchased a leader's guide, which included a script, syllabus and instructional tools for each of the group sessions and WWE workbooks to be used by participants.

All participants completed self-report assessments at baseline (session one) and at the end of the six-week program (session eighteen). Participants will also complete a self-report one-year follow-up program satisfaction survey. All study methods were approved by the University of Wisconsin-Milwaukee Institutional Review Board.

Instrumentation

Baseline assessments took place at the first meeting at HealthSouth Rehabilitation Hospital in Scottsdale, Arizona. There were two, six-week interventions completed. The first intervention had 12 participants and the second intervention had 16 participants. Group participants (n = 28) completed paper-based, self-report assessments and questionnaires. The following assessments were used: The Short-Form 12-Item Health Survey (SF-12v2) (Appendix A), The Short Version of the Arthritis Self-Efficacy Scale (Appendix B), and a Visual Analog Scale (Appendix C). They were also provided an informed consent form (Appendix D). The following instruments were used:

> ***The Short-Form 12-Item Health Survey (SF-12v2)*** (Appendix A) is a self-report generic health survey which captures practical, reliable and valid information about function health and well-being from the patient's point of view. The SF-12v2 measures eight health domains and provides a

psychometrically-based physical component summary and a mental component summary. This survey can used for adults over 18 years old and be can self-administered or interview-administered. Scores are calibrated so that 50 is the average score or norm (QualityMetric, 2013).

The Short Version of the Arthritis Self Efficacy Scale (Appendix B) is a self-report survey used to measure an individual's confidence in managing their arthritis pain and symptoms. The *Arthritis Self Efficacy Scale* appears to be a reliable and valid measure for use amongst community-based samples of people with arthritis and may be a useful indicator of change in evaluations of arthritis self-management courses (Barlow, 1997).

A Visual Analog Scale (Appendix C) is a self-report survey used to measure pain, stiffness and fatigue caused by arthritis. The standard visual analog scale is a 10 point scale with a border on each side. To the left of the "0" mark appears the indication "No pain at all", and to the right of the "10" mark is written "Pain as bad as it could be". Visual analogue scores were explained best as a function of pain, disability, disease activity, and mood. "The reliability of the visual analogue scale is as good or better than that of all other instruments except the Health Assessment Questionnaire" (Hurst, 1997)

Procedures

Participants registered for the study by contacting the principle investigator via the telephone. The principle investigator communicated to

participants standardized information about the study, as well as the background behind the evidence-based, *Walk With Ease Program.*

Participants voluntarily chose to participate in the Arthritis Foundation's *Walk With Ease Program*. At the first meeting, participants read the consent form while the instructor verbally read it out loud. The instructor stressed the importance of attendance to the program and meeting three times a week, for the six week period. The frequency of the program was one hour (3:30pm-4:30pm) and three times a week (Monday, Wednesday and Friday), for a six week timeframe. Attendance at the 18 program sessions was required to be considered for this study. If a participant missed one session, their baseline data was not considered at the end of the program study. At the start of program, participants were asked to fill out the following assessments, The Short-Form 12-Item Health Survey (SF-12v2) (Appendix A), The Short Version of the Arthritis Self-Efficacy Scale (Appendix B), and a Visual Analog Scale (Appendix C) in their entirety. All participants received a WWE workbook at the time of the baseline assessment. Group classes began the same day as the baseline assessments. The six-week follow-up assessments were administered at the same site. One year after completing the WWE program, participants will be mailed a follow-up survey to assess program satisfaction of the *Walk With Ease Program* (Appendix E). All follow-up testing was done at the same location (HealthSouth Rehabilitation Hospital) as the initial testing to maintain internal consistency.

Six weeks following the start of the *Walk With Ease Program*, participants completed all assessments again.

Data Collection

Research Design and Data Analysis

The baseline mean values of all variables were calculated separately and the differences were examined with paired *t*-tests. The paired sample *t*-tests were used to determine whether significant differences between the average values of the same measurement made pre/post intervention. *T*-test outputs included adjusted mean outcomes for each format, at baseline and at the six-week assessment. Results display differences from the values at baseline. Modeling each outcome measure will control for baseline outcome value, age, sex, race and education. For the results, the effect size (ES) was calculated as the within-format difference in outcomes divided by the standard deviation of the outcome at baseline. Positive ES indicates improvement in an outcome, and negative ES indicates deterioration in an outcome measure. "Qualitatively, ES 0.1-0.3 will be termed "modest," and ES 0.3-0.5 will be termed "moderate"." (Callahan et al 2011). A positive difference will indicate that the measure of outcome has increased from baseline to follow-up. Depending on the scale of the particular outcome, the increase may be viewed as either beneficial or detrimental in terms of the participant's well-being. For example, an increase in the Visual Analog Scale would be detrimental (more pain), while an increase in self-efficacy would be beneficial ("very certain") with outcomes.

