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Health training intervention for community elderly

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Abstract

This paper describes the outcomes of a psychosocial intervention that tested whether health training could improve health and functional ability in a group community-residing elders. The health training intervention consisted of eight, 90-minute lecture and discussion classes conducted twice a week for one month. In 3 months following the post-test, an additional 4 booster sessions were delivered once per week for one month. Participants received a total of 20 hours of health training. The NIH-funded SeniorWISE© (Wisdom Is Simply Exploration) study was advertised in the community as a program to learn strategies for successful aging. We describe the health curriculum, and the health and functional outcomes for a 6-month period at pre-intervention, post-intervention, and post-booster sessions. Complete data were available for 110 individuals. There was a statistically significant change on the Direct Assessment of Functional Status (DAFS) ($F = 4.69$ (2, 107), $p < .012$). Health variables remained stable over time. This intervention demonstrated that health training has the potential for noticeable improvement in IADL function.

Keywords

health promotion intervention; memory performance; instrumental activities; older adults; psychosocial

A focus on health promotion can reduce the burden of chronic illness among the older adult population (Freedman et al., 2006; Wolf, Mendes de Leon, & Glass, 2007), increase quality and years of healthy life, and reduce health disparities (U. S. Department of Health and Human Services, 2000). Numerous studies have identified positive associations between social networks, social engagement, and the maintenance of independence and prevention of disability in older adults (Mendes de Leon, Gold, Glass, Kaplan, & George, 2001; Saczynski et al., 2006; Verghese et al., 2003). These and other health-promotion programs have demonstrated efficacy in that they can reduce mortality and increase the potential for an older adult to live independently in the community (Kok, Van den Borne, & Mullen, 1997; Ploeg et al., 2005). Therefore, increasing functional ability and quality of life may determine which older adults will remain independent and which will require care and formal services (Peel, Bartlett, McClure, 2007; Wolf et al., 2007).

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The Medical Outcomes Study Short Form 36 (SF-36), a self-report measure of health and function, was one pragmatic solution to the measurement dilemma in chronically ill persons and resolved the psychometric concerns of researchers who wished to collect patients' views of their health status (Fleishman, Cohen, Manning, & Kosinski, 2006; McHorney, 1996; McHorney, Ware, Raczek, 1993). Mallison (2002) found that individuals have a tendency to exclude some types of health problems and there is little consistency in peoples' approaches to the questions. Older adults are able to self-report their functional limitations; however, the accuracy of their reports is variable. Women tend to over report disability and perform poorer, whereas men tend to under report their disabilities (Merrill, Seeman, Kasl, & Berkman, 1997; Myers, Holliday, Harvey, & Hutchinson, 1993; Zanetti, Geroldi, Frisoni, Bianchetti, & Trabucchi, 1999). However, studies must include not only self-report measures, but also performance measures of health and function.

Due to great variability in self-perceived health and performance-based functional ability, an adult's ability to perform daily activities is a more reliable indicator of day-to-day function than is chronological age. Low or limited health literacy in the elderly has been associated with poorer physical and mental health, less use of preventive services, and misunderstanding of prescription warning labels, but it is not associated with health risk behaviors (Scott, Gazmararian, Willimas, & Baker, 2002; Wolf, Davis, Tilson, Bass, & Parker, 2006; Wolf, Gazmararian, & Baker, 2005, 2007). Important basic daily tasks such as remembering to take medications, preparing adequate meals, managing money, and using the telephone become difficult to accomplish.

Health-promotion intervention programs implemented in various settings have demonstrated successful outcomes when older adults participated in the programs, and when the focus of intervention was reducing behavioral risk, improving functional ability, and enhancing the social and/or physical environment (Baker et al., 2007; Brown et al., 2005; Cattani, White, Bond, & Learmouth, 2005; Cohen et al., 2006; McWilliam et al., 1999; Park, Gutchess, Meade, & Stine-Morrow, 2007; Phelan, Williams, Penninx, LoGerfo, & Leveille, 2004; Scarmeas & Stern, 2003; Stine-Morrow, Parisi, Morrow, Greene, & Park, 2007; Vass, Avlund, Lauridsen, & Hendriksen, 2005).

