

Chronic Disease Self-Management Program (CDSMP)

Summary:

CDSMP is a lay-led education program for adults experiencing chronic health conditions such as arthritis, lung disease, stroke, and heart disease. The goal of the program is to enable participants to maintain their health and manage their health conditions. CDSMP workshops are held in community settings, meet 2 1/2 hours per week for 6 or 7 weeks, and are facilitated by two trained leaders. Program topics include coping strategies to deal with problems associated with chronic disease, appropriate exercise, appropriate use of medications, communicating effectively with family, friends, and health professionals, nutrition, and how to evaluate new treatments.

Research Summary with selected outcomes:

An experimental study of the program found that CDSMP participants, compared to similar adults not receiving the program had better health, exercised more, had less fatigue, and had lower utilization of healthcare services.

Randomized Controlled Trial (RCT) with adults 40 and older with chronic health conditions

1140 adults were recruited for the study and were randomly assigned to participate in CDSMP or be in the control group. All were 40 or older, with at least one chronic condition related to heart disease, lung disease, stroke, and/or arthritis. Persons in active treatment for cancer or with cognitive impairments were excluded. Of the 952 persons that completed the six month study, the average age was 65, the average years education was 15, about 9 out of 10 were white and about 65% were female. The CDSMP classes were held for groups of 10 to 15 participants in multiple community sites in a four county area. CDSMP participants attended, on average, 5.5 sessions.

Six months later, CDSMP participants, compared to control group participants, reported more exercise, more communication with physicians, better overall health, less fatigue and disability, and less distress over health problems.

Study participants that were assigned to the control group were given the opportunity to participate in CDSMP after six month outcomes were collected; over 70% chose to do so. The researchers measured outcomes for CDSMP participants at 1 year and 2 years (including both the original group and those in the control group that subsequently participated in the program). Compared to their status before participating in CDSMP, participants showed significant reductions in feelings of distress over health status, increases in beliefs they could manage their chronic diseases, and less health care utilization at both one year and two years after study start.

Outcomes study of CDSMP in the Kaiser Permanente health care system

CDSMP was implemented by several health educations of the Kaiser Permanente managed care organization. A total of 68 CDSMP workshop series were offered at 21 sites in 6 states. To be eligible, persons had to be older than 18, have one or more chronic diseases, and be able to physically attend the classes. 613 patients agreed to participate in the study. The average age was 62, the average years of education was 14, 73% were female, and 83% were non-Hispanic white. 21% had chronic lung disease, 24% had chronic heart disease, 26% had diabetes, and 42% had arthritis.

489 study participants completed an outcomes survey 1 year after the start of the evaluation. Compared to baseline scores, the average participant showed significant improvements related to fatigue, shortness of breath, pain, social activity limitations, depression, level of exercise, and communication with physicians.

Population:

Older community dwelling adults. Program has been tested primarily with white women.

Implementation Details:

- Each participant in a CDSMP class needs a copy of “Living a Healthy Life with Chronic Conditions”. The book form costs \$18.95; the audio book form is available on CD for \$32.95. Bulk order discounts are available.
- Each workshop series is lead by two trained Leaders, who are typically non-professional peers with at least one chronic condition.
- Leaders are trained in groups of 10 to 25 by 2 certified Master Trainers. Leader training is designed to be offered over four days. Each leader trainee needs a copy of “Living a Healthy Life with Chronic Conditions”.
- Stanford Patient Education Research Center offers training for Master Trainers. Training offered on-site at Stanford last 4 ½ days and costs \$1,600 per health professional, \$900 for a lay person with a chronic disease. To become certified, potential Master Trainers must also co-lead two complete workshop series within 18 months of initial training.
- Stanford also offers training on location for a cost of \$16,000 plus travel expenses and cost of materials.
- Programs must be licensed to offer CDSMP. Licenses last for three years and cost \$500 for organizations offering 10 or fewer workshops a year, \$800 for those offering 11 to 20 workshops per year, and \$1000 for those offering 21 to 30 workshops a year.

Cost benefit analysis:

- The researchers in the first study listed above estimate that reduced use of health care services over the two year study period saved from \$390 to \$520 per patient.

