

Building Strength of Aging Women in Wisconsin: The StrongWomen™ Program

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Evaluation

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Abstract

The StrongWomen™ program gives middle aged and older women the opportunity to get the recommended amount of strength training exercise in an easy and affordable manner. In addition to the benefits received from the exercise program, participants receive health and nutrition information to broaden their knowledge and increase their confidence and skills when independently performing tasks of daily living and choosing healthy foods.

The StrongWomen™ program has grown tremendously in Wisconsin since implementing the StrongWomen Ambassador program. Angela Flickinger, Assistant Professor, UW-Extension Department of Family Development and Family Living Educator for Rock County, WI has trained 82 StrongWomen™ program leaders in Wisconsin. Through the training of these leaders and their efforts to educate more women through their classes, approximately 1,700 women have received the benefits of the StrongWomen™ program. These benefits include increased strength, flexibility, and endurance. The momentum seen in the Wisconsin StrongWomen™ program needs to continue and expand beyond Wisconsin to all women. Ultimately more women achieving better health and more successful independence as a result of increased strength will improve their quality of living, maintain their independence, and reduce public costs.

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Situation Statement

A regimen of weight bearing exercise increases strength, muscle mass, and bone density and decreases the risk of diseases such as osteoporosis, arthritis, diabetes, obesity, and depression (Seguin, Epping, Buchner, Block & Nelson 2004). This type of regular exercise is especially beneficial to middle aged and older women. Increasing muscular strength through effective strength training programs also is a realistic and safe mechanism to maintain functional status and independence (Nelson and Wernick, 2000). The Center for Disease Control and Prevention's (CDC) recommendation for older adults is to participate in 30 to 60 minutes of moderately intense aerobic activity most days of the week and muscle-strengthening activities on two or more days a week, working all major muscle groups (legs, hips, back, abdomen, chest, shoulders, and arms). Despite these benefits and recommendations, only seven percent of women participate in the appropriate amount of strength training (U.S. Dept. of Health and Human Services, 2000). There are many factors contributing to this low percentage, including lack of weight training experience, lack of education, and fear or lack of available classes. Although lack of physical activity has led to the decline of healthy people, lack of healthy food choices has also contributed to this problem.

Objectives

The purpose of the StrongWomen™ program is to increase the number of women participating in safe and effective strength training programs throughout the United States and abroad. The objective of the Wisconsin StrongWomen™ program is to establish this program in Wisconsin and to lay the groundwork for increasing the opportunities for women to participate in local, safe, and effective strength training. The Wisconsin StrongWomen™ program has an additional goal of providing innovative nutrition and health education to participants in this program. The StrongWomen™ program in Wisconsin was evaluated to measure the impact of individual participation and the statewide dissemination of the program.

Program Methodology

The StrongWomen™ program, developed by Drs. Miriam Nelson and Rebecca Seguin of the Gerald J. and Dorothy R. Friedman School of Nutrition Science and Policy at Tufts University, is an 8 to 16 week exercise program based upon extensive scientific research (StrongWomen, 2006). The effectiveness of this program is demonstrated using the Senior Fit Test [SFT] which includes a total of five activities that measure the basic abilities necessary to perform daily tasks safely and independently. Effectiveness of the program is demonstrated through pre- and post-program tests.

Throughout the StrongWomen™ program, middle aged and older women are provided information about nutrition and strength-building physical activity. The Wisconsin StrongWomen™ program provides additional ten minute nutrition and health education lessons to enhance the program. These lessons were created by the author and Family Living Educator, Jenny Wehmeier. Lessons are based on researched nutrition and health information and were developed into an appropriate adult learner format to compliment the exercise program. These

lessons decreased the risks and effects of certain diseases (e.g., osteoporosis) and improved the participant's quality of life. Participation in the nutrition and health education lessons is optional.

The StrongWomen™ program lasts 8 to 16 weeks. Participants meet twice a week for 60 minutes. The program is relatively inexpensive, uses simple and easily-accessible equipment, and has the flexibility to be held in a variety of places. There are additional savings if the instructor leads this program as part of his/her job. Equipment needed includes an exercise mat or towel, and a range of dumbbells. Heavier dumbbells are needed further into the program as participants progress in strength development.

The StrongWomen™ program relies on an expert model training approach to provide as many communities as possible with local training opportunities. The Family Living Educator for University of Wisconsin-Extension in Rock County, Angela Flickinger, became the StrongWomen™ (SW) Ambassador for Wisconsin in 2007 after receiving training at Tufts University. Prior to becoming the ambassador, Angela led a StrongWomen™ program with tremendous success in Rock County, Wisconsin. Ambassador training for the StrongWomen™ program is provided through Tufts University and requires the individual to attend two to three StrongWomen™ trainings, be affiliated with or working within a not-for-profit setting, actively be offering StrongWomen™ classes, personally be active in strength training, and have organizational capacity and infrastructure support to offer several StrongWomen™ leader workshops per year. Flickinger achieved the Ambassador distinction in 2007, and that enabled her to train program leaders in Wisconsin.