Optimal treatments must have the correct balance of strength, integrity, and effectiveness for the clinical problem to be remediated (Yeaton & Sechrest, 1981). The major challenge to researchers developing randomized trials is the design of the treatment analogue. If assigned to a placebo or alternative treatment, participants often feel cheated. The goal of the researcher is to develop a similar or comparable treatment to something else, therefore permitting the drawing of an analogy to the main treatment. Strayhorn (1987) argued that the greater the certainty that exists for the target condition, the more frequently that treatment should be used as the standard of comparison for other treatments. Effective health-promotion interventions for research designs must also incorporate the principles of relevance, individualization, feedback, reinforcement, and facilitation from social science theory, and may be decomposed into their basic observable elements for analysis and treatment effectiveness (Czaja, Schulz, Lee, & Belle, 2003). Finally, no studies have established a causal relationship between health-training interventions and functional ability (IADLs), although this is an essential step in assisting older adults to remain independent. This study was intended to fill some of these gaps in knowledge.

As the evidence base of nursing practice matures, nursing researchers are concerned with dosage issues, in particular with the effectiveness of the intervention to be provided in particular circumstances (Reed et al., 2007). In this paper, we describe the outcomes of a psychosocial intervention that tested whether health training could improve self-reported health and function and performance-based instrumental activities of daily living in a group of community-

dwelling elders. The health training was the comparison group treatment in a Phase III randomized clinical trial implemented between 2001 and 2006. The NIH-funded SeniorWISE© (Wisdom Is Simply Exploration) study was advertised in the community as a program to learn strategies for successful aging. The health training was a stand-alone treatment in the trial and we report findings from the first 6-months of the study, which was the most time-intensive aspect of the study for the participants. We followed the recommendations of the CONSORT statement for reporting randomized clinical trials (Moher, Schulz, & Altman, 2001; Smith et al., 2008). The checklist recommends that 22 items be reported. We did not report the memory-training intervention group findings in this article.

This secondary analyses had three aims: 1) to describe the health-training intervention that was delivered as an analogue treatment in a randomized clinical trial; 2) to examine change over time in health and functional outcome measures assessed at three periods: baseline, post-intervention (2 months), and post-booster sessions (6 months); and 3) to evaluate participants' perceptions of the health-training intervention.

METHODS

Procedures

Study participants were recruited from a metropolitan area in Central Texas using print and TV media, as well as direct recruitment at city-run senior activity centers, churches, health fairs, and festivals. Institutional board approval was obtained from the university before data collection began. The rationale for reporting only the comparison treatment is to illuminate an example of a successful intervention. The larger study involved both memory-training and health-training interventions with a 24-month follow up (McDougall, Becker, & Arheart, 2006).

Screening—Two licensed psychologists, and two nursing graduate research assistants under their supervision, conducted eligibility and screening. Eligibility criteria included age (≥ 65 years), ability to speak and understand English, absence of sensory loss, no cognitive impairment, and willingness to participate in the study for 24 months. Sensory loss was determined either over the telephone or in person by self-report evaluation of hearing and vision. Visual and hearing acuity were further evaluated at the “in-person” eligibility screening by evaluator observation and by a self-report checklist developed for this study.

Communication ability in English was assessed using a checklist designed for this study, and completed by a member of the team at the initial screening. We asked seven questions to determine eligibility. If any question was answered incorrectly, the individual was deemed ineligible for the study. The questions were asked in this order. 1) Is participant able to hear conversation on the phone? 2) Is participant able to comprehend English conversation? 3) Is participant able to articulate clearly enough to be understood? 4) Is participant able to participate in a two-sided conversation? 5) Can participant decipher concrete and abstract conversational content? 6) Is participant able to make an appointment for follow-up testing? 7) Can participant repeat back the appointment time and place?