Ratings on Evidence Based Program websites:

- Center for Healthy Aging Evidence-Based program
- Recommended by the CDC for persons with arthritis

References:

- Program website: <http://patienteducation.stanford.edu/programs/cdsmp.html>
- Center for Healthy Aging: http://www.healthyagingprograms.org/resources/EBSummary_CDSMP_Overview.pdf
- CDC recommended arthritis program: : <http://www.cdc.gov/arthritis/intervention/>
- Lorig K.R., et al (1999). Evidence Suggesting That a Chronic Disease Self-Management Program Can Improve Health Status While Reducing Utilization and Costs: A Randomized Trial. *Medical Care*, 37(1), pp. 5-14.
- Lorig K.R. et al. (2001) Chronic Disease Self-Management Program: 2-Year Health Status and Health Care Utilization Outcomes. *Medical Care*, 39(11), pp. 1217-1223.
- Lorig K.R. et al. (2001) Effect of a Self-Management Program on Patients with Chronic Disease. *Effective Clinical Practice*, 4(6), pp. 256-262.
- Frank, J.C. (2008). Addressing Fidelity in Evidence-Based Health Promotion Programs for Older Adults. *Journal of Applied Gerontology*, 27(1), pp. 4-33.

EnhanceFitness (EF)

Summary:

This program is multi-component group exercise program for older adults to improve their overall functional fitness and well-being. The program was designed to be implemented in community-based organizations, and includes balance, strength, aerobic conditioning, and flexibility exercises. Classes are taught by certified fitness instructors and held three times a week, one hour each.

Research Summary with selected outcomes:

Participants in a disabilities prevention program that included EnhanceFitness as its central component had fewer limitations in daily activities due to physical or emotional problems, improved social functioning, better mental health, higher energy levels, and fewer depressive symptoms compared to similar participants who did not receive the program.

Randomized Controlled Trial (RCT) with users of a suburban senior center in Bothell, WA

A disabilities prevention program involving EnhanceFitness as the central component was tested with older adults recruited from a senior center. Older adults were eligible if they were 65 or older, ambulatory, and did not have any medical conditions (i.e. severe heart or lung disease, severe inflammatory arthritis) that contraindicated exercise. 100 participants were selected, with 53 randomized to the intervention group and 47 to the control group. 99% of the study participants were white, 73% were women, the average age was 72, the median income was \$24,250, and the median education level was 14 years.

The intervention consisted of the following:

- A registered nurse met with intervention participants to review disability risk factors, develop a health promotion plan related to nutrition, exercise, alcohol/tobacco use, and home safety, and introduce the exercise component. Participants that were smokers were referred to smoking cessation interventions and those that were heavy drinkers were urged to seek further evaluation and/or treatment. The study nurse contacted participants three times by telephone to monitor progress towards goals and motivate continued behavior change.
- The EnhanceFitness exercise component was conducted by a trained exercise instructor and consisted of 60 minute classes conducted three times a week over a six month period for groups of 10 to 15 older adults. The 45 older adults assigned to intervention group that remained in the study had over 90% attendance at the exercise classes.

Results included:

- Six months after study start, intervention participants (on average), compared to the control group, had fewer limitations in daily activities due to physical or emotional problems, improved social functioning, better mental health, higher energy levels, and fewer depressive symptoms.
- For most outcomes, intervention participants (on average) improved from baseline to the six month study end, while control group members declined.

The study authors note that the low prevalence of risk factors related to smoking, nutrition, alcohol, and home safety hazards suggests that it was the exercise component that most impacted outcomes. They also note that it is possible that the involvement with the study nurse and/or social benefits of regular attendance at the senior center contributed to benefits.

Outcomes study of EnhanceFitness in nine states

The EnhanceFitness exercise component was evaluated in an outcomes study involving 2,889 older adults involved in a total of 116 classes in nine states. Participants were community-residing older adults that were already participating in a congregate meal program, attending a senior center, or had selected EF as part of a health action plan. The average age was 76. 81% were female; 64% were white, 8% black, 7% Asian, and 4%

Latino. Participants attended, on average, 1.8 EF classes weekly. Followup data was gathered at 4 months for 1,258 of the original participants and at eight months for 880.