For each format and each outcome, the differences from baseline will be tested using the null hypothesis that the difference is zero (no change over time). This testing procedure addresses the primary question; does the WWE program improve perceived self-efficacy, quality of life and reduce pain?

Chapter 4

Results

Participant Demographics

A total of thirty-five participants signed up for the *Walk With Ease Program*. Seven participants did not attend all eighteen sessions so data for these participants was not analyzed. Twenty-eight participants completed the program in its entirety within either of the two *Walk With Ease* sessions. Data was collected at HealthSouth Rehabilitation Hospital over six weeks. Self-reported assessments were completed on day one and at the six-week follow-up. Due to scheduling conflicts, 20% (n=7) of group participants did not complete the six week assessment, so baseline data and six-week follow-up data was not analyzed for them. Figure 1 shows the *Walk With Ease Program* participant flow chart.

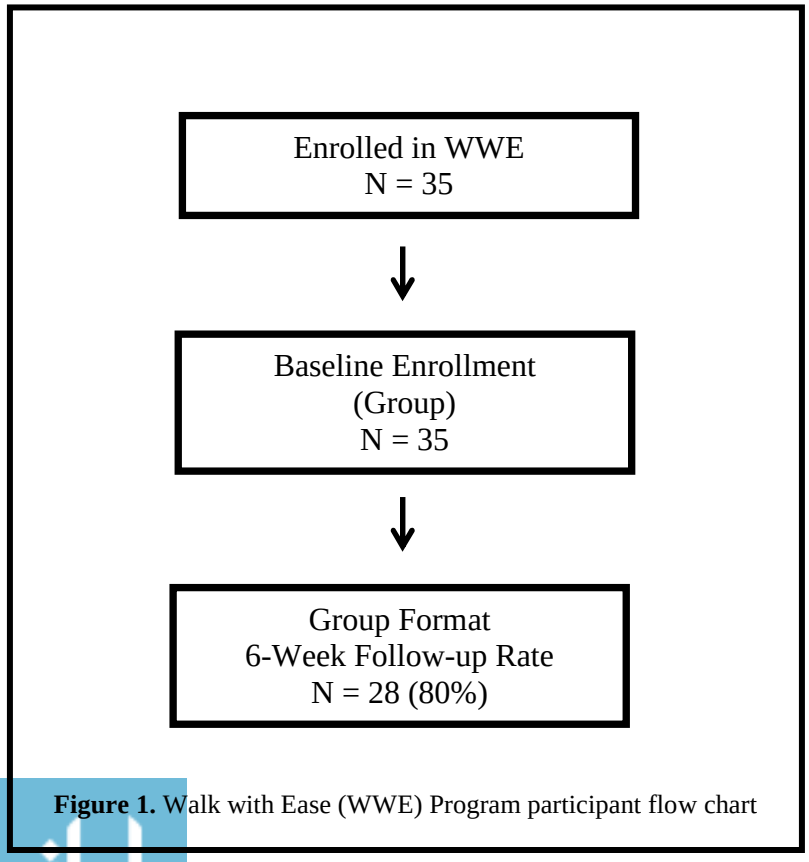


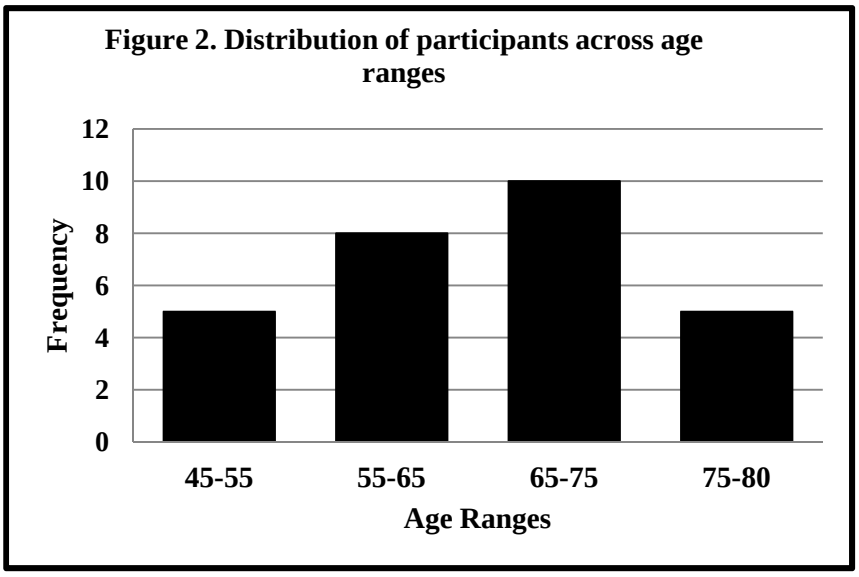
Figure 1. Walk with Ease (WWE) Program participant flow chart