StrongWomen™ training has increased the capacity for strength building among older women in Wisconsin with 82 additional class leaders trained. Another 15 leaders were trained in the neighboring states of Indiana, Illinois, Michigan, Minnesota, as well as West Virginia.

Evaluation Methodology

Seventy-nine leaders were contacted via e-mail and phone one to six months after their training to determine the impact of their respective programs. The survey included a number of questions about the implementation of the StrongWomen™ program, including the number of sessions they provided and the number of women reached.

As mentioned previously, participants in the 8 to 16 week StrongWomen™ program are given a pre- and post-program fitness test (The Senior Fit Test). The six activities measured pre- and post-program included the following: (1) the chair stand test, which requires the subject to stand up and sit down in a chair as many times as possible in 30 seconds; (2) the arm curl test, which measures the number of five-pound arm curls the subject can do in 30 seconds; (3) the two-minute step test, which requires the subject to walk in place as many steps as possible in two minutes; (4) the chair sit-and-reach test, which measures leg flexibility as the subject reaches towards her toes; (5) the back scratch test, which measures arm flexibility as the participant reaches behind her back; and (6) the eight-foot up and go test, which measures how fast the participant can stand up from a sitting position, walk around a cone that is eight feet away, and return to the chair in a sitting position. This combination of tests measures strength, flexibility, and endurance and provides initial teaching points for the site leaders as well as feedback on how well the participants responded to the strength training. For the participants, the pre- and post-tests can be used as motivation for continuing the program after class and as a tool for measuring their personal gain. At the end of the program, each graduate is given a written evaluation of

their program. Senior Fit Test results over a three year period are included as an example for measuring the success of a StrongWomen™ program.

Results and Findings
Train-the-trainer

There are currently 82 Wisconsin StrongWomen™ trained leaders (see Figure 1). Sixty-nine (87%) of the 79 site leaders contacted responded to the survey. Of the respondents, 29 are currently teaching the StrongWomen™ program in 27 different counties in Wisconsin. Twenty-one respondents were planning in the next year to start the program 19 respondents did not have current plans of using the StrongWomen™ program.

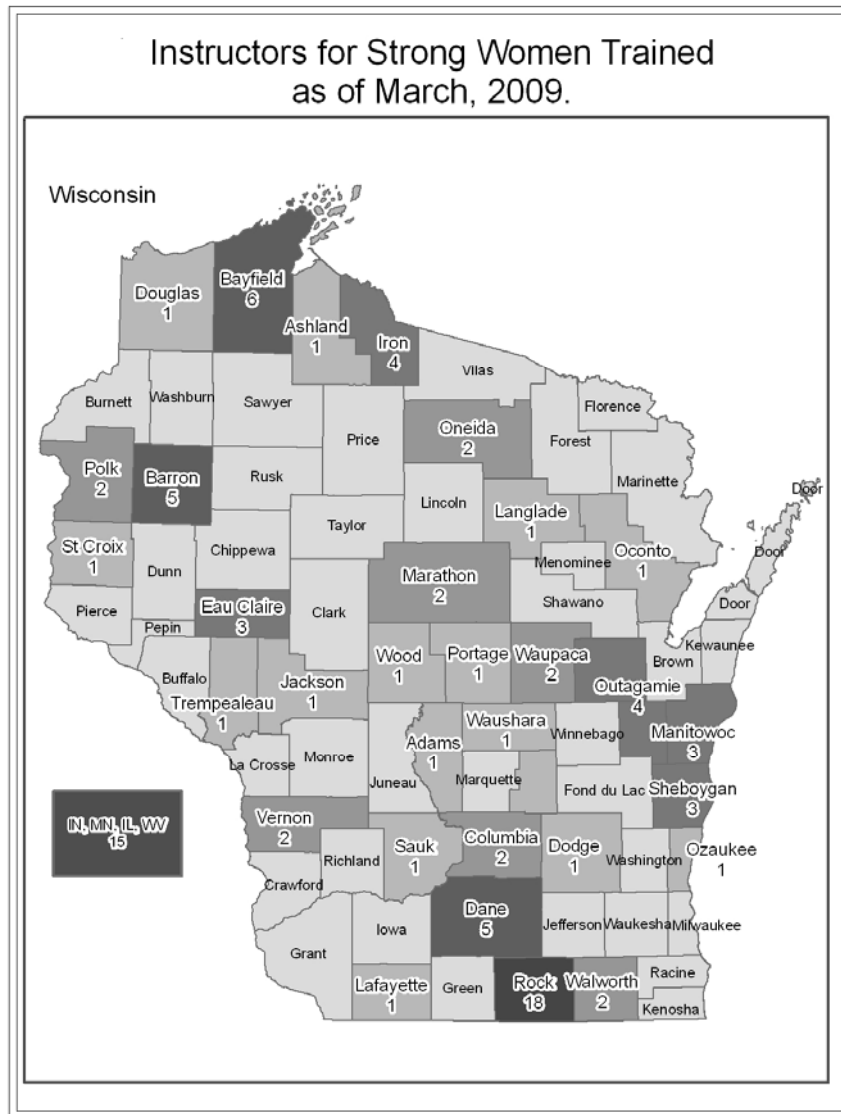


Figure 1

Through 2008, approximately 120 StrongWomen™ sessions were completed with approximately 14 participants per session, which is ideal for the StrongWomen™ program.