Results included:

- Participants, on average, improved in tests of upper body strength, lower body strength, and balance/mobility at both the 4 month testing and 8 month testing compared to baseline. The percentage of participants that rated their health as good or better increased from 87% at baseline to 91% at the 8 month measurement point.
- The subgroup of participants that initially tested as below normal limits (taking in account age and gender) on a given fitness test (upper body strength, lower body strength, balance/mobility) showed significant improvement in that test compared to baseline at both 4 and 8 months.
- The subgroup of participants that tested initially as at or above normal limits for lower body strength and upper body strength showed significant improvement in those tests at both 4 and 8 months.

The researchers note that White and Hispanic participants showed significant improvement in all three fitness tests at 4 months. Asians on average displayed the highest fitness levels at initial testing and tended to maintain these levels at the 4 month followup. 52% of African Americans were below normal limits for balance/mobility at initial testing; this improved slightly but not significantly to 45% at 4 month followup.

Outcomes Study of EnhanceFitness at 2 congregate-meal sites

The EnhanceFitness exercise component was evaluated in an outcomes study held at two senior centers in Georgia. 41 adults 60 and older that passed a medical profile and physician screening were enrolled in the study; 31 completed it. Of those that completed the study, the average age was 74. 58% had an annual income of \$20,000 or less, about half had less than a high school education, about 2/3's were white with the remainder African American, and 87% were female. After 12 weeks participation, participants showed significant improvement in measures of bodily pain, mental health, social functioning, lower body strength, and upper and lower body flexibility compared to baseline levels.

Population:

Older community dwelling adults. The most rigorous evaluation of the program included primarily white woman as participants.

Implementation Details:

- Senior Services of Seattle Washington oversees replication of the EnhanceFitness Program.
- EnhanceFitness instructors are required to have a nationally recognized fitness instructor certification, be currently certified in CPR, and to undergo 1 ½ day training specific to EnhanceFitness.
- Each site where the program is offered is required to be licensed on an annual basis. The initial licensing fee is \$3,000 for one site (\$1,000 for each additional site). The licensing fee includes the cost of training for 12 EF instructors (not including travel costs), instructor manual, participant guides, scannable data collection forms, data entry, analysis, and reports, and 5 hours of technical assistance. Additional consultation is available for \$100/hr. The annual renewal fee is \$300 for one site, \$100 for each additional site.
- A four day Master Trainer training is available for a cost of \$2,000 per person. Master trainers are allowed to train EF instructors.

Cost benefit analysis:

- A study of older adults at an HMO in Washington State found that those that participated in the EnhanceFit exercise program's average annual health care costs increased by \$642, compared to an increase of \$1175 for demographically similar adults that did not choose to participate.

Ratings on Evidence Based Program websites:

- Center for Healthy Aging Evidence-Based program

References:

- Program website: <http://www.projectenhance.org/>
- Center for Healthy Aging:
http://www.healthyagingprograms.org/resources/EBSummary_EnhanceFitness_Overview.pdf
- Wallace et. al. (1998). Implementation and Effectiveness of a Community-Based Health Promotion Program for Older Adults. *The Journals of Gerontology*, 53A(4), pp. M301-M306.
- Belza, B., et al. (2006). The Effects of a Community-Based Exercise Program on Function and Health in Older Adults: The EnhanceFitness Program. *Journal of Applied Gerontology*; 25 (4); pp. 291-306.
- Ackermann, R. T., et al. (2003). Community Exercise Program Use and Changes in Healthcare Costs for Older Adults. *American Journal of Preventive Medicine*; 25 (3), pp. 232-237.
- Moore-Harrison, et. al. (2009) An Evidence-Based Exercise Program Implemented in Congregate-Meal Sites. *Journal of Physical Activity and Health*, 6, pp. 247-251.
- Frank, J.C. (2008). Addressing Fidelity in Evidence-Based Health Promotion Programs for Older Adults. *Journal of Applied Gerontology*, 27(1), pp. 4-33.