The inclusion criteria required that the participants were 65 years or older, spoke or understood and read English, lived independently in the community, did not evidence cognitive impairment, had reliable transportation, and agreed to attend an initial screening meeting to determine eligibility. In the study, both self-report and performance data were collected. At the screening interview, prospective participants completed checklists and were reassessed to determine whether they met study criteria. Three psychometric measures were used to test executive function. The Controlled Oral Word Association Test (COWAT) (Summerall, Timmons, James, Ewing, & Oehlert, 1997) was used to measure organizational strategy. The

COWAT is part of the Multilingual Aphasia Examination (MAE). The COWAT required corrections for both age and education. The Trail-making Test (Parts A and B) was used to evaluate executive processes (Reitan & Wolfson, 1985). Participants were required to pass Trails A and/or Trails B at or above the 10th percentile for their age group for inclusion in this study. Those participants who passed the other eligibility tests, but had a score just below the cutoff on this test, were reviewed on a case-by-case basis for inclusion in the study. After passing the prescreening and screening batteries, participants were administered the baseline testing battery, which included the measures discussed below.

Potential subjects were excluded if they were less than 65 years of age, scored less than 23 on the MMSE, failed the executive function tests, self-reported a diagnosis of Alzheimer's disease or other conditions (e.g., certain cancers) that would likely result in mortality before study completion, experienced severe sensory losses such as hearing or vision that would prohibit testing or participation in the training, or had participated in prior cognitive training.

Health—The Medical Outcomes Study Health Scale (SF-36), a measure of self-rated health, including overall health, functional status, and well-being, was used to measure general health (Ware & Sherbourne, 1992). The instrument includes eight concepts: (a) limitations in physical activities due to health problems, (b) limitations in social activities because of physical or emotional problems, (c) limitations in usual role activities because of physical health problems, (d) bodily pain, (e) mental health (psychological distress and well-being), (f) limitations in usual role activities because of emotional problems, (g) vitality (energy and fatigue), and (h) general health perceptions. Individuals respond to 36 items on a scale ranging from *poor* to *excellent* and from *much worse* to *much better*. Construct validity has been determined (McHorney et al., 1993). Cronbach's alphas for this sample for the eight subscales ranged from .69 to .91 at baseline, .73 to .89 at post-intervention, and .73 to .83 at post-booster sessions.

Self-reported Everyday Activities—The Instrumental Activities of Daily Living (IADL) Scale (Lawton, 1988; Lawton & Brody, 1969; Lawton, Moss, Fulcomer, & Kleban, 1982) is a self-report test of IADL items, which are complex skills requiring combinations of tasks to complete. The instrument has a total of eight items, such as using the telephone, going shopping, preparing meals, cleaning the house, doing the laundry, providing transportation, taking medications, and handling money. Response formats range from a minimum of three (finances, laundry, and medications), to four (cooking, shopping, and telephone), to five (housekeeping and transportation). The reliabilities and validities of the MAI indices and subindices were affirmed by multiple approaches. Validity of the MAI was determined in three criterion groups: Independently living older people in the community (N=253) and in public housing (N=173), high-intensity in home service recipients (N=99), and institutional wait-list clients (N=65). Internal validity was evaluated with correlations from the conceptual domains and consensus summary for criterion group, clinician ratings, and ratings by testers (Lawton et al, 1982). The PI has used the instrument in multiple studies over a 20-year period. In this sample, the Cronbach's alphas were .39 at baseline, .55 at post-intervention, and .50 at post-booster sessions.

Performance-based Instrumental Activities of Daily Living—The Direct Assessment of Functional Status (DAFS) is a performance-based measure that contains 85 items (Loewenstein et al., 1989; Loewenstein et al., 1992). The DAFS scale measures a wide range of behaviors within each of seven functional domains. Rankin and Keefover (1998) used a modified version of this test with community elders and found it was reliable. Convergent validity of the DAFS was established in two areas. First, by comparing patient's performance with the Blessed Dementia Rating Scale (BDRS), an established measure of general functional status in both research and clinical settings, and is one of the few scales established on the basis of neuropathological studies. The correlations between the DAFS and the full BDRS was .588,

while the correlation between the functional scale and the Mini BDRS was .673, $p < .01$. finally, by comparing functionally impaired individuals with nonimpaired patients, correlations of .59 to .65 were found (Loewenstein et al., 1989). The correlation between the DAFS and the Rivermead Behavioral Memory performance test was .57. An adapted version of the DAFS was used in this study to account for a lack of kitchen and bathroom facilities in the evaluation rooms at the study sites. The DAFS domains that were tested in this study included time orientation, communication abilities, transportation, financial skills, and shopping skills. A fifth domain, medication knowledge, was added for this study. DAFS scores range from 0 to 90. The Cronbach's alphas for this sample were .79 at baseline, .82 post-intervention, and .84 at post-booster sessions.