Through these StrongWomen™ sessions, nearly 1,700 women received an average of 10 weeks of strength training and health education.

Anecdotal benefits have been reported by trainers as well. Nancy Krueger, site trainer in Outagamie, Waupaca and Outagamie Counties, shared this positive impact as a new leader, *“I have taught exercise and health classes for years and this StrongWomen program has been the most rewarding one I have taught. I have seen great commitment from the ladies in my class and have seen great improvements in their strength. They enjoyed seeing the results from the pre- and post-test, and the most rewarding thing was that they were very motivated to continue the class.”*

Participants - Rock County, Wisconsin

There currently are 18 trained leaders in Rock County who offer StrongWomen™ at 12 locations. To date, 481 individuals have participated in the StrongWomen™ 12-week program in Rock County (a subset of the 1,700 women noted in this paper who have participated in this program). Health and nutrition education lessons were created and incorporated into the StrongWomen™ program in these classes. Post-program questionnaires of these lessons indicated that women increased amounts of fruits and vegetable consumed. In general women who received these lessons made healthier food choices and became more aware of their individual health. The rationale of these lessons was that women were in a stage of change with exercise, and any further health education also would be positively received.

Feedback from the Rock County StrongWomen™ program has been very encouraging, both for the leaders and the participants. One hundred percent of participants learned how to properly use ankle weights and dumbbells to increase their strength. Based on Senior Fit Test results, 95% of participants had improvements in strength, endurance, balance, and flexibility. Quantitative data collected from the Senior Fit Test indicated improvements in the chair stand test, the arm curl test, the two minute step test, the sit and reach, the back scratch test, and the eight-foot up and go (see Figure 2).

Senior Fit Test Rock County Participants n=119		
Name of test	Strength or flexibility area measured	Results: Average gain or loss
Chair Stand Test	Leg strength	30% increase
Arm Curl Test	Arm Strength	30% increase
Two-minute Step Test	Lower extremity endurance and strength	11% increase
Sit and Reach Test	Leg flexibility	71% increase
Back Scratch Test	Arm flexibility	61% increase
Eight-foot Up & Go Test	Leg strength and speed	0.15 seconds decrease in time required to complete test

Figure 2

Twenty seven participants self-reported a decrease in their need for medication that targeted chronic conditions and pain. Many women also reported walking more, eating healthier, and making weight training a life-long commitment.

Conclusions supported by the research and results

The StrongWomen™ program gives middle aged and older women the opportunity to get the recommended amount of strength training exercise in an easy and affordable manner. In addition to the benefits received from the exercise program, they receive health and nutrition information to broaden their knowledge and increase their confidence when independently performing tasks of daily living.

Wisconsin now has a StrongWomen™ program Ambassador and 82 site leaders in 31 counties. Through the training of these leaders and their efforts to educate more women through their classes, approximately 1,700 women have received the benefits of the StrongWomen™ program. These benefits include increased strength, flexibility, and endurance.

As more StrongWomen™ leaders are trained and more classes are made available in new communities there will be additional positive outcomes to report such as the increase in number of statewide participants and the health impacts of those participants. Also, the demand for classes is expected to increase as success stories are shared by participants with friends and acquaintances. StrongWomen™ programs will continue to provide the older female population opportunities to reduce risks for chronic diseases and harmful falls through strength training. The momentum seen in the Wisconsin StrongWomen™ program needs to continue and expand beyond Wisconsin to all women. Ultimately more women achieving better health and more successful independence as a result of increased strength will improve their quality of living, maintain their independence, and reduce public costs.

Implications for Wisconsin Extension

Each county has several opportunities with the StrongWomen™ Program. First, educators can form valuable relationships with partnering agencies such as schools, community centers, places of worship, senior centers, hospitals, clinics, and workplaces to offer this program. Secondly, County extension educators can become site leaders or have a site leader trained and run the StrongWomen™ program through their county Extension office. To become a site leader, individuals must attend an eight hour training that are held around the state on a tri-annual basis. This would expand the capacity of this program statewide facilitating an improved health status for older women. The StrongWomen™ program success is based on intentional facilitation, community partnerships and transformational education.

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