A Matter of Balance

Summary:

This program is designed to reduce fear of falling and increase activity levels among older adults. The program recognizes that fear of falling in older adults often results in them curtailing activity, resulting in loss of muscle strength and balance, which can actually increase the risk of falling. The program emphasizes practical strategies to both reduce the risk of falling and associated fears. Trained facilitators conduct eight 2-hr sessions for 8 to 14 participants. The program sessions promote the belief that falls and fear of falling are controllable, helps participants set realistic goals for increasing activity, changing home environment to reduce fall risk factors, and teaches simple exercises known to reduce the risk of falling by increasing strength and balance.

Research Summary with selected outcomes:

A study of the program found that Matter of Balance participants had increased mobility control and intent to perform daily activities at the end of the intervention compared to older adults that did not participate. Matter of Balance participants that attended at least 5 classes reported improved overall functioning, social functioning, and mobility range twelve months later.

Randomized Controlled Trial (RCT) in greater Boston, MA area with senior housing residents

40 public or publicly funded senior housing sites were recruited for participation in the study. Each site was randomly assigned Matter of Balance or serve as a control site. Residents were eligible to participate in the study if they were 60 or older, were English speaking, had a self-reported restriction in activity due to fear of falling, and did not have a major health condition that would preclude participation. 434 participants were included with 216 assigned to the intervention group and 218 to the control group. 90% of the participants were female, 91% were white, the average age was 78, and the average education level was 11 years. The MOB intervention was held twice a week for a period of four weeks. The control group received one two hour group session that included information on falls and reducing risk, but did not address fear of falling or restricted activity.

Results included:

- Two weeks after the end of the intervention, persons who were assigned to Matter of Balance, compared to the control group, reported
 - Statistically significant¹ increased levels of intent to perform various activities (i.e., housework, lawn care, walking outside the home, recreational activities) in the coming week
 - Statistically significant decreased health dysfunction with mobility control (relates to walking, duration of standing, kneeling, bending, stooping without support)
- There were no statistically significant differences between the groups at the six month followup or twelve month followup.

The researchers also analyzed outcomes for the subgroup of Matter of Balance (MOB) participants that attended 5 or more sessions, considered “compliant” with the intervention, about two-thirds of the older adults assigned to receive MOB. Compared to the control group, adults that attended 5 or more sessions were significantly:

- More confident in their ability to perform activities of daily living without falling (at six week and twelve month followup)
- More confident in their ability to reduce falls and to deal with actual falls that occurred (at all three followup points)
- Reported improved overall functioning, social functioning, and mobility range at the twelve month followup.²

¹ Less than a 5% chance that the difference between the groups would be occur by chance.

There were no significant differences in actual falls for any of the groups at any of the measurement points.

Outcomes study of an adapted version of MOB

An adapted version of MOB was evaluated in an outcomes study in Maine. The original curricula was designed and tested with health professionals; the model was adopted for classes to be run by two volunteer lay leaders. Additionally, the training manual was adapted to be easier for volunteers to use; exercises were changed to make them safer for volunteer lay leaders to teach, and a visit by a health care professional was added to address specific issues such as use of assistive devices and how to get up from a fall. Adaptations were made with close consultation with the program developers to ensure that core elements were retained. Volunteers for the outcome study were recruited from the community-at-large; there was no requirement for self-reported restriction of activity due to fear of falling as was a requirement of the original study.

The study did not include a control or comparison group. 335 participants completed at least one session of MOB. 90% of the participants were female, 88% were white and 10.5% Native American, the average age was 79, and the average education level was 13 years. 63% had a monthly income of \$1,500 or less, 28% had fallen recently, about a third used an assistive device, and about half had curtailed activities because of fear of falling.

Compared to their status at the beginning of the study, participants reported:

- More confidence in their ability to perform activities of daily living without falling, to reduce falls, and to deal with actual falls that occurred (at six weeks, six months, and twelve months from baseline)
- Fewer falls per month (at six months and twelve months)

Population:

Older community dwelling adults. Program has been tested primarily with older white women.