Recruitment, Screening, and Randomization: The NIH-funded SeniorWISE© (Wisdom Is Simply Exploration) study was advertised in the community as a health-promotion intervention in which the participants were taught strategies for successful aging. Since there were multiple sites, randomization occurred separately for each site (after all participants at that site were screened and eligible). Following eligibility and screening, the study project manager carried out the randomization procedures using an EXCEL program from a list of code numbers assigned to each participant. Eleven separate cohorts met at seven different sites in the community. Once participants were screened and consented, the project manager used a computerized random number generator to randomly assign individuals to the memory- or health-comparison intervention within each cohort. All cohorts were recruited across a 6-month period. Regardless of group assignment, memory, or health training, each group participated in 12 classroom sessions. At the completion of the study period, one hundred thirty-five individuals were assigned to the memory-intervention group and 130 were assigned to the health-promotion group. No class was smaller than four individuals or larger than 15; however, we strove for an average class size of 12 individuals. At the final testing, there were 108 individuals in the memory-intervention condition and 101 individuals in the health-promotion condition. The health-training group was post-tested two months after baseline, received booster sessions at three months, and post-booster testing occurred at six months. According to t-test analyses, the memory-intervention and health-promotion groups did not differ significantly at baseline in either the study variables or the demographics.

Intervention: In planning the curriculum for the health-training groups, we recognized that it was necessary to provide a meaningful educational program to the participants, both to fulfill the purpose of the group and to hold the interest of the participants for 26 months, enough to guarantee their continued involvement over the course of the study. Before the study began, we conducted three focus groups in the community to determine interest in specific health topics and delivery methods (Austin-Wells, Zimmerman, & McDougall, 2003). These focus groups provided the researchers with valuable data for choosing the health-training topics and delivery method.

When the health-training classes began, we delivered the lecture content using PowerPoint slides. Lectures were presented in eight class sessions and four booster sessions. The interactive classes met twice each week for 90 minutes each. During the classes, participation was encouraged throughout the lectures; however, the trainer was not allowed to discuss memory or how to improve memory skills. Three months later, the groups attended four booster classes, one per week for one month. At the first class meeting, participants were informed that their discussion and remarks were welcomed as an integral part of the course. After completion of the classes, the participants filled out questionnaires about their experiences in the classes. We prevented contamination by offering the two treatments on different days of the week. For example, memory training might be offered on Monday and Wednesdays and health training offered at the same site on Tuesdays and Thursdays. In addition, testing for each was also separated on alternate days so that each group would remain intact and form cohesive bonds.

Fidelity across sites was maintained by a number of mechanisms. First, the lecture content for the 18 health-training topics was prepared before the study began and delivered via PowerPoint slide presentations. Second, each class session received the same content; however, the nuances of the sessions may have varied between cohort groups. Finally, the same trainer, a middle-aged Caucasian male nursing student delivered the health training at presentations each site.

Health-training Curriculum: The health-training curriculum consisted of 18 different health topics, which varied by cohort group (Table 1). Fidelity of treatment was insured through a number of mechanisms. Regardless of the site of intervention delivery, each health topic was delivered in PowerPoint format. Each class received the same information on the topic across cohort groups. Handouts were also standardized so that when a group was presented the health topic they received a standard set of handouts to enhance the content. Each group began with the 'alternative medicine' topic because of its widespread interest to a diversity of people and the media coverage of scientific trials that often appeared in the newspaper. Each topic was covered completely in one class session, with the exception of 'alternative medicine,' which occasionally occupied two class sessions. The facilitator provided all other topics from a list of prepared lectures chosen by the participants.