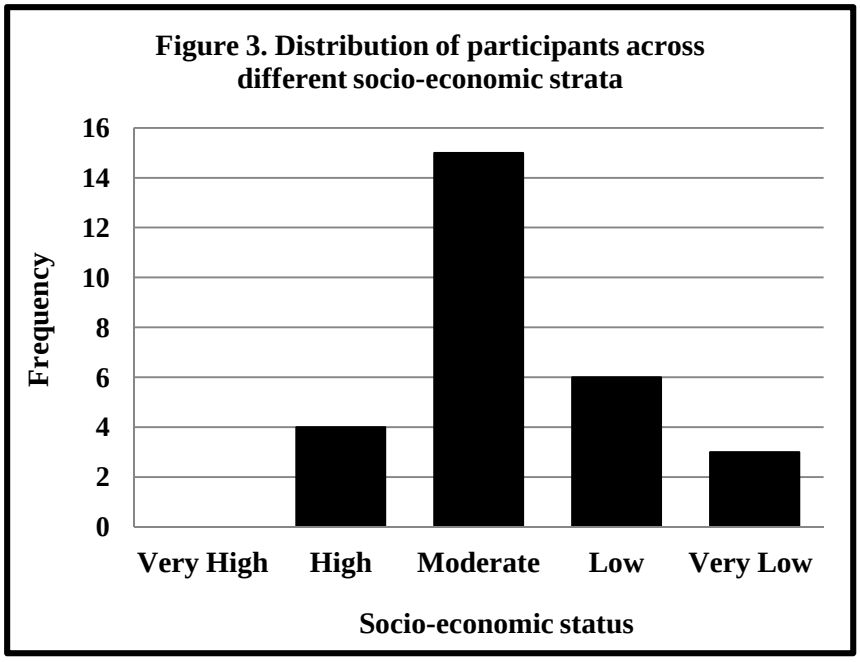
Groups ranged in size from 12-16 participants. There were no significant differences found at the six-week follow-up rates from the baseline demographic characteristics. The sample was mostly female (57%), most were moderate socio-economic status (54%), and most were white (74.8%) with osteoarthritis (75%). All 28 participants volunteered for the study and fulfilled the following requirements: (1) had self-reported arthritis or were medically diagnosed with arthritis, (2) were age 18 years or older, (3) were without a serious medical condition (exercise-induced asthma, pulmonary hypertension, cystic fibrosis, heart failure, resting tachycardia and uncontrolled hypertension), (4) were able to speak English and had no cognitive impairments, and (5) were able to stand independently for ten minutes. Participants signed an informed consent approved by the University of Wisconsin-Milwaukee. The baseline demographics of participants are shown and summarized in Table 1.

Table 1. Baseline characteristics of group participants who completed six-week program

Characteristics	**Group (n=28)**
Demographics	
Age, mean ± SD years	65.5±10.2
Gender (Female/Male)	16/12
Race	
White, %	74.8
African American, %	3.2
Other, %	22.0
Type of Arthritis	
Osteoarthritis, %	75
Rheumatoid Arthritis, %	25
Severity of Arthritis	
Mild, %	67.9
Moderate, %	21.4
Severe, %	10.7
Arthritis Diagnosis	
Self-diagnosed, %	28.6
Medically-diagnosed, %	71.4

Of the 28 participants within the two sessions, 16 were female and 12 were male. Figure 2 shows the age range distribution of the participants. Figure 3 shows what the participants thought their socio-economic status was based on self-reported data.





Survey Results after 6-Week Intervention

The data was evaluated in this study to assess perceived self-efficacy, quality of life and pain level. Participants were given self-report assessments prior to and following the intervention. Each of the participants' responses were evaluated and coded. In the case that an assessment was not accurately or fully completed, data was not analyzed. Paired *t*-tests were run to evaluate the relationship between the participant in the *Walk With Ease Program* and participants' perceived self-efficacy, quality of life and pain level. Repeated-measure linear regression models for each outcome measure were used to assess changes from baseline to 6 weeks.

Results of Physical and Mental Health

The modeling results for adjusted mean physical and mental function at the six week follow-up are presented in Table 2. The table produces adjusted mean differences from baseline to six weeks after participation in WWE. Participation in the *Walk With Ease Program* within a group format resulted in significant improvements in almost all measures of the SF-12. Effect size for physical function indicated moderate significant improvement (ES = 0.44) and effect size for mental function indicated moderate significant improvement as well (ES = 0.46). The mean difference for physical function was 9.04 with a 95% confidence interval (7.27 to 10.83). This difference is considered to be statistically significant. The mean difference for mental function was 8.39 with a 95% confidence interval (5.40 to 11.39), which also is considered statistically significant.

Table 2. Differences in self-reported physical and mental function (SF-12) from baseline to six-week follow-up

Self-reported measure				
Function	**Mean (SD)**		**Difference from Baseline (95% Confidence Interval)**	**P-Value**
SF-12 (Range 0-100)	**Baseline**	**6-Week Follow-up**		
Physical Component Summary (PCS)	37.07 (9.83)	46.11 (8.32)	9.04	< 0.0001
Mental Component Summary (MCS)	41.00 (8.45)	49.39 (7.53)	8.39	< 0.0001
Intermediate values used in calculations Physical Function t = 10.3074 df = 27 standard error of difference = 0.877 p-value = .05			Mental Function t = 5.7500 df = 27 standard error of difference = 1.460 p-value = .05	

The results presented here show that the SF-12 has potential to be used as an outcome indicator of health status with individuals with self-reported or medically diagnosed arthritis participating in the *Walk With Ease Program*. The results clearly demonstrate the benefit of participating in the WWE program. The subjects' health needs were great, as evidenced by the high percentage that reported the presence of various symptoms and conditions, in addition to the low physical and mental health scores prior to intervention. The *Walk With Ease Program* proved to be a beneficial intervention to participants' physical and mental function.

Results of Self-Efficacy

Similar to the analyses run for quality of life (QOL) and the SF-12, paired *t*-tests were run to evaluate the change in perceived self-efficacy pre-/post- *Walk With Ease* intervention. Participants in the *Walk With Ease Program*, within a group format resulted in significant improvements in almost all measures of the Arthritis Self-Efficacy Scale. Effect size for self-efficacy indicated moderate significant improvement (ES = 0.39). The mean difference for self-efficacy was 1.42 with a 95% confidence interval (1.01 to 1.83), which also was considered extremely statistically significant. The modeling results for participants' adjusted mean self-efficacy at the six week follow-up are presented in Table 3.

Table 3. Differences in self-reported psychosocial outcomes (arthritis-related self-efficacy) from baseline to six-week follow-up

Arthritis Self-Efficacy Scale (ASES) (Range 0-10)	**Mean (SD)**		**Difference from Baseline** (95% Confidence Interval)	**P-Value**
Overall Arthritis-Related Self Efficacy	**Baseline**	**6-Week Follow-up**	1.42	< 0.0001
	4.93 (1.72)	6.36 (1.61)		

Intermediate values used in calculations
t = 7.1366
df = 27
standard error of difference = 0.200
p-value = .05

Within this group format, all participants' health statuses were numerically improved, and self-efficacy improved. Changes in self-efficacy and mental and physical health status measures (SF-12) were significantly correlated. For participants, self-efficacy for pain at six weeks was positively correlated to improvement in pain measures

(VAS). Lastly, good mental health, according to the SF-12 at baseline was correlated to improvement in self-efficacy throughout the intervention process.

Results of Pain Levels

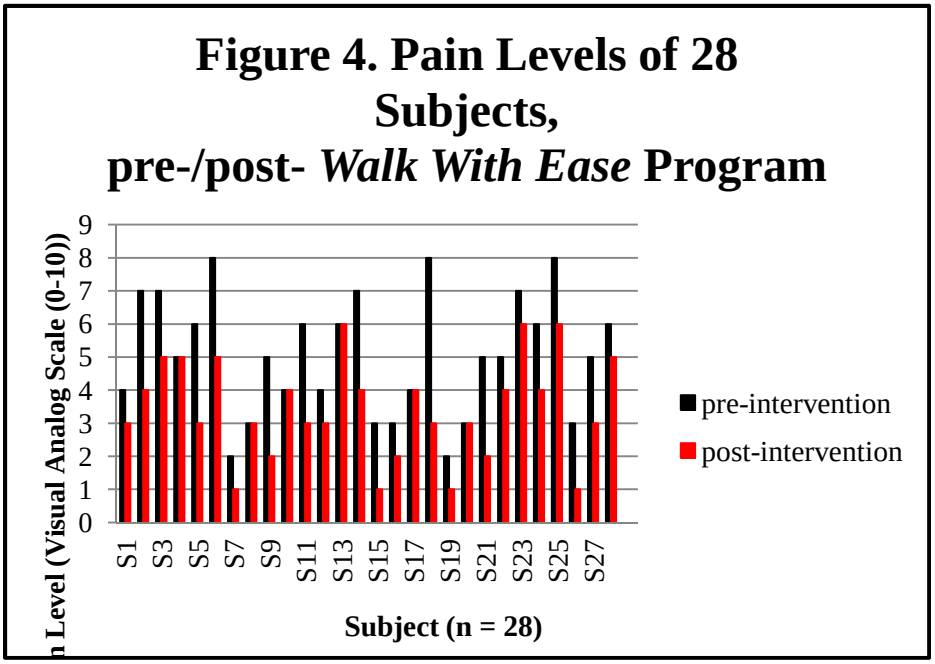
The last model evaluated was the interaction between the *Walk With Ease Program* and the amount of perceived pain participants experienced. Effect size for pain levels indicated moderate significant improvement (ES = -0.48). The mean difference for pain was -1.82 with a 95% confidence interval (-2.41 to -1.23), which also was considered extremely statistically significant. The modeling results for participants' adjusted mean pain levels at the 6 week follow-up are presented in Table 4.

Table 4. Differences in self-reported Visual Analog Scale pain levels from baseline to six-week follow-up

Visual Analog Scale (VAS) (Range 0-10)	**Mean (SD)**		**Difference from Baseline** (95% Confidence Interval)	**P-Value**
Overall Arthritis-Related Pain	**Baseline**	**6-Week Follow-up**	-1.82	< 0.0001
	5.25 (1.76)	3.43 (1.53)		
Intermediate values used in calculations t = 6.3548 df = 27 standard error of difference = 0.287 p-value = .05				

A Visual Analog Scale (VAS) was a functional scale within this study, because it represents a participants' self-report of pain in a functional assessment, which in addition to the SF-12 and ASES it gives meaning to the limitations of the participants and proves the benefits of the *Walk With Ease Program.* Figure 4 graphically represents the

importance of the *Walk With Ease Program* to each of the 28 participants and their level of pain reduction.



These results represent a significant change in pain following the intervention. This is meaningful from the participants' perspective. Both self-efficacy and pain behaviors were improved by this self-management program. These observations, hint that future self-management programs should focus on self-efficacy to help with pain management, and longitudinal studies should be done to test attitudinal change in connection with behavioral change in regards to quality of life, self-efficacy and pain levels.

Summary of Survey Results

Significant main effects for baseline and follow-up testing indicated that the participants who participated in the *Walk With Ease Program* had increased perceived self-efficacy, increased perceived quality of life and decreased perceived pain levels. Participant's knowledge of pain management, general health and exercise facts increased at the six-week follow-up. "According to a study of the Arthritis Self-Management Course, it remains unclear whether a change in knowledge results in changes in behavior or health outcome (Lorig et al 1989), yet other research supports the importance of increasing knowledge as a fundamental component to patient-education interventions" (Bruno et al 2006, p. 303). The *Walk With Ease Program* highlights the importance of walking within a group, as discussed through the Social Learning Theory, but it is unclear if the knowledge gained from the educational component alters behavior. A longitudinal study would need to be conducted to measure prolonged benefits of the program in regards to behavioral changes versus attitude changes.

Chapter 5

Conclusion and Significance of Thesis

Discussion of Results from Thesis

The findings of this thesis support the use of the *Walk With Ease Program* as an effective self-management program for managing arthritis-related symptoms. This study targeted a small population of community-based individuals with self- or medically diagnosed arthritis. With the rising cost of health-care interventions, non-pharmacological interventions, like the *Walk With Ease Program* is a proactive, cost effective way to deal with the symptoms of arthritis and many other health issues.

Significance and Future Direction

The overall purpose of this study was to determine the effects of the Arthritis Foundation's *Walk With Ease Program,* within a group format on perceived self-efficacy, quality of life and pain reduction. Individuals with arthritis constantly make decisions regarding the choice of health-related care for their diagnoses – whether pharmacological or non-pharmacological. Often times, they are not always sure how well an intervention will work with their disability. In recent years, there has been a new movement towards non-pharmacological interventions, like self-management programs, because they are evidence-based, easy-to-do and cost-effective. Recent research related to self-management programs has highlighted, "an intervention designed specifically to meet the needs of a heterogeneous group of chronic disease patients, including those with comorbid conditions, was feasible and beneficial beyond usual care in terms of improved health behaviors and health status and it also resulted in fewer hospitalizations and days of hospitalization" (Lorig et al 1999, p. 15). Studies have been done across numerous areas to evaluate the usefulness and the impact of the *Walk With Ease Program.* These results expand past findings that support the use of arthritis-related self-management programs, specifically the Arthritis Foundation's *Walk With Ease Program.*

Results of this study were reported and examined with paired *t*-tests and proved that walking is an effective intervention for individuals with arthritis. These results were obtained from evaluating participant's perceptions on self-efficacy, quality of life and pain reduction prior to and following participation in the WWE program. These individuals with arthritis consistently showed improvements with increased self-efficacy

and quality of life with decreased pain, secondary to *Walk With Ease* completion. These results were consistent across the majority of all 28 participants evaluated in this study. This is significant and highlights the value and importance of providing some form of information to individuals with arthritis related to self-management programs within a group format. Throughout this study participants overwhelmingly showed a preference for participating in a group format. This supports the theory of Albert Bandura and social learning. Individuals within the *Walk With Ease Program*, used peer support as positive reinforcement and participants interacted with others and learned from each other's' behaviors, attitudes and outcomes from these behaviors (self-efficacy, quality of life and pain).

The study first highlights a need for awareness of the diagnosis of arthritis and joint injury prevention as well as education about self-management programs to improve knowledge, skills and self-confidence. Lastly, programs like WWE could potentially improve timeliness of joint replacement surgeries and improve individuals' quality of life.

Overall the results of this study were impressive, but this study did have certain limitations. Although, extremely significant results were found, limitations of this study may have contributed to fewer significant results. Study limitations include an attrition rate of 20%, evidenced by failure of participants to attend all 18 sessions. Additionally, some surveys were incomplete which resulted in unusable data. All assessments were surveys, resulting in very subjective data collection, and with a survey format this created self-selection bias. Questionnaires based on self-reported data rely on subjective statements that may be criticized as vulnerable to confounding factors and variance.

Participants were asked to report their functional impairments, so this reduced the clarity of impairment information obtained. Another limitation of this study was there was no measure of physical activity levels or a physical-performance assessment. The sample was also limited to Maricopa County, where the flyers for the program were distributed and there was also self-selection bias. The number of participants was limited to 28, which may have caused a bias in the results. Participation in this study also required transportation and time commitment which may have excluded individuals. Lastly, there was no control group to compare the intervention results to.

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APPENDIX A:

The Short-Form 12-Item Health Survey (SF-12v2)

1) In general, would you say your health is:

Excellent	Very good	Good	Fair	Poor
○	○	○	○	○

---

2) The following questions are about activities you might do during a typical day. Does <u>your health now limit</u> you in these activities? If so, how much?

	Yes, limited a lot	Yes, limited a little	No, not limited at all
a. <u>Moderate activities</u>, such as moving a table, pushing a vacuum cleaner, bowling, or playing golf	○	○	○
b. Climbing <u>several</u> flights of stairs	○	○	○

---

3) During the <u>past 4 weeks</u>, how much of the time have you had any of the following problems with your work or other regular daily activities <u>as a result of your physical health</u>?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. <u>Accomplished less</u> than you would like	○	○	○	○	○
b. Were limited in the <u>kind</u> of work or other activities	○	○	○	○	○

4) During the past 4 weeks, how much of the time have you had any of the following problems with your work or other regular daily activities as a result of any emotional problems (such as feeling depressed or anxious)?

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Accomplished less than you would like	○	○	○	○	○
b. Did work or activities less carefully than usual	○	○	○	○	○

---

5) During the past 4 weeks, how much did pain interfere with your normal work (including both work outside the home and housework)?

Not at all	A little bit	Moderately	Quite a bit	Extremely
○	○	○	○	○

---

6) These questions are about how you feel and how things have been with you during the past 4 weeks. For each question, please give the one answer that comes closest to the way you have been feeling. How much of the time during the past 4 weeks...

	All of the time	Most of the time	Some of the time	A little of the time	None of the time
a. Have you felt calm and peaceful?	○	○	○	○	○
b. Did you have a lot of energy?	○	○	○	○	○
c. Have you felt downhearted and depressed?	○	○	○	○	○

7) During the past 4 weeks, how much of the time has your physical health or emotional problems interfered with your social activities (like visiting friends, relatives, etc.)?

All of the time	Most of the time	Some of the time	A little of the time	None of the time
○	○	○	○	○

APPENDIX B:

The Short Version of the Arthritis Self-Efficacy Scale

STANFORD
PATIENT EDUCATION
RESEARCH CENTER

Arthritis Self-Efficacy Scale

For each of the following questions, please circle the number that corresponds to how certain you are that you can do the following tasks regularly at the present time.

1. **How certain are you that you can decrease your pain quite a bit?**

Very uncertain	1	2	3	4	5	6	7	8	9	10	Very certain

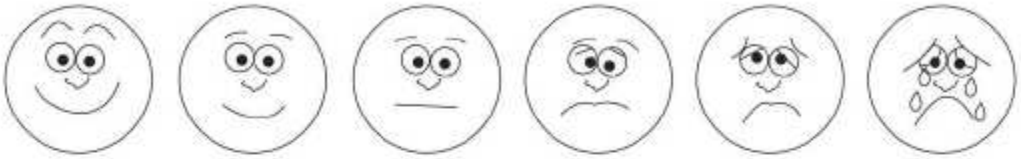
Items (using the same format as above):

1. How certain are you that you can decrease your pain quite a bit?
2. How certain are you that you can keep your arthritis or fibromyalgia pain from interfering with your sleep?
3. How certain are you that you can keep your arthritis or fibromyalgia pain from interfering with the things you want to do?
4. How certain are you that you can regulate your activity so as to be active without aggravating your arthritis or fibromyalgia?
5. How certain are you that you can keep the fatigue caused by your arthritis or fibromyalgia from interfering with the things you want to do?
6. How certain are you that you can do something to help yourself feel better if you are feeling blue?
7. As compared with other people with arthritis or fibromyalgia like yours, how certain are you that you can manage pain during your daily activities?
8. How certain are you that you can deal with the frustration of arthritis or fibromyalgia?

APPENDIX C:

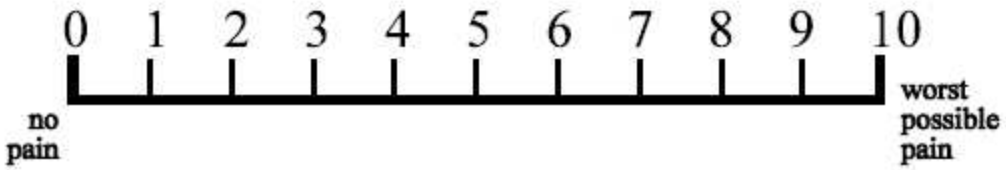
Visual Analog Scale

Faces Pain Scale



0	2	4	6	8	10
Very happy, no hurt	Hurts just a little bit	Hurts a little more	Hurts even more	Hurts a whole lot	Hurts as much as you can imagine (don't have to be crying to feel this much pain)

Visual Analog Scale (VAS)



APPENDIX D:

Adult Informed Consent Form

UNIVERSITY OF WISCONSIN – MILWAUKEE
CONSENT TO PARTICIPATE IN RESEARCH
ADULT CONSENT FORM

THIS CONSENT FORM HAS BEEN APPROVED BY THE IRB FOR A ONE YEAR PERIOD

1. General Information

Study title:

Evaluation of the Arthritis Foundation's Walk With Ease Program on Self-Efficacy, Quality of Life and Pain Reduction in a Group Format

Person in Charge of Study (Principal Investigator):

My name is Kelly N. Reese, OTS. I am a graduate student in the program of Occupational Therapy at the University of Wisconsin-Milwaukee**. I will be the Student Principal Investigator.** This study is sponsored by Arthritis Foundation of the Upper Midwest Region.

Dr. Phyllis King is the Principal Investigator who will oversee this study. Dr. King is the Interim Associate Vice Chancellor for Academic Affairs for the University of Wisconsin-Milwaukee, a Professor in the College of Health Sciences, the Associate Director for the Center for Ergonomics, and the Director of Campus Ergonomics Services.

2. Study Description

You are being asked to participate in a research study. Your participation is completely voluntary. You do not have to participate if you do not want to.

Study description:

The purpose of this study to reveal the benefits of the Arthritis Foundation's *Walk With Ease Program* on **self-confidence and decreased pain, within a group for individuals** who are living in the community and have an arthritis diagnoses. *Walk With Ease Program* seems particularly well suited to clients with arthritis and there is **research to *Walk With Ease*.** Walking is a low-impact activity that is **cheap**, safe and acceptable to people with arthritis. It is **believed** that based on the findings, I believe ***Walk With Ease*** for **healthy,** elderly individuals will lessen pain levels and improve **self-confidence** as well as quality of life. The study will occur at HealthSouth Rehabilitation Hospital in Scottsdale, Arizona. There will be 30 subjects participating. Each subject will attend the Walk With Ease Program three times a week for one hour, for six weeks. They can chose to walk and do strengthening exercises outside of the scheduled programs. This study only includes the pre- and post- measures and a follow-up survey, not the walking

program components. This walking program will take place regardless of research. You can still take part in the program, and not choose to partake in the research component.

3. Study Procedures

What will I be asked to do if I participate in the study?
If you agree to participate you will be asked to Baseline assessments will take place on the first meeting time. Participants will be provided informed content as well as self-report questionnaires. The questionnaires/assessments will be as followed: The Short-Form 12-Item Health Survey (SF-12v2), The Short Version of the Arthritis Self Efficacy Scale, and a Visual Analog Scale. After the 6-week program, the same assessments will be provided within the same site. Six months after completing the Walk With Ease Program, a follow-up survey will be mailed to participants to assess long-term effects of the program.

The Short-Form 12-Item Health Survey (SF-12v2)	Complete self-report survey to measure the physical and mental health components of quality of life at HealthSouth Rehabilitation Hospital.
The Short Version of the Arthritis Self Efficacy Scale	Complete self-report survey used to measure an individual's confidence in managing their arthritis pain and symptoms at HealthSouth Rehabilitation Hospital.
Visual Analog Scale	Complete self-report survey used to measure pain, stiffness and fatigue caused by arthritis at HealthSouth Rehabilitation Hospital.

4. Risks and Minimizing Risks

What risks will I face by participating in this study?
The potential risks for participating in this study are minimal – There could be physical risks to the body including: stiffness, soreness and risk of falling. To decrease these risks, participants will walk on a solid, even surface in a temperature controlled climate with hand railings on both sides of the hall. Participants can stop at any time during the walk to prevent soreness. There is a warm-up and a cool-down session before and after each walk to prevent stiffness. With walking, there are few risks. This is because you will decide how fast you walk depending on your ability. Changes in blood pressure, heart rate, and fainting can happen, and in very rare cases, heart attack or stroke.

There are increased risks, if you have exercise-induced asthma, serious medical conditions, including chronic obstructive pulmonary disease, pulmonary hypertension, cystic fibrosis and heart failure, resting tachycardia (heart rate > 120 beats/min) or uncontrolled hypertension.

By signing below, you are indicating you did not have any of the above diagnoses that could increase risk within this study.

5. Benefits

Will I receive any benefit from my participation in this study?

There are no direct benefits to you other than to further research.

6. Study Costs and Compensation

Will I be charged anything for participating in this study?
You will not be responsible for any cost of taking part in this research study.

Are subjects paid or given anything for being in the study?
You will not be compensated for taking part in this research study

7. Confidentiality

What happens to the information collected?
All information collected about you during the course of this study will be kept confidential to the extent permitted by law. We may decide to present what we find to others, or publish our results in scientific journals or at scientific conferences. Only the PI will have access to the information. However, The Arthritis Foundation, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records.

All information collected about you during the course of this study will be kept confidential to the extent permitted by law. We may decide to present what we find to others, or publish our results in scientific journals or at scientific conferences. Only the PI will have access to the information. However, the Institutional Review Board at UW-Milwaukee or appropriate federal agencies like the Office for Human Research Protections may review this study's records.

Documentation will be stored on a password-protected computer within PI's office in Milwaukee, WI.

All of the information collected for this study will be destroyed when the study is complete.

8. Alternatives

Are there alternatives to participating in the study?
There are no known alternatives available to you other than not taking part in this study.

9. Voluntary Participation and Withdrawal

What happens if I decide not to be in this study?
Your participation in this study is entirely voluntary. You may choose not to take part in this study. If you decide to take part, you can change your mind later and withdraw from the study. You are free to not answer any questions or withdraw at any time. Your decision will not change any present or future relationships with the University of Wisconsin Milwaukee.

If you decide to withdraw or if you are withdrawn from the study before it ends, I will not use the information collected up to that point.

10. Questions

Who do I contact for questions about this study?
For more information about the study or the study procedures or treatments, or to withdraw from the study, contact:

Kelly N. Reese
Department of Occupational Therapy
University of Wisconsin–Milwaukee
P.O. Box 413
2200 E. Kenwood Blvd
Milwaukee, WI 53201
(262)-894-9876

Who do I contact for questions about my rights or complaints towards my treatment as a research subject?
The Institutional Review Board may ask your name, but all complaints are kept in confidence.

Institutional Review Board
Human Research Protection Program
Department of University Safety and Assurances

University of Wisconsin – Milwaukee
P.O. Box 413
Milwaukee, WI 53201
(414) 229-3173

11. Signatures

Research Subject's Consent to Participate in Research:
To voluntarily agree to take part in this study, you must sign on the line below. If you choose to take part in this study, you may withdraw at any time. You are not giving up any of your legal rights by signing this form. Your signature below indicates that you have read or had read to you this entire consent form, including the risks and benefits, and have had all of your questions answered, and that you are 18 years of age or older.

_____
Printed Name of Subject/ Legally Authorized Representative

_____ _____
Signature of Subject/Legally Authorized Representative Date

Principal Investigator (or Designee)
I have given this research subject information on the study that is accurate and sufficient for the subject to fully understand the nature, risks and benefits of the study.

_____ _____
Printed Name of Person Obtaining Consent Study Role

_____ _____
Signature of Person Obtaining Consent Date

APPENDIX E:

One Year Follow-Up Survey

Walk With Ease
One Year Follow-Up Survey

1. **How would you rate your overall satisfaction of the *Walk With Ease Program*?**

2. **Do you think the timeframe of the program was adequate?**

3. **Describe your instructor, and their role with your physical activity**

4. **Are you still walking nowadays?**

5. **How often do you walking, if you're still walking?**

6. **On a scale of 0-10; how would you rate your pain?**

7. **Do you believe the continued physical activity, has helped decrease the pain?**

8. **Is pain still interfering with daily activities? If so, which ones?**