Implementation Details:

Original version utilizing health care professionals:

- One of the original program developers, Elizabeth Peterson (epeterso@uic.edu), offers a one day, 7 hour training at a flat fee of \$1500 plus travel costs.
- The program video and facilitator's manual are available for \$139 at <http://www.terranova.org/Title.aspx?ProductCode=FOFVHS> (VHS) or <http://www.terranova.org/Title.aspx?ProductCode=FOFDVD> (DVD).

Lay Leader model:

- MaineHealth's Partnership for Aging provides training for Master Trainers; organizations must have at least one certified Master Trainer to be allowed to implement the program. Candidates should have experience with working with older adults, an ability to demonstrate program exercises, and good communication, interpersonal and facilitation skills. Master Trainers attend a two day training session. Once completing that training, Master Trainers are responsible for teaching coaches to conduct Matter of Balance classes, observe and evaluate coaches, participate in quarterly conference calls, and measure and report outcomes quarterly.

² Note: the study authors note that the "compliant" older adults were on average, significantly different from the noncompliant ones assigned to receive MOB at the start of the study. The compliant group scored significantly better in some measures of functioning and had a higher activity level at baseline. The researchers do not report whether there were any significant differences at baseline between the compliant MOB participants and the control group. Also, MOB were not randomized to participate in different numbers of session; the more compliant participants self-selected to participate more frequently than the non-compliant ones. Therefore, it can not be ruled out that differences in the "compliant" MOB members at baseline, rather than the intervention itself, lead to the different outcomes for them compared to the control group.

- Each Matter of Balance series is taught by two volunteer lay leaders or “coaches”. To become a certified coach, a person must complete eight hours of training conducted by a Master Trainer and agree to teach two Matter of Balance classes within a year of certification. Coaches are also required to attend 2.5 hours of updated training annually.
- A “guest therapist” (such as a physical therapist, occupational therapist, or registered nurse) attends one session to answer questions about reducing fall risks, discuss of the use of assistive devices, and discuss home and community safety.
- Implementation costs for the lay leader model include:
 - \$2,250 Master Coach training for two persons provided in Maine, Washington, or Michigan, which includes manual and videos. (Partnership for Aging will also provide trainings at organizations’ own sites for \$7,500 to \$15,000, depending on the number of persons to be trained, plus travel costs).
 - \$22.00 for each volunteer coach handbook, \$14.00 per participant workbook, and \$10.00 per guest therapist handbook.
 - Class videos (\$143.20 DVD format; \$238 VHS).

Cost benefit analysis:

- None found.

Ratings on Evidence Based Program websites:

- Center for Healthy Aging Evidence-Based program

References:

- Boston University Health and Disability Research Institute:
<http://www.bu.edu/hdr/products/balance/index.html>
- MaineHealth Partnership for Healthy Aging: http://www.mainehealth.org/mh_body.cfm?id=432
- Center for Healthy Aging:
http://www.healthyagingprograms.org/resources/EBSummary_MatterBalance_Overview.pdf
- Healy, T., McMahon, E., Haynes, M. (2006, March). *Sustainability through Collaboration: An AoA Evidence-Based Prevention Program for the Elderly*. Presented at the ASA/NCOA Conference in Anaheim, CA.
http://www.healthyagingprograms.org/resources/FallPrevention_SustainabilityCollaboration.pdf
- Tennstedt, S., et al. (1998). A Randomized, Controlled Trial of A Group Intervention to Reduce Fear of Falling and Associated Activity Restriction in Older Adults. *Journal of Gerontology: Psychological Sciences*, 53B (6), pp. P384-P392.
- Healy, T.C. et al. (2008). The Feasibility and Effectiveness of Translating a Matter of Balance into a Volunteer Lay Leader Model. *Journal of Applied Gerontology*, 27(1), pp. 34-51.
- Frank, J.C. (2008). Addressing Fidelity in Evidence-Based Health Promotion Programs for Older Adults. *Journal of Applied Gerontology*, 27(1), pp. 4-33.