Some classes were comprised mostly of Hispanic persons, others were primarily African Americans; some classes had participants with higher levels of education than others, but the topics chosen by the participants were similar. Methods of presentation varied only by the difficulty of the language used by the facilitators. For example, when a class was comprised of participants with lower academic achievements, the descriptions were purposefully less technical. In the groups with higher levels of education, the participants responded more readily to scientific terminology and language. The meaning of the lectures remained the same, only the method of presentation changed. To maintain a scientific approach, all lectures were evidence-based. For equivalence, the health-training group also received four booster sessions with the emphasis on additional health topics that had not been previously covered in the first eight sessions.

Memory-training Curriculum: The Cognitive-Behavioral Model of Everyday Memory (CBMEM) served as the basis for the memory-enhancing intervention designed to improve, maintain, or prevent decline in the everyday and episodic verbal memory of older adults at-risk for memory loss (McDougall, 1999, 2001, 2002). The model proposed that memory self-efficacy, metamemory, anxiety, and depression mediate the impact of the intervention on memory performance, the proximal outcome, and on IADLs, the distal outcome. The intervention was based on Bandura's Self-Efficacy theory (Bandura, 1997) and consisted of four components: stress inoculation, health promotion, memory self-efficacy, and memory strategy training.

For the health training, a total of 130 individuals were assigned to the classes and completed baseline testing. The health-training classes met at seven sites in the community. There were a total of 11 cohort groups. No group was smaller than four individuals or larger than 25; however, we strove for an average group size of 12. In the health-training condition at post-test, there were 117 individuals, and at post-booster testing, there were 110 individuals. The final sample consisted of 88 Non-Hispanic Whites (71%), 21 Hispanic persons (17%), and 15 African Americans (12%). Most participants were female (78%). However, there were 28 males in the sample, including 21 Non-Hispanic Whites, four Hispanic persons, and three African Americans (Table 2). In the memory-training condition at post-test, there were 127 individuals. At post-booster testing, there were 122 individuals.

Statistical Analysis

Results from the pre-intervention (Time 1), post-intervention (Time 2), and post-booster sessions (Time 3) from the first six months of the larger study are reported here. Complete data were available for 110 participants. Multivariate analysis of variance was used to analyze change over time to avoid the more stringent assumptions underlying the univariate model, such as the assumption of compound symmetry (Tabachnick & Fidell, 1996). Planned contrasts with a Bonferroni adjustment for multiple comparisons were conducted to test for significant changes among the three times. Effect sizes were based on the pooled standard deviation. All analyses were conducted using the Statistical Package for the Social Sciences (SPSS Version 14).

Results

Table 1 contains the health-promotion lecture topics used in the health-training curriculum and the number of times the lecture was presented from most to least popular. Also, included are the purpose and description of the content, the number of times each health topic was taught, and the discussion points that were emphasized in each class. The most popular topics included 'exercise and spirituality,' and 'health,' taught 11 times. The next group of popular topics taught on 10 occasions included 'alternative medicine,' 'weight management,' 'getting the most from your doctor visit,' 'caring for the caretaker,' and 'healing foods.' The next most popular topics were taught nine times and included 'drug interactions,' 'osteoporosis,' and 'maintaining relationships.' The next group was popular, but not in every group. 'Health myths' was taught seven times, 'consumer fraud' five times, 'nutrition' four times, and 'leisure activities' and 'writing family stories' three times. Very little interest was generated for 'health monitoring tests for home use,' which was taught twice. Two topics, 'buying drugs in foreign countries' and 'useful Web sites' were never requested by the participants, and therefore were not presented.

Multivariate Repeated Measures Analysis of Variance

Table 2 and Table 3 present the findings of the multivariate repeated-measures analysis of variance for each outcome measure. There were no statistically significant differences across the three periods for any of the eight scales of the Medical Outcomes Study Health Scale (i.e., SF-36). Self-reported instrumental activities of daily living scale (IADL) scores also did not change significantly across time. There was a statistically significant change over time on the Direct Assessment of Functional Status (DAFS) ($F = 4.69$ (2, 107), $p < .012$). The planned comparisons analysis indicated that scores rose significantly from pre- to post-intervention testing. Scores then decreased somewhat from post-intervention to post-booster session testing, but this change was not statistically significant.

Table 4 includes the findings from the participants' evaluations of the health-training classes. After the eighth class, the participants evaluated four aspects of the classes. Since the study was marketed in the community as a mechanism to facilitate learning strategies for successful aging, we were interested in the dynamism of the trainer and the health topic's ability to retain participants in the comparison treatment condition. Participants rated their expectations for learning, contributions to society, engagements with the group, and explorations of ideas.

Discussion

In this study, we demonstrated that older adults positively received a 20-hour health-promotion curriculum and were committed to successful aging as evidenced by their attendance at the classroom sessions and their positive evaluations of the class experience. Overall attrition was only 14.3%. The social interaction provided by the classes appeared a significant motivator for

these participants, some of whom arranged to continue meeting outside of classes. Most participants described themselves as very busy people, a claim supported by their marked-up appointment calendars; yet, most continued to attend the classes and the booster sessions. There were no changes in health or mental health outcomes following the intervention. However, the volunteers in this study were a robust group of seniors living independently in the community and continued to drive automobiles; many were employed. We excluded individuals with cognitive impairments.

The rationale to allow each health-training group to choose the next class's theme from a list of 18 health-promotion topics was a deliberate retention strategy that was employed to maintain interest and enthusiasm in the longitudinal study. At the first class meeting, participants were informed that their discussion and remarks were welcomed as an integral part of the program. Twice during the program, they were asked to furnish anonymous feedback about their experiences in the classes. The topics of greatest interest included a mix of esoteric and pragmatic choices. Participants expressed less interest in the remaining topics, including 'consumer fraud,' 'nutrition,' 'leisure activities,' 'writing family stories,' and 'health tests for home use.' Participants never requested two lectures: 'buying drugs in foreign countries' and 'Web sites for seniors.' Although all the senior centers that served as sites in this study had computers available, and many participants had instruction in using a computer, they showed little interest in this topic.

The significant increase in DAFS scores following the intervention was an unexpected finding. Even though the group had fairly high IADL scores on the pre-test, there was a significant improvement from the pre-test to post-intervention. Although these scores decreased slightly at Time 3, the group mean was still higher than on the pre-test. Since instrumental activities become more difficult with advanced age, the study demonstrated that health-promotion intervention might have positively influenced the participants' everyday functions. Even though there was a ceiling effect at pre-test in both groups, there was a significant improvement following both the intervention and booster sessions.

Functional decline has often been measured with self-report measures, but they are often inaccurate and insensitive to change (Fried, Ferrucci, Darer, Williamson, & Anderson, 2004; Phelan et al., 2004). In this study, the self-reported IADL measure had poor reliability. It was our intention to have not only a self-report, but also a performance measure of this important everyday task. The instrument has a total of eight items such as using the telephone, going shopping, preparing meals, cleaning the house, doing the laundry, providing transportation, taking medications, and handling money. However, given the low reliabilities at all measurement periods, it is doubtful that the questionnaire was valid in this sample.

However, in this study, the measurement of functional outcomes went beyond self-reported IADL measures. The DAFS had strong alpha reliabilities at all measurement periods. We propose two possibilities to explain the increase in DAFS scores: transfer of learning and practice effects. If there was a transfer of learning effect from the classroom to everyday activities, then how this transfer takes place, and ultimately, how this transfer is best applied to various situations, is of major interest to cognitive aging researchers (Bigge & Shermis, 1999). This transfer issue has particular relevance for learning and the maintenance of independence in older adults. Previous investigators demonstrated a deterioration of transfer ability with age based on the hypothesis that the transfer mechanism in the brain had greater deterioration on more complex tasks than with simple motor functions, or routine tasks, such as activities of daily living (Fried et al., 2004; Goldstein & Braun, 1974; Lee & Vakoch, 1996; Phelan et al., 2004; Speelman & Kirsner, 2001). Few studies have included performance-based IADLs as an outcome variable, and its inclusion in this study suggests this may be a fruitful area for future exploration. Edwards and colleagues (2002) demonstrated that older

adults who participated in a 1-hour speed of processing training session had post-test transfer effects to performance-based IADLs, but not to other domains of cognitive functioning.

Repeated practice at completing the DAFS could have contributed to the improvements in the DAFS scores detected in this study, although the first and second tests were separated by at least nine weeks, and the second and third tests by at least 14 weeks. The DAFS was only available in one version and participants may have become familiar with the testing sequence and the everyday tasks that were evaluated. Even though the instrumental activities varied in levels of complexity from relatively simple to complex, they were not novel for the average person in this study. The tasks included addressing a letter, writing a check, balancing the check register, identifying and calculating money, making change from a grocery purchase, reading a prescription label and dialing the pharmacy to order a refill, dialing a telephone number, remembering a grocery list given orally, and reading from a book. However, many of the Hispanic elders with low literacy had not written a check before it was required of them in the DAFS. If practice effects contributed to the observed improvements in DAFS scores, it seems possible that participants with less exposure to these tasks would be more likely to benefit from practice. This is an area for future research.

This study had several limitations. First, the participants in this study were highly motivated volunteers who were concerned about strategies for successful aging. The volunteer sample may have been more prone to attend business, social, religious, and social functions than the average older adult; thus, we cannot generalize these findings to other populations. Second, this article reports the findings from the first six months of enrollment only. This period was the most dose-intensive component of the study. There was some attrition across time, and it is possible that those who derived the least benefit were not reflected in the final data collection. Nevertheless, health-promotion interventions are robust treatment analogues and evidence from this randomized trial demonstrates the value of the topic in retaining individuals in comparison treatments (a control usually associated with no treatment).

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Table I

The health promotion lecture topics used in a psychosocial intervention in community elderly with the number of times the lecture was presented following each topic

TOPIC OF HEALTH TRAINING & TIMES PRESENTED	PURPOSE	DISCUSSION POINTS
Exercise (11)	This lecture informed participants about the latest research on the benefits of exercise for older people.	Exercise was the most popular topic in the lecture series. Participants were active in many exercise plans already. This lecture stimulated discussions on this topic.
Spirituality and Health (11)	This lecture covered the scientific findings about the role of spirituality in maintaining health and recovery. In addition, research findings on attendance at a religious organization were presented.	Discussions evolved around the terms "religion" and "spiritual." Participants shared their interpretations of these terms.
Alternative Medicine (10)	This lecture introduced the various forms of alternative medical practices, and stimulated discussion about those practiced by participants or their families.	Most participants discussed the use of chiropractic.
Weight Management (10)	This lecture addressed the dangers of obesity and lack of attention to diet experienced by many older adults. Both obesity and malnutrition were discussed.	Due to the level of media saturation on the subject, we were surprised that this was one of the most popular lectures.
Getting the Most from Your Doctor Visit (10)	This lecture explained the time demands on physicians by current medical regulations and suggested ways to insure that participants acquire all the information they want from an office visit.	Most participants felt that their relationship with their medical provider was a very positive one. There were few complaints about the lack of time or attention paid them.
Caring for the Caretaker (10)	This lecture covered the roles of grief and exhaustion, likely emotions associated with caretaking, the emphasized suggestions for respite.	Participants felt that care giving was an expected and normal part of family life, and that the most negative emotions surrounding it were due to unfair delegation of work within families.
Healing Foods (10)	This lecture presented information about the phytonutrients found in plants and the new information available about their healing qualities.	Participants with higher education levels tended to take notes and ask questions; those with less education were less interested in this topic.
Drug Interactions (9)	This lecture instructed participants about the likelihood of interactions between drugs, and complicating issues involved in taking multiple drugs.	The lecture stimulated discussion about participants' experiences with drug interactions.
Osteoporosis (9)	This lecture presented information about avoiding	Participants expressed a desire to know as much as possible about this

TOPIC OF HEALTH TRAINING & TIMES PRESENTED	PURPOSE	DISCUSSION POINTS
	falls, as well as drugs that treat osteoporosis.	disease because most were affected by it either directly or indirectly.
Maintaining Relationships (9)	This lecture covered the changes that occur in relationships as people age, including those with friends, families, and romantic partners.	Participants' discussions centered on the difficulty of maintaining relationships as they aged.
Health Myths (7)	This lecture presented the various familial, cultural, and other beliefs about health.	Most participants enjoyed recalling the health practices of their families.
Consumer Fraud (5)	This lecture covered the fraudulent practices aimed primarily at seniors.	Participants had little interest in this topic, and none discussed schemes they had experienced.
Nutrition (4)	This lecture presented information about the nutritional quality of many available commercial foods, and suggested healthy alternatives.	Few participants utilized fast food restaurants as a major source of meals, and those who did, understood that they probably were not obtaining maximum nutrition.
Leisure Activities (3)	This lecture presented various leisure activities that participants might want to explore or had already experienced.	Although chosen three times by participants for presentation, they stated that they had little interest in this subject.
Writing Family Stories (3)	This lecture presented references to information on writing family genealogies or other family stories.	Participants has either already acquired these types of sources or had no interest in writing.
Health Monitoring Tests for Home Use (2)	This lecture provided information about available home health monitoring tests and discussed their accuracy.	Participants had little interest in this subject because they frequently used medical facilities to monitor their conditions.
Buying Drugs in Foreign Counties (0)	This lecture discussed the pros and cons of buying drugs in Mexico, Canada, or on the Internet.	No participants were interested in this subject.
Useful Web Sites (0)	This lecture presentation listed Web sites of particular interest to seniors.	Participants were not interested in this subject because of their limited use of and experience with computers.

Table 2

The gender and ethnicity of elderly participants in a health promotion intervention study (N=124)

	Non-Hispanic White		Hispanic		African American		Total	
	Frequency	%	Frequency	%	Frequency	%	Frequency	%
Gender:								
Female	67	54%	17	14%	12	10%	96	78%
Male	21	17%	4	3%	3	2%	28	22%
Total	88	71%	21	17%	15	12%	124	100%

Table 3

Health outcome measures at baseline (pre-intervention), post-intervention (2 months), and post-booster sessions (6 months) ($N = 110$).

Measure	Time 1 Mean (SD)	Time 2 Mean (SD)	Time 3 Mean (SD)
Physical Functioning	63.93 (27.29)	65.65 (23.82)	65.75 (24.82)
Role Physical	63.94 (40.93)	62.62 (39.36)	65.19 (37.74)
Bodily Pain	72.88 (23.60)	68.06 (23.75)	68.49 (24.49)
General Health	69.71 (19.01)	68.25 (17.89)	69.50 (18.31)
Vitality	63.86 (18.17)	62.36 (18.90)	63.14 (20.44)
Social Functioning	84.98 (19.67)	84.06 (20.47)	81.65 (21.01)
Role Emotional	82.86 (30.70)	75.24 (36.11)	77.46 (33.17)
Mental Health	80.65 (14.78)	78.84 (15.60)	78.95 (15.12)
DAFS	81.93 (6.11)*	82.87 (5.89)*	82.55 (6.02)
IADL	25.65 (1.03)	25.71 (1.09)	25.74 (.96)

The first eight measures compose the Medical Outcomes Study Health Scale (SF-36), a measure of self-rated health. DAFS = the Direct Assessment of Functional Status. IADL = the Instrumental Activities of Daily Living Scale.

* Differences significant at $p < .05$: ($F = 4.69$ (2, 107), $p < .012$)

Table 4

participants' evaluation of the health training classes (N=124)

	Total Responses	%
Item 1	124	
Always	93	75
Sometimes	28	23
Item 2	124	
Always	77	62
Sometimes	44	35
Item 3	124	
Always	104	84
Sometimes	15	12
Item 4	124	
Always	104	84
Sometimes	22	18

Item 1: "The classes met my expectations."

Item 2: "I feel I made a contribution to society."

Item 3: "I felt a part of my class group."

Item 4: "I was inspired to explore new ideas."