PEARLS (Program to Encourage Active Rewarding Lives for Seniors)

Summary:

PEARLS is an intervention for community-dwelling adults 60 and over who have minor depression or dysthymia, a form of depression. The goals of the program include reducing depressive symptoms and improving quality of life. The program involves eight 50-minute in-home counseling sessions conducted over a 19 week period, followed by three to six telephone contacts. PEARLS utilizes depression care managers that use three depression management techniques: 1) problem-solving treatment, which involves teaching treatment participants to identify and address problems of daily life that are causing and maintaining depressive symptoms 2) having participants plan pleasant activities to engage in between sessions 3) social and physical planning to increase participants' physical activity and social interactions outside the home. The depression care managers work closely with a supervising psychiatrist, who reviews medical problems and medications and contacts the participants' primary care physician to recommend initiating or changing antidepressants if improvement does not occur after 4 to 5 weeks of PEARLS participation.

Research Summary with selected outcomes:

An experimental study indicated that PEARLS participants, compared to those receiving usual care, were almost three times more likely to significantly reduce depressive symptoms, were three times more likely to achieve complete remission from depression, and to have greater health-related improvements in quality of life.

A randomized controlled trial was conducted in Seattle, Washington, and involved 138 participants 60 or older, about half of whom had minor depression and about half of whom had dysthymia (chronic, low-grade depression). Participants were recruited from older adults receiving services from senior service agencies or living in senior public housing. 72% of the sample lived alone, 58% had an annual income under \$10,000, 69% received some type of home assistance (i.e. home aid or home delivered meals), and 36% were taking an antidepressant at the start of the study. The population study was primarily female (79%); 58% were white, 36% were African-American, and 6% other minorities. 72 of the participants were assigned to PEARLS; the other 66 received usual care and served as the control group.

Results included:

- Six months after the study start, 54% of the PEARLS participants achieved a 50% or greater reduction in depressive symptoms, compared to 8% of the usual care group. 44% of the PEARLS group had achieved complete depression remission, compared to 10% of the usual care group.
- One year after the study start, 43% of PEARLS participants achieved a 50% or greater reduction in depressive symptoms, compared to 15% of the usual care group. 36% of the Pearls group had achieved complete depression remission, compared to 12% of the usual care group.
- One year after study start, PEARLS participants significantly improved their emotional well-being and functional well-being; the usual care group did not significantly improve in these areas.

Population:

Older adults with minor depressive disorders. The population PEARLS was tested with was primarily female and included substantial numbers of African Americans and whites.

Implementation Details:

- Depression care managers are social workers or mental health counselors with training in delivering problem-solving treatment and techniques to encourage physical and social activation. A supervising psychiatrist is necessary to assist with eligibility questions, supervision of the problem-solving treatment process, and medication management.
- A free copy of the PEARLS toolkit is available at http://depts.washington.edu/pearlspr/docs/pearls_toolkit_final.pdf

- The cost is estimated at about \$630 per patient, including problem-solving sessions (\$422), follow-up and psychiatric phone calls (\$40), psychotherapy quality assurance (\$87) and depression team sessions (\$81).
- Training is available from the Health Promotion Research Center at the University of Washington School of Public Health. The three-day training includes didactic instruction, demonstration sessions, group discussion, practice exercises, and a hands-on introduction to the PEARLS Toolkit. Training is provided in Seattle and costs \$500 per person.

Cost benefit analysis:

None found.

Ratings on Evidence Based Program websites:

- Highlighted in the CDC Publication “Addressing Depression in Older Adults: Selected Evidence-Based Programs”
- NREPP/Substance Abuse and Mental Health Services Administration (scale of 0.0- 4.0):
 - Quality of research: 3.4 to 3.6 (dependent on outcome evaluated)
 - Readiness for Dissemination: 1.8

References:

- Program website: <http://depts.washington.edu/pearlspr/>
- CDC Issue Brief #2: The “Addressing Depression in Older Adults: Selected Evidence-Based Programs”:
http://www.cdc.gov/Aging/pdf/mental_health_brief_2.pdf
- SAMHSA’s National Registry of Evidence-based Practices and Programs:
http://www.nrepp.samhsa.gov/programfulldetails.asp?PROGRAM_ID=107
- Ciechanowski, P. et al. (2004). Community-Integrated Home-Based Depression Treatment in Older Adults: A Randomized Controlled Trial. *Journal of the American Medical Association*, 291(13), pp. 1569-